

WINDSTREAM COMMUNICATIONS, LLC
11101 Anderson Drive
Little Rock, Arkansas 72212



March 16, 2017

Duke Energy
Attn: Tim Umbaugh
390 N. Main Street
Martinsville, IN 46151

RE: Notices of invoice dated November 30, 2016, for Lafayette and Hanover jobs

Mr. Umbaugh,

I am hoping that you can help me answer some questions concerning the invoices for the Lafayette and Hanover jobs totaling \$970,489.88.

I understand that Duke Energy typically does not provide additional detailed information concerning the make-ready work that it performs, but I think that you would agree that given the large variance between the costs listed in the make-ready estimates we received and the costs finally invoiced to us, whatever information Duke Energy could share with us to support its statements that the work was requested to be performed on an expedited basis would help us immensely in getting these invoices paid. Without some written evidence (emails, signed requests, etc.) that this work was requested to be expedited, it will be difficult for us to approve the payment of the additional amounts.

If you, or anyone else from Duke Energy, would like to speak with me about this matter directly, please feel free to email me at Daniel.King@windstream.com or call me at (812) 759-7973. Otherwise, I look forward to receiving the additional information that we have requested.

Sincerely

A handwritten signature in black ink, appearing to read "Daniel King". The signature is written in a cursive style with a large initial 'D' and 'K'.

Daniel King
Senior Counsel
Windstream Services, LLC

P.O. Box 25410, Little Rock AR 72212
(812) 759-7973

WIN3226

WINDSTREAM COMMUNICATIONS, LLC.
11101 Anderson Drive
Little Rock, Arkansas 72212



March 13, 2017

Duke Energy
Attn: Tim Umbaugh
390 N. Main Street
Martinsville, IN 46151

RE: Two notices of invoice dated November 30, 2016 Lafayette job totaling \$911,452.36 and Hanover job totaling \$59,037.52

Mr. Umbaugh,

This letter is to notify you that Windstream will not be paying the invoices involved in final charges described in Lafayette and Hanover jobs totaling \$970,489.88 until Metronet Inc. pays Windstream. Metronet, Inc. will not pay said invoices until documentation is provided supporting the additional charges. Additionally, proof that expediting these jobs had been requested and additional costs approved.

Sincerely

Daniel King
Senior Counsel
Windstream Services, LLC

P.O. Box 25410, Little Rock AR 72212
(812) 759-7973

WIN3227



November 17, 2016

Windstream Communications (KDL)
Poles
P. O. Box 25410
Little Rock, AR 72221

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Hanover job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Hanover Part 1	\$69,461.86	\$21,441.00	P1160706101	\$48,020.86
Hanover Path 2	\$21,214.98	\$18,804.00	P1160717901	\$2,410.98
Hanover Group 2	\$17,386.85	\$14,634.00	P1160786501	\$2,752.85
Hanover Group 3	\$47,188.83	\$41,336.00	P1160795501	\$5,852.83
			PAY THIS AMOUNT	\$59,037.52

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh

WIN3228



INVOICE

Invoice: P1160706101
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$48,020.86

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PART 1	\$48,020.86
Amount Due:			\$48,020.86

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160706101

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

00083509

Total Amount Due:

\$48,020.86

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN3229

1616313136303730363130310000800048020860



INVOICE

Invoice: P1160717901
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$2,410.98

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PATH 2	\$2,410.98
Amount Due:			\$2,410.98

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160717901

Corporation Code: 75115
 Please Pay By: 12/15/2016
 Customer ID: 00083509
 Total Amount Due: **\$2,410.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN3230

16163131363037313739303100001000024109&2



INVOICE

Invoice: P1160786501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Customer ID: 000107473
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$2,752.85

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 2	\$2,752.85
Amount Due:			\$2,752.85

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160786501

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

000107473

Total Amount Due:

\$2,752.85

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Amount Enclosed



WIN3231

1616313136303738363530310000900002752859



INVOICE

Invoice: P1160795501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$5,852.83

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 3	\$5,852.83
Amount Due:			\$5,852.83

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160795501

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

00083509

Total Amount Due:

\$5,852.83

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN3232

1616313136303739353530310000200005852838



November 30, 2016

Windstream Communications
 Attn: Poles
 P. O. Box 25410
 Little Rock, AR 72221

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Lafayette job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project. Listed are refunds that were subtracted from the invoices. Also listed is a credit for a payment of \$134,738.00 that we received for the Connersville Phase 1 – 5 job that Windstream was invoiced for and the invoice was paid, but the job was cancelled.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Lafayette Part 3 & 4	\$104,246.63	\$82,870.00	P1160888601	\$21,376.63
Lafayette Phase 10 Part 1 & 2	\$267,771.29	\$253,163.10	P1160901201	\$14,608.19
Lafayette Phase 12	\$46,565.35	\$32,747.00	P1160909801	\$13,818.35
Lafayette Phase 4 Part 1 Rev	\$78,485.71	\$77,519.00	P1160964901	\$966.71
Lafayette Phase 8 Part 1	\$171,895.20	\$33,690.00	P1160969801	\$138,205.20
Lafayette Phase 3 Part 2	\$202,950.21	\$70,078.00	P1160979101	\$132,872.21
Lafayette Phase 2 Part 3	\$38,382.91	\$27,934.59	P1160985601	\$10,448.32
Lafayette Backbone Part 5	\$10,172.98	\$7,087.00	P1160990501	\$3,085.98
Lafayette Group 1	\$66,790.99	\$13,888.00	P1160998201	\$52,902.99
Lafayette Group 3	\$84,548.09	\$54,957.00	P1161009701	\$29,591.09
Lafayette Group 4	\$172,813.28	\$86,207.00	P1161020301	\$86,606.28
Lafayette Group 2	\$88,404.72	\$38,024.00	P1161073501	\$50,380.72
Lafayette Group 5	\$120,769.73	\$50,000.00	P1161082901	\$70,769.73
Lafayette Group 7	\$101,640.70	\$52,749.00	P1161096501	\$48,891.70
Lafayette Group 6	\$142,067.80	\$86,777.00	P1161104301	\$55,290.80
Lafayette Group 8	\$88,226.97	\$49,477.00	P1161130301	\$38,749.97
Lafayette Group 11	\$57,016.01	\$35,202.00	P1161140101	\$21,814.01
Lafayette Group 12	\$66,188.16	\$65,561.00	P1161174301	\$627.16
Lafayette Group 14	\$138,172.30	\$122,241.00	P1161262401	\$15,931.30
Lafayette Phase 2 Part 1 & 2	\$476,012.26	\$284,895.70	P1161272701	\$191,116.56
Lafayette Phase 7 Part 1 & 2	\$307,343.72	\$241,896.00	P1161300201	\$65,447.72
Lafayette Phase 11 Part 1 - 4	\$310,616.33	\$297,817.00	P1161311201	\$12,799.33
Lafayette Phase 6 Part 1	\$45,018.03	\$47,761.00		\$2,742.97

WIN3233

Lafayette Phase 5 Part 1 Rev 3	\$146,147.34	\$149,439.00		-\$3,291.66
Lafayette Phase 3 Part 1	\$108,419.10	\$117,183.00		-\$8,763.90
Lafayette Phase 1	\$83,970.94	\$99,283.00		-\$15,312.06
Connersville Phase 1-5 JOB CANCELLED - INVOICE PAID BY WINDSTREAM	-\$134,738.00			-\$134,738.00
			PAY THIS AMOUNT	\$911,452.36

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh



INVOICE

Invoice: P1160888601
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$21,376.63

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE PART 3 & 4, \$21,376.63. Total Amount Due: \$21,376.63

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1160888601

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: \$21,376.63

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136303838383630310000000021376639



INVOICE

Invoice: P1160901201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$14,608.19

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 10 PART 1 & 2	\$14,608.19
Amount Due:			\$14,608.19

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160901201

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$14,608.19**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930313230310000400014608192



INVOICE

Invoice: P1160909801
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$13,818.35

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 12	\$13,818.35
Amount Due:			\$13,818.35

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160909801

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$13,818.35**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930393830310000900013818355



INVOICE

Invoice: P1160964901
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$966.71

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 4 PART 1 REV	\$966.71
Amount Due:			\$966.71

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160964901

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$966.71**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936343930310000100000966711



INVOICE

Invoice: P1160969801
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107039
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$138,205.20

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 8 PART 1	\$138,205.20
Amount Due:			\$138,205.20

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160969801

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 000107039

Total Amount Due: **\$138,205.20**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936393830310000800138205207



INVOICE

Invoice: P1160979101
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$132,872.21

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 3 PART 2	\$132,872.21
Amount Due:			<u>\$132,872.21</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160979101

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$132,872.21**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303937393130310000100132872210



INVOICE

Invoice: P1160985601
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$10,448.32

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 3	\$10,448.32
Amount Due:			\$10,448.32

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160985601

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$10,448.32**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303938353630310000300010448328



INVOICE

Invoice: P1160990501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107706
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$3,085.98

Invoice for work or services performed at: Lafayette Backbone Part 5 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE BACKBONE PART 5	\$3,085.98
Amount Due:			\$3,085.98

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160990501

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 000107706
 Total Amount Due: **\$3,085.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939303530310000200003085988



INVOICE

Invoice: P1160998201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$52,902.99

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 1	\$52,902.99
Amount Due:			\$52,902.99

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160998201

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$52,902.99**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939383230310000000052902991



INVOICE

Invoice: P1161009701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$29,591.09

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 3	\$29,591.09
Amount Due:			\$29,591.09

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161009701

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$29,591.09

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313030393730310000000029591091



INVOICE

Invoice: P1161020301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$86,606.28

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 4	\$86,606.28
Amount Due:			\$86,606.28

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161020301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$86,606.28**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P. O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313032303330310000000086606283



INVOICE

Invoice: P1161073501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$50,380.72

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$50,380.72
Amount Due:			\$50,380.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:
 Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161073501
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$50,380.72**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313037333530310000700050380726



INVOICE

Invoice: P1161082901
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$70,769.73

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 5	\$70,769.73
Amount Due:			\$70,769.73

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161082901

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$70,769.73**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313038323930310000600070769735



INVOICE

Invoice: P1161096501
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$48,891.70

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution, \$48,891.70. Total Amount Due: \$48,891.70

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161096501

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: \$48,891.70

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136313039363530310000700048891705



INVOICE

Invoice: P1161104301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$55,290.80

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 6	\$55,290.80
Amount Due:			\$55,290.80

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161104301

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$55,290.80**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313130343330310000800055290806



INVOICE

Invoice: P1161130301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$38,749.97

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$38,749.97
Amount Due:			\$38,749.97

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161130301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$38,749.97**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313133303330310000400038749978



INVOICE

Invoice: P1161140101
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$21,814.01

Invoice for work or services performed at: Lafayette Group 11 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 11	\$21,814.01
Amount Due:			\$21,814.01

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161140101

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$21,814.01**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313134303130310000000021814016



INVOICE

Invoice: P1161174301
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$627.16

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE GROUP 12, \$627.16. Amount Due: \$627.16

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161174301

Corporation Code: 75115
Please Pay By: 12/22/2016
Customer ID: 00083509
Total Amount Due: \$627.16

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136313137343330310000500000627160



INVOICE

Invoice: P1161262401
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$15,931.30

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 14	\$15,931.30
Amount Due:			\$15,931.30

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161262401

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$15,931.30

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313236323430310000000015931302



INVOICE

Invoice: P1161272701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$191,116.56

Invoice for work or services performed at: Lafayette Phase 2 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 1 & 2	\$191,116.56
Amount Due:			<u>\$191,116.56</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161272701

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$191,116.56**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313237323730310000800191116569



INVOICE

Invoice: P1161300201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$65,447.72

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 7 PART 1 & 2	\$65,447.72
Amount Due:			\$65,447.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161300201

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$65,447.72**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313330303230310000600065447720



INVOICE

Invoice: P1161311201
 Invoice Date: 11/29/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/29/2016

Amount Due: \$12,799.33

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/22/2016	Customer contribution LAFAYETTE PHASE 11 PART 1-4	\$12,799.33
Amount Due:			\$12,799.33

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161311201

Corporation Code: 75115

Please Pay By: 12/29/2016

Customer ID: 00083509

Total Amount Due: **\$12,799.33**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313331313230310000900012799330



John Greenbank
Executive Vice President
812.456.1205

John.greenbank@metronetinc.com

March 27, 2018

VIA EMAIL at Scott.Freeburn@duke-energy.com

Mr. Scott Freeburn
Duke Energy
Joint Use & Tower Leasing Manager
3300 Exchange Place
Lake Mary, FL 32746

Re: True Up Invoices

Dear Scott:

MetroNet appreciates the advances Duke has made during the last few month in processing pole applications. We are appreciative of the reduction in the pending backlog and Duke's commitment to eliminate it. As you are aware, there are other issues that need resolved. An issue of extreme importance to MetroNet is the matter of some true up invoices.

Almost a year ago, MetroNet expressed its concern over invoices to true up estimated make ready charges paid in prior years. Support for the amounts was requested, but we have not received any additional information. In addition, MetroNet asked for an explanation as to why so many of the make ready estimates were so wrong. Some of the true up amounts vastly exceed the original estimated make ready charges paid by Metronet. MetroNet also asked for an explanation of the delay in invoicing the true up charges. The true up invoices are dated the end of 2016. The original Duke invoices that are being "trued up" date back as far as 2013.

MetroNet rightfully disputed the charges, but MetroNet understands that Duke continues to press Windstream to pay them. MetroNet asks Duke to take Windstream out of the middle. We ask that Duke withdraw the invoice issued to Windstream. There is no need to have Windstream in the middle of these discussions. It would be beneficial to remove Windstream as an intermediary during these discussions so that MetroNet and Duke can work together directly to resolve this issue.

We believe that it would be advantageous not only to MetroNet, but also to Duke if all communications between the parties with respect to MetroNet attachments were direct between the parties. Communicating indirectly through personnel at Windstream is inefficient for both parties and unnecessarily complicates and delays the parties' resolution of issues. MetroNet asks that Duke directly communicate with MetroNet on all MetroNet issues, including invoicing for make ready and other costs.

I look forward to hearing from you on this matter.

Sincerely,



John Greenbank
Executive Vice President

cc: Daniel King, Senior Counsel, Windstream Communications
Kevin Stelmach, EVP and General Manager

MetroNet
3701 Communications Way
Evansville, Indiana 47715

WIN3257

April 3, 2017

VIA EMAIL at Daniel.King@windstream.com

Attn: Dan King
Windstream KDL
3701 Communications Way
Evansville, IN 47715

Re: Letter dated March 16, 2017

Dear Dan:

This letter is to provide a written update regarding the invoices referenced in your letter of March 16 pertaining to MetroNet's Lafayette and Hanover attachments.

As you are aware, MetroNet contacted Duke directly to request supporting documentation for the charges. Representatives of Duke have stated that they would attempt to locate additional information. They anticipate this will take a couple of weeks. In the meantime, Duke has confirmed that nonpayment of these invoices will not slow down or stop attachments to Duke's poles.

We will keep you apprised of developments in this regard. Of course, if Windstream receives communication from Duke indicating a slow down or stoppage may occur as a result of the unpaid invoices, we ask that you please let us know as quickly as possible.

If you have any questions regarding this matter, please do not hesitate to contact me. We appreciate your time and consideration.

Sincerely,



Anita Larson
Senior Counsel

cc: John Campbell
Kevin Stelmach

WINDSTREAM COMMUNICATIONS, LLC
11101 Anderson Drive
Little Rock, Arkansas 72212



March 16, 2017

Metronet Inc.
Attn: Robert Thurman
8837 Bond Street
Overland Park, KS 66214

RE: Past due pass through billing on Lafayette and Hanover jobs

Mr. Thurman,

Currently Metronet Inc. is past due \$1,136,274.06 in connection with the invoices dated January 26, 2017 and March 14, 2017 (a correction invoice). These invoices represent the final charges for the Lafayette and Hanover jobs less a credit for the cancelled Connersville job. These invoices were provided to ap@qservicesco.com and Sandra Gill on January 27, 2017 (and March 14, 2017) and remain unpaid.

Please make payment no later than April 14, 2017. If payment is not made, Windstream's ability to process pole applications with Duke Energy will be jeopardized and will likely result in Windstream being unable to process further Metronet pole applications until the outstanding balance is paid in full.

Please note that we have requested that Duke Energy provide us with whatever written evidence it has that the work for these jobs was requested to be provided on an expedited basis. As soon as we receive any information from them, we will pass it along to Metronet.

Thank you in advance for your prompt attention to this matter.

Sincerely

A handwritten signature in black ink that reads "Daniel King". The signature is written in a cursive style.

Daniel King
Senior Counsel
Windstream Services, LLC

P.O. Box 25410, Little Rock AR 72212
(812) 759-7973

WIN3259

From: Mclaughlin, Michelle M [<mailto:Michelle.McLaughlin@windstream.com>]
Sent: Wednesday, November 22, 2017 10:10 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Good morning, Anita-

Lexington is in the Windstream Kentucky East territory. I also prepared a Windstream Kentucky West agreement in case you wanted all of Kentucky covered. Also attached is our application in excel format for easier use. Please contact me after your review. I look forward to working with you as well.

Michelle
Analyst II
319-790-6910

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, November 22, 2017 9:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Dan: Thanks for the quick response!

Michelle: Would you please email me Windstream's pole attachment agreement for Kentucky? I appreciate it. I look forward to working with you.

Thanks again!
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, November 22, 2017 9:24 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Anita:

Good to hear from you. The person that you want to speak with is Michelle Mclaughlin. I have copied her on this response. She negotiates and manages our pole agreements and can provide you with our template for Kentucky.

I assume that you are asking so that MetroNet can begin the process of negotiating a pole attachment agreement with us in connection with its expansion into Lexington. Congratulations on the announcement.

Hope you have a great Thanksgiving!

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, November 22, 2017 9:08 AM
To: King, Daniel <Daniel.King@windstream.com>
Subject: Pole Attachment

Dan: Do you know whom I would reach out to in order to get Windstream's pole attachment agreement for Kentucky?

Hope you have a great holiday!

Thanks!
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

This email message and any attachments are for the sole use of the intended recipient(s). Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message and any attachments.

Windstream Corporation Records Management Policy

This Records Management Policy replaces and supersedes all other records management or document retention policies that may currently be published on Stream, the Intranet, or in place for any Windstream Corporation subsidiary as of the Effective Date in this Policy.

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Effective Date: March 11, 2015

Records Management Policy

I. Overview

This Records Management Policy (the “Policy”) establishes Windstream’s general standards for record management and retention. It applies to all records, regardless of whether the records are electronic or in paper format. Because records are vital company assets and essential to Windstream’s business, and in some instances must be retained to meet legal and regulatory requirements, *it is mandatory that all employees review and strictly comply with this Policy.*

This Policy is available on Stream on the Legal page under “Content,” “Documents,” and on the Intranet under “On the Job,” “Records Management.”

Questions regarding this Policy may be sent to corp.records.management@windstream.com, an email address maintained by the Legal Department.

II. Objective and Correlation to Other Company Policies

Employees should prepare and maintain complete and accurate business records to meet day-to-day business requirements and comply with known legal obligations. Without proper record handling, Windstream can be exposed to serious legal risks. Also, without proper record disposal, Windstream incurs unnecessary costs for electronic and physical storage. This Policy is intended to ensure that records are retained long enough to meet our business and legal requirements and that records no longer needed are routinely and non-selectively disposed of in the normal course of business.

This Policy only addresses the retention and destruction of records. It does not replace or override other Windstream policies that address the *contents* and handling of records, such as Windstream’s Information Security Policy, Bring Your Own Device to Work (BYOD) Policy, Data Security Policy for Sensitive Personally Identifiable Information (PII), Working with Integrity Guidelines, People Practices, Social Media Policy, etc. Those separate policies govern what should and should not be contained in records and how employees should handle sensitive customer and employee information to protect against unauthorized disclosure. This Policy only governs the length of time records should be retained and provides information on the proper destruction of records.

III. Enforcement

A. Departmental Record Coordinators.

Each department should appoint a Departmental Records Coordinator responsible for monitoring department compliance with this Policy. Departmental Records Coordinators will conduct yearly reviews with the department to assess records being retained and determine if there are records

that can be destroyed. Departmental Records Coordinator should distribute a copy of this Policy each year to the department as part of the review. Departmental Records Coordinators will report to the Legal Department, *no later than January 31th of each year*, the results of the department records review. The report should include a brief summary of record disposition and a description of any new records categories to be added to the Records Management Schedule (Exhibit C). A form report is attached as Exhibit A.

Additional responsibilities of Departmental Records Coordinators include:

- (1) Answering questions from department employees about retention time and proper storage of records;
- (2) Maintaining an off-site storage log that includes the name of the off-site facility, the date the records were sent, the contents of the box and the destruction date;
- (3) Assisting with electronic records storage/archiving;
- (4) Acting as a liaison with the Legal Department; and
- (5) Coordinating record retention with managers of department employees who change positions or leave Windstream.

B. Employees' Responsibilities.

Every employee must periodically review his/her records to determine if there are records that should be disposed of pursuant to this Policy. Each employee must, at least once per year in conjunction with the department records review described above, review records and comply with the retention period in the Records Management Schedule (Exhibit C). Additionally, employees must:

- (1) Review this Policy upon commencing employment and yearly thereafter;
- (2) Consult this Policy, his/her Departmental Records Coordinator and/or the Legal Department with questions regarding record retention; and
- (3) Maintain records for the proper amount of time pursuant to the Records Management Schedule (Exhibit C) and routinely and non-selectively dispose of records that no longer must be retained.

It is unnecessary for an employee to report to the Departmental Records Coordinator each time records are disposed of routinely and non-selectively (i.e. at times other than during the department record review); however, employees may have to provide this information to Departmental Records Coordinators during the annual department record review.

IV. Definition of a Record and Retention

A. Definition of a Record.

A record is *any* information/data set down in reproducible form, whether electronically or on paper, regardless of its characteristics, that is made or received while conducting Windstream's business. In simple terms, records are all forms of communication/information relating to Windstream's

business that have been reduced to paper or electronic form, except Instant Messages. Records include information on computers, zip or other portable drives, mobile devices, and include, but are not limited to, e-mail, word processing documents, spreadsheets, .pdf and .tiff files, graphs, communications on disk, tapes or other media and voicemails converted to emails, texts or wavefiles. Records may include data compilations, drafts, notes, calendars and all similar Outlook related items. Instant Messages are not considered records under this Policy unless they are converted to a word document or email message.

The types of records to be retained are listed in the Records Management Schedule (Exhibit C). All other documents created may be routinely and non-selectively disposed of, as there is no need to retain. Additionally, once time periods in the Records Management Schedule expire, employees should dispose of records routinely and non-selectively, unless they are subject to a Litigation Hold (Section XIII).

B. Length of Time Records must be Retained.

Records must be kept for the periods specified in the Records Management Schedule (Exhibit C). The Schedule identifies the different categories of records and sets out how long each record should be retained. If a record does not fit into a category in the Schedule, contact the Departmental Records Coordinator or the Legal Department for advice. If a record falls under two or more categories, it should be kept for the longest retention period. Records to be retained permanently must be clearly marked. Electronic documents must have some designation at the beginning or in the subject line indicating that they must be retained permanently.

Once the time periods in the Records Management Schedule (Exhibit C) expire, employees should dispose of the records routinely and non-selectively.

C. Location of Retained Records.

Occasionally, employees may create and examine records on personally-owned equipment. These records constitute Windstream records and are Windstream property. Employees shall not retain copies of records on personal/home computers, personal back-up drives (ZIP, thumb, etc.), or personal Blackberry, iPhones, iPads or other mobile devices. All Windstream records must be properly retained on the Windstream system, and no copies, whether electronic or hard copy, may be retained by an employee on personally-owned equipment or in a non-Windstream physical location for more than thirty (30) days after the creation or receipt of the record. See the Bring Your Own Device to Work Policy for more information.

V. E-mail

Although e-mails are electronic, they are records and must be kept for the length of time in the Records Management Schedule (Exhibit C).

A. E-mail Guidelines.

Employees should follow these e-mail guidelines for *records management purposes*:

- (1) Subject lines should be meaningful and searchable. Do not include matter in an e-mail not relevant to the subject line; instead, prepare a separate e-mail.
- (2) Placing privileged and confidential information in an e-mail should be avoided. When privileged or confidential information must be sent via e-mail, the author should identify it as proprietary, privileged or confidential information, include a Windstream attorney as an e-mail recipient and place “Subject to Attorney-Client Privilege” - Do Not Forward” in subject line. It is important not to copy inappropriate individuals or third parties on privileged e-mails as that may waive privileges benefiting Windstream. For more information, see the “Attorney Client Work Privilege Memorandum” on the Legal Stream page.
- (3) If e-mails are used in lieu of signed paper documents, as approvals of or acknowledgements of Windstream’s transactions, additional safeguards must be used to ensure proper handling. Consult the Legal Department under such circumstances.
- (4) Because of the ability to forward e-mail, the author loses control after a message is sent, and countless unintended recipients could receive the e-mail. Every e-mail and every reply creates copies of a record on servers, local e-mail archives and hard drives. Thus, e-mail copies can exist long after Windstream, and the original author, have discarded the e-mail. Thus, each author should assess the:
 - a. accuracy and appropriateness of e-mail contents;
 - b. chosen recipients (do not send to unnecessary persons); and
 - c. likelihood of the e-mail being copied or forwarded without knowledge or consent.

Employees should consider if verbal communication is an equally effective way to communicate and should pursue verbal communication in appropriate circumstances.

B. E-mails are Windstream property.

All incoming and outgoing e-mail on Windstream’s system, or in personal archive folders/files on the Windstream system, is the property of Windstream. No employee should expect privacy when using company e-mail, and Windstream may access and disclose e-mail without the user’s knowledge. All users of Windstream’s e-mail system expressly consent to having e-mail (including attachments) and other electronic files reviewed and monitored.

When changing jobs, employees must consult with his or her manager and Departmental Records Coordinator to review e-mail to ensure that all messages subject to retention under this Policy are retained. All messages to be retained should be preserved in a personal archive folder or file on the Windstream system. All other messages should be discarded.

If an employee is terminated, it is the responsibility of the terminated employee's manager to promptly coordinate with the Departmental Records Coordinator and Windstream's IT department to review the employee's e-mail to insure compliance with this Policy.

C. E-mail Retention.

Emails that must be retained should be stored on the personal drives assigned to employees by Windstream or department drives, as applicable. Metadata and other electronic properties of e-mails, if applicable, are not retained due to Windstream system limitations.

Subject to the requirement of "Litigation Hold Memorandums", as described in Section XIII, **Windstream's e-mail system will operate to support this Policy by *automatically* managing e-mail as follows:**

- (1) E-mail in "Inbox," "Drafts," and other message folders, **BUT NOT personal archive folders or files**, will be deleted 100 days after they are created, sent, received or modified. If a message or file must be retained longer than 100 days, move it to a personal archive folder/file on the Windstream system or department drive before automatic deletion.
- (2) E-mail in "Sent Items" will be deleted 100 days after the date the e-mail was sent. To retain a "Sent" message or file longer than 100 days, move it from "Sent Items" to an appropriate personal archive folder or file on the Windstream system or department drive before automatic deletion.
- (3) E-mail in "Deleted Items" will be regularly and routinely discarded by the system.
- (4) Entries in "Calendar" will be automatically deleted two (2) years after they are created or accepted.
- (5) Entries in "Contacts," "Notes," "Tasks" and "Journal" will not be automatically deleted and must be manually deleted by employees.
- (6) E-mails having an activity date (i.e. date of creation, receipt, modification, etc.) earlier than the Effective Date of this Policy reflected on the first page, will be deemed to have an activity date of the Effective Date. This provides for a transition period for employees and Windstream's IT department.

Employees must take prompt and appropriate steps to move e-mail that must be retained pursuant to the Records Management Schedule (Exhibit C) to proper drives or folders to avoid automatic deletion. E-mail with no business significance and not otherwise subject to retention requirements should promptly be deleted. There is no requirement that any Windstream e-mail be retained unless it falls within the record types in the Records Management Schedule (Exhibit C).

E-mails subject to a Litigation Hold do not fall under this Section and cannot be destroyed. Employees notified of a Litigation Hold should follow Section XIII of this Policy.

D. E-mail Personal Archive Folders and Files.

Windstream's e-mail system does not automatically delete personal archive folders/files on the Windstream system. Thus, it is imperative that employees periodically review these folders/files and comply with the provisions of this Policy regarding retention of documents contained in the folders/files, as these records must be manually deleted by employees. The review should be no less than once per year. The Departmental Records Coordinator will include a discussion about personal archive folders in the annual department record review (Section III).

VI. Instant Messaging (IM)

Windstream does not automatically save or reduce IM to a record format to be retained. Thus, employees should refrain from creating records subject to this Policy over IM due to the informal nature of the communications. If a record is created via IM, the IM should be converted to an e-mail or other format and saved to the employee's personal drive assigned by Windstream or department drive for proper retention under Records Management Schedule (Exhibit C).

VII. Text Messages

Creating records related to Windstream's business via text messages should be done only when absolutely necessary. If a record is created via text message, Windstream employees are required to forward the text message to their work email address for proper retention pursuant to the Records Management Schedule. No records are to be retained as text messages by employees due to the risk of inadvertently losing the record.

VIII. Voice Mail

If the content of a voicemail would be a record subject to this Policy if it were in written form, it should be recorded, transcribed and treated as a record or maintained in electronic format, via a wave file, for the applicable period under the Records Management Schedule (Exhibit C).

IX. Internal Software Applications/Websites and Social Media Websites

Internal software programs (i.e., LeaseNet, etc.) and websites (i.e., SharePoint, Salesforce, etc.) may be used to archive executed documents, share drafts and communicate regarding business

decisions. All records retained in these internal programs and websites are subject to this Policy and must be retained pursuant to the timeframes in the Records Management Schedule (Exhibit C), including internal and external “chats.” Internal programs and websites should not be used for permanent storage and should be included in the annual department record review conducted by the Departmental Records Coordinators (Section III).

Windstream employees should avoid creating and sharing records on social media pages, as retention of these records is problematic. If records are inadvertently created on social media pages, the Legal Department should be notified immediately.

X. Internal Platforms

Internal platforms, wikis, or websites (i.e., Stream, Confluence, etc.) may be used to archive executed documents, share drafts and communicate regarding business decisions. All records retained in these internal platforms are subject to this Policy and must be retained pursuant to the timeframes in the Records Management Schedule (Exhibit C). Internal platforms are used for permanent storage and should be included in the annual department record review conducted by the Departmental Records Coordinators (Section III).

Internal Platforms may be used on personal devices (i.e., Stream Mobile App, etc.). All records retained in these internal platforms are subject to this Policy and must be retained pursuant to the timeframes in the Records Management Schedule (Exhibit C). Users of the Stream Mobile App or any platform that is used on a personal device should consult the BYOD Policy to ensure compliance with both this policy and the BYOD policy.

XI. Drafts

Generally, drafts of records (i.e. contracts, e-mails, word documents, etc.) should not be retained and only the final version of the record should be maintained pursuant to this Policy. Drafts have very limited, if any, business value to Windstream. If an employee has a business reason to retain drafts, he/she should coordinate with the Legal Department and submit the “Request for Deviation from Management Schedule” (Exhibit D).

XII. Record Disposal

When the record retention period in the Records Management Schedule (Exhibit C) expires, a record should be disposed of in the ordinary course of business and non-selectively. Paper documents should be placed in shred bins and employees should delete electronic records from their folders/files. The Departmental Records Coordinator must ensure this process is followed.

Records containing confidential information (for example, customer information) must be disposed of in a manner that, consistent with applicable law, ensures the information cannot be reconstructed into a useable format. Please consult the Departmental Records Coordinator regarding disposal of such records.

XIII. Offsite Records Storage

Employees should be selective in using offsite storage. Employees should first adopt an electronic archival processing, scanning documents and saving to specified server locations, and dispose of these records pursuant to the Records Management Schedule (Exhibit C). Questions on electronic archiving should be directed to the Departmental Records Coordinator. If records cannot be maintained electronically, employees should follow the Records Management Schedule (Exhibit C) and define for the offsite vendor the destruction date.

XIV. Government Investigations/Enforcement Proceedings/ Litigation (Litigation Hold Memorandums)

When a claim, lawsuit, proceeding or investigation of any type (an “action”) is initiated or it is reasonably foreseeable that it will be initiated, the disposal provisions of this Policy are suspended and employees will be required to retain all relevant records in the format in which the records were created. This includes situations where Windstream will institute a matter. If an employee becomes aware of an action from a source other than the Legal Department or from public records, the employee must notify the Legal Department immediately and preserve all relevant records until receiving further instructions.

When suspension of Policy compliance is necessary, a Litigation Hold Memorandum will be issued by the Legal Department to all employees who may be in possession of relevant records. A sample is attached as Exhibit B. The Litigation Hold Memorandum will contain instructions on the records to be retained and the proper retention methods. Disposal of relevant records is strictly forbidden after issuance of a Litigation Hold Memorandum or after learning of an action. Criminal and civil sanctions could be imposed on Windstream **and individual employees** if relevant records are destroyed.

The Legal Department will periodically issue a reminder to relevant employees to continue to maintain their records. Employees will also receive notice when the litigation hold is released and the records no longer must be maintained.

XV. Changes and Exceptions

Windstream reserves the right to change this Policy and any retention period at any time without prior notice. The Legal Department will communicate changes to employees and/or place an updated version of the Policy on the Intranet.

Should an employee seek to retain records for longer than provided in the Retention Schedule, the employee may complete a “Request for Deviation from Retention Schedule”, attached as Exhibit D. The form must be submitted to the Legal Department for approval and, if approved, the Legal Department will retain the form.

XVI. Mandatory Compliance and Confidentiality

Employees must comply with this Policy, and no employee may dispose of records except in accordance with this Policy. Appropriate disciplinary action will be taken against persons who violate this Policy. Such action can include termination of employment and, if warranted, legal action. This Policy is for internal use only and should not be provided to anyone outside Windstream without the prior written approval of the Legal Department.

Exhibit A -- Sample

Annual Report -- Departmental Records Coordinators

Date: _____
To: Windstream Legal Department (corp.records.management@windstream.com)
From: _____ **[Name of Department]**
Subject: Department Records Review

On _____ [date] [or during the month of _____ 20__], I conducted the annual department records review as required by Windstream's Records Management Policy. I confirm that our department employees have:

1. reviewed the Records Management Policy;
2. reviewed all of their records, both paper and electronic;
3. maintained records in accordance with the Records Management Policy;
4. disposed of records that no longer must be retained; and
5. disposed of information that does not constitute a record and has no significance to Windstream's business operations.

Our department employees have included in their records review all email personal archive folders, records or information on department drives, internal software programs and websites.

The following types of records were properly and securely disposed of:

The following records should be added to the Records Management Schedule for our department. Proposed retention periods are also provided:

Departmental Records Coordinator

Printed Name

Exhibit B -- Sample Litigation Hold Memorandum

This Memorandum may be updated as necessary or on a case-by-case basis, but this Exhibit may not be updated.

Litigation Hold Notice Attorney/Client Notice Regarding Lawsuit against Windstream

Date
 To:
 From: ATTORNEY
 Subject: Preservation of Documents

Windstream is involved in the following legal proceeding: [Case name, number, jurisdiction] concerning [BRIEF recitation of underlying facts] (the Litigation)

Windstream is taking steps to identify all paper documents, physical items and electronic documents and data that may be relevant to the Litigation. As part of the process, you must preserve and safeguard, and must not alter, delete destroy or discard, any paper documents, physical items or electronic documents and data you have related to the Litigation. Such information includes but is not limited to the following:

Paper Documents	Contracts	Social Media
Emails	Invoices	Work Media (i.e. Stream, Wintranet, Wiki's)
Spreadsheets	Backup Tapes	Metadata
Photographs	Computer Hard Drives	Recordings
ALL Electronic Data	Voicemails	Databases
Text Messages	Internal Instant Messages	External Instant Messages

If you are unsure about whether certain documents or data are relevant to the Litigation, YOU MUST PRESERVE THEM. Your duty to preserve all relevant information is ongoing and will not end until a Windstream Legal Representative notifies you of such.

You must take affirmative steps to preserve, and suspend any deletion, overwriting, modification or other destruction of, all relevant electronic documents and data under your control. You must preserve this information in its current form—as it is stored on Windstream’s systems or other devices without modification of format or alteration of content.

Do not use Windstream resources (email, IM, Stream or other) to engage in speculation or communications about this lawsuit. If, for any reason, you need to discuss or write something about this lawsuit, please contact me. If you communicate something about the lawsuit to Legal staff, please label any written communication: “Privileged and Confidential Attorney/Client

Communication”. Activities done at the request of a member of the Windstream Legal Department, such as searching for documents or developing written materials, should also be labeled.

The contents of this memorandum are protected by attorney client privilege and constitute attorney work product; the information is to remain confidential and not to be disclosed to anyone outside the company. Failure to take proper steps to preserve information will result in disciplinary action.

If you have questions, please call me at _____.

VERIFICATION

I, _____, affirm I have received a copy of this Notice and I understand that I have an affirmative responsibility to obey the directions it sets out.

Signature

Printed Name

Date

_____ I do have documents.

_____ I do not have any documents pertaining to this matter.

Schedule Updated: December 30, 2014

Exhibit C

Records Management Schedule

Retention periods are determined based on the following definitions. Examples are: 1) a retention period of “UL+1Y” means the record should be retained for its useful life plus one more year; 2) a retention period of “CY+4Y” means the year the record was created/received plus four more years; 3) a retention period of “3Y” means the record should be retained for three years from the date the record was created/received; and 4) a retention period of CT+5Y means the record should be retained for the entire contract term (regardless of length) plus five more years. All periods are in years unless otherwise indicated.

- UL** Useful life of the record
- CY** Year the record was created
- CT** Contract term
- Y** Years
- +** Plus
- PERM** Permanent

<u>FINANCE</u>	
Internal Controls Testing to support Sarbanes-Oxley requirements	7Y
<i>Accounting</i>	
Accounting procedures	UL+10Y
Annual External Filing (10K & 10Q)	7Y
Audit reports, external	7Y
Audit reports, internal	7Y
Capital budget work papers	1Y
Capital budgets (1 year)	CY+1Y
External Filing support documentation	7Y
Financial reports, monthly Closed Book Small Book Big Book Variance Analysis Packages Support Documentation	CY+1Y
Financial statements and certified statements	UL+7Y
Forecasts 1 year	CY+1Y
General ledger, monthly	1Y
Journal entries support documentation	CY+2Y
Property sold or abandoned records	CY+7Y

Tax	
Business License Filings	CY+2Y
Charitable Donation Documentation	CY+7Y
Depreciation schedules	UL+7Y
Employment tax filings	CY+7Y
Entity Acquisition Records	CY+7Y
Foreign Government Statutory Audit	CY+7Y
Form 940/941 tax filings	CY+6Y
Income Tax Provision W/P's	CY+3Y
Local annual reconciliations	CY+6Y
Local income tax filings	CY+6Y
Paid Property Tax Bills	CY+4Y
Proof of Mailings	CY+3Y
State annual reconciliations	CY+6Y
State income tax filings	CY+6Y
State unemployment tax filings	CY+6Y
Tax Audits	CY+5Y
Tax Planning Documentation	CY+7Y
Tax Project Files	UL
Tax Return- Federal Consolidated	PERM
Tax Return- Foreign Income/Transaction	CY+7Y
Tax Return- Partnership Federal/State	Life of Partnership + 7Y
Tax Return- Property Tax Renditions	CY+7Y
Tax Return- Sales and Use Filings	CY+7Y
Tax Return- Separate Co. Federal	CY+7Y
Tax Return- State Income	CY+7Y
Tax Return Supporting Documentation	Same as related return
Time report records	CY+6Y
Transfer Pricing Documentation	CY+7Y
Payroll	
Commission statements	CY+6Y
ESPP (enrollment and purchase)	CY+6Y
Form W-2 (all to tax)	7Y
Garnishment accounting	CY+6Y
Garnishment orders	CY+6Y
Payroll checks	CY+6Y
Payroll history	CY+6Y
Payroll records	CY+6Y
Payroll registers	CY+6Y
Unemployment insurance payments	CY+6Y
Workers comp insurance payments	CY+6Y
Accounts Payable	

Accounts payable invoices	CY+7Y
Accounts payable ledgers	CY+7Y
Check registers	CY+4Y
Check requests	CY+4Y
Credit and charge slips	CY+4Y
Credit card statements	CY+4Y
Expense reports	CY+7Y
Form 1099	CY+7Y
Form W-9	CY+7Y
P-card data	CY+7Y
Travel and Expense card data	CY+7Y
<i>Cash Assurance</i>	
Customer Invoices	CY+7Y
Cash receipts journals	CY+6Y
Collection notices	CY
Collection records - Retained electronically by credit vendor	UL
Collection records	UL
Customer account disputes	UL
Customer bureau disputes	UL
Direct pay account information	CY+6Y
Payment history CD's	CY+6Y
<i>Treasury</i>	
Bank account analysis	CY+7Y
Bank account correspondence	CY+3Y
Bank reconciliations	CY+4Y
Check stubs	CY+4Y
Checks through lock box, canceled	CY
Cost/Benefit Analysis	UL+7Y
Daily cash position	CY+7Y
FEC Electronic Filing	
Futures investments	UL+7Y
Investment Decision Analysis	UL+7Y
Investment details	UL+7Y
Check Registers	PERM
Trust Reports	PERM
Letters of credit, credit agreements, loan agreements, commitments and other financing documents	UL+10Y
Miscellaneous financing documents	UL+10Y
Mortgage payments	PERM
Mortgage records	PERM
Notes canceled	PERM
Notes outstanding	PERM
Notes paid	PERM

Options and futures	UL+7Y
Options contracts	UL+7Y
PAC Documents	
Pension board books	PERM
Pension fund manager contracts	UL+6Y
Pension fund manager reports	CY+6Y
Pension trustee contract	UL+7Y
Pension trustee reports/invoices	CY+7Y
Securities sales	CY+7Y
Stock investments	UL+7Y
Wire transfer records & ACH	CY+7Y
<u>HUMAN RESOURCES</u>	
<i>Benefits</i>	
Active Insurance	7Y
Active Insurance -Enrollment/Change forms	UL+7Y
Benefit Restoration Plan	UL+10Y
Cobra	
Special enrollment reports	7Y
Standard COBRA enrollment reports forms	7Y
COBRA Forms	UL+7Y
Compliance	7Y
Defined Contribution (DC)	7Y
DC-Annual valuation/acct bal rpt	PERM
DC-Death files due pmt	UL + 7Y
DC-Fund Exchanges	3Y
DC-Retiree files deferred pmt	UL + 7Y
DC-Service date/historical info	PERM
DC-Valuation	PERM
Education assistance files- Local HR	6Y
Employee relocation records (ERR)	6Y
ERR-Real Estate	5Y
ERR-Accounting	7Y
ERR-Prepurchase file	4Y
ERR-Employee Expense	3Y
ERR-Payroll	7Y
ERR-Admin	5Y
ERR-BQFA Files and Reports	7Y
ERR-Vital Records	7Y
Health &Welfare-Active & Retiree rate his.	PERM
Health &Welfare -Bargaining proposals & contracts	PERM
Health &Welfare -Life and Death Claims	UL+7Y
Health &Welfare -LPW Claims	UL+7Y

Health & Welfare -LTD Claims	PERM
HIPAA notices	PERM
Incentive plans	UL+5Y
Legal -- Appeal files	3Y
Legal -- Plan Documents – all types	PERM
Legal -- QDRO	UL+7Y
Legal -- QMSCO	UL+3Y
Legal -- SPD (Summary Plan Description)	PERM
Letter of Agreement (STD / LTD / FMLA)	7Y
Pension -- Actuarial reports	PERM
Pension -- Closed and death pension	UL+7Y
Pension -- Lump sum cash out non-retiree	UL+50Y
Pension -- Lump sum cash out retiree	20Y
Pension -- Participant/Retiree files	UL+50Y
Pension -- Service and payroll record card	UL+50Y
Pension -- Supporting data	UL+50Y
Retiree --Aliant Medicare Part B	3Y
Retiree -- Retiree insurance files (Aliant & WINDSTREAM)	UL+7Y
Service Awards	7Y
Total Compensation Reports	3Y
Vendor Contracts	UL+7Y
<i>Equal Employment Opportunity</i>	
Affirmative action plan	CY+1Y
EEO-1 Report	CY+5Y
EEOC Charge	Resolution + 2Y
Job Applications (non-employees)	CY+1Y
Payroll Records	UL+3Y
Personnel File	UL+6Y
Polygraph Results/ Reasoning	CY+3Y
VETS-100 reports	CY+2Y
<i>Salary Administration</i>	
Commission expense reports	UL+6Y
Compensation management guides	UL+5Y
Executive compensation reports	UL+5Y
Form W4	CY+4Y
Incentive plan trending reports	UL+5Y
Job code reports	UL+5Y
Job evaluations	UL+5Y
MICP reports	UL+5Y
Pay plan performance reports	UL+5Y
Pay rates	UL+3Y
Pay structures	UL+5Y
Payroll deductions	CY+4Y

Salary surveys	UL+5Y
Senior management review spreadsheets	UL+5Y
<i>Personnel Actions</i>	
Applications and resumes (employees hired)	CY+2Y
Job advertisements and postings	CY+2Y
Job code administration	CY+1Y
Local HR files (supervisor's files) *To be kept by manager of employee until end of employee's employment (UL), local HR then keeps for 2Y	UL+2Y
Location administration	CY+1Y
Personnel files	UL+10Y
Position administration	180 days
Pre-employment tests and test results	CY+2Y
Records of open door/executive complaint investigations	10Y
Reports/Audits	
-Personal data	CY only
-Job code	CY+1Y
-Position maintenance	180 days
-Rate changes	CY only
-HRMS/Peoplesoft sync	CY only
-Location maintenance	CY+1Y
-Deductions unable to use	CY only
- OFCCP Audit	7Y
- OFCCP Audit Decision Letters	PERM
<i>Labor Relations</i>	
Arbitration Cases, including notes, transcripts, exhibits, decisions, etc.	PERM
Grievances, including notes, decisions, etc.	PERM
Negotiation Records, including notes, collective bargaining agreements, etc.	PERM
NLRB Cases, including notes, transcripts, exhibits, decisions, etc.	PERM
Correspondence Records	PERM
Seniority Calculations, Lists, etc.	PERM
State Files, issues, etc.	PERM
Training Materials for classes prepared and taught by Labor Relations personnel	PERM
<u>LEGAL</u>	
<i>Corporate/Securities</i>	
Articles of incorporation or formation for parent and subsidiaries	PERM
Board of Directors books	PERM
Bonds, fidelity and surety	UL+6Y
Business acquisition (equity or asset) files	PERM
Business divestiture files	20Y
Business permits	UL

Bylaws and operating agreements for parent and subsidiaries	PERM
Capital asset acquisition/ divestiture files	UL+ 10Y
Partnership and management agreements and files	UL+10Y
SEC filings	PERM
Secretary of State Certificates	PERM
Stockholder minute books	PERM
<i>Shareholders Services</i>	
Canceled stock certificates	20Y
Capital stock certificates	PERM
Capital stock transfer and stockholder records	PERM
Dividend reports	PERM
Stockholder proxies	10Y
Voting records	PERM
<i>Intellectual Property</i>	
Licenses	UL+6Y
Patent applications	UL+6Y
Patents	UL+6Y
Trademark records	UL+6Y
<i>Labor Relations</i>	
Arbitration Cases, including notes, transcripts, exhibits, decisions, etc.	PERM
Grievances, including notes, decisions, etc.	PERM
Negotiation Records, including notes, collective bargaining agreements, etc.	PERM
NLRB Cases, including notes, transcripts, exhibits, decisions, etc.	PERM
Correspondence Records	PERM
Seniority Calculations, Lists, etc.	PERM
State Files, issues, etc.	PERM
Training Materials for classes prepared and taught by Labor Relations personnel	PERM
<i>Litigation Files</i>	
Bankruptcy Notices/Files	UL
Litigation Files	UL + 5Y
<u>MARKETING / SALES</u>	
Advertising	UL+1Y
Artwork	UL+1Y
Brochures	UL+1Y
Customer Agreements	CT+5Y
Consumer Pro-rated Early Termination Fee Agreement	CT+1Y
Customer Event invitation and attendee lists and locations	2Y
Market research/surveys	UL
Marketing plans	UL
Sales compensation records	1Y

Sales presentations	UL+5Y
Sales projections	1Y
Sales records	1Y
Sales reports	1Y
Service contract agreements	180 days
User guides	UL+1Y
<u>PROCUREMENT & FLEET</u>	
Access Service Requests (ASR)	UL
Accident Reports	CY + 5Y
Backorder records	1Y
Bills of Lading	1Y
Budget & Purchase Approval Authorization	CY + 6Y
Business Cases	UL
Catalogs	UL
Chassis, Upfitting and Delivery Invoices	CY + 6Y
Circuit Orders	UL
Current Vehicle Asset Listing	CY + 6Y
Customer Surveys	CY + 3Y
Fleet Lease Payment Invoices	CY + 6Y
Fleet Leases/Contracts	7Y
Fleet Monthly Invoices - Misc.	CY + 6Y
Freight records	7Y
Incident Reports	CY + 5Y
Inventory Reports	CY + 3Y
JDE Change Requests-SIC, Minority, Search Type	PERM
Letter of Agreement	PERM
Letter of Intent	PERM
Maintenance and Repair Records/Reports, including Invoices	CY + 5Y
Non-Disclosure Agreements	UL
Packing lists	3Y
Present Value Analysis	UL
Price lists	UL
Procedures Manual	UL + 3Y
Product warranties	UL+6Y
Productivity Reports	CY + 3Y
Purchase orders	7Y
Purchase requisitions	CY+6Y
Quality Audit Reports	CY + 5Y
Receiving Documents	CY + 7Y
Request for Information	7Y
Request for Proposal	7Y
Request for Proposal, Information, or Quote Activity Tracking Database	UL+7Y

Request for Proposal, Information, or Quote Scoring Matrices	UL+7Y
Request for Proposal/Request for Information/Request for Quote/response/reject notices	UL+7Y
Request for Quote/quotes	7Y
Safety Procedures	CY + 5Y
Service Level Agreement	UL + 5Y
Service Orders	UL
Shipping instructions	1Y
Shipping manifests/tickets	1Y
Software Licenses	PERM
Sourcing Reports	UL
Statements of Work	UL+7Y
Supplier Reportcard Reports	UL
Supplier Reportcard Surveys	UL
Supplier Requests to become WINDSTREAM vendor	UL
Vehicle Disposal Records	CY + 6Y
Vendor Agreement Addendums or Amendments	UL+7Y
Vendor and User License Tracking Records	PERM
Vendor change notification	PERM
Vendor contract/ agreements	PERM
Vendor insurance certificates	PERM
Vendor Invoices	7Y
Vendor literature	UL
Vendor metrics/reviews	PERM
Vendor Minority Certifications	PERM
<u>RETAIL STORES</u>	
Credit Card Receipts (Copies)	1Y
Daily reconciliation spreadsheets and reconciliations	1Y
Deposit Slip Copies	1Y (secure storage in store)
End of Day Closing Reports Copies	1Y (secure storage in store)
Daily balance worksheets	1Y (secure storage in store)
Copies of receipts including canceled transactions	1Y (secure storage in store)
Cash assignment log	1Y (secure storage in store)
Cash drawer verification log	1Y (secure storage in store)
Vault transfers	1Y (secure storage in store)

Log of combination change dates	1Y (secure storage in store)
Safe deposit log	1Y (secure storage in store)
Void logs	1Y (secure storage in store)
Mailing lists	UL
<u>CALL CENTERS/ CUSTOMER SERVICE</u>	
Customer complaints	3Y
Nebraska complaints	5Y
Customer credit files	UL
Customer lists	UL
Customer surveys	UL
Letters/correspondence	1Y
Operation bulletins	UL+5Y
Order acknowledgements	1Y
Promotion plans	UL
Rate schedules	UL
Service logs	PERM
Service order	3Y
Service requests	1Y
<u>SUBPOENA COMPLIANCE/CALL RECORDS</u>	
Subpoenas for Call Records or IP Information	7Y
Call Detail/Toll Records	2Y
<u>ENGINEERING</u>	
Cable plant records	UL+3Y
Circuit schematics	PERM
Construction drawings	PERM
Construction in progress records	UL+7Y
Design BOM	PERM
ECR/ECO/ECN	PERM
Equipment manuals	PERM
Equipment site leases/easements	UL+3Y
Equipment/facility documents	PERM
Error logs	PERM
Network maps/drawings	PERM
Owned property title	UL+3Y
Permits	PERM
Plant/equipment contracts	UL+3Y
Pole attachment agreements	UL+3Y

Project/construction contracts	UL+3Y
Right of way drawing/permits	UL+3Y
Right of way easements	UL+3Y
Sold property title	UL+3Y
Technical publications	PERM
Test results	PERM
Test scripts	UL
Tower drawing/BOM	PERM
Vendor service contracts	UL+3Y
Wireline maps	PERM
<i>Network Real Estate</i>	
Annual public posting verification	CY+1
Annual reports	CY+1
Antenna structure registration	UL+3
Borrower certification status	CY
Carey contour coverage maps	UL+3
Cell site environmentals	UL+3
Client attachment sublease	UL+3
Client service extension agreements	UL
Collateral property mortgages	UL+5
Conduit Lease Agreements	UL+3
Construction work plans	UL
Dark Fiber Agreements	UL+3
FAA determination	UL+3
IRU Fiber Agreements	UL+3
Loan agreements and notes	UL+5
Master lease agreements	UL+3
Radio system licenses	
Cellular/PCS	UL+3
Microwave	UL+3
Multiport distribution	UL+3
Paging	UL+3
Telephone maintenance	UL+3
Railroad Rights of Ways and Permits	UL+3
Right of Way Grants from Government	U UL+3
Owned property titles	UL+3
Partial releases of lien	UL+5
Site collocation agreements	UL+3
Site diligence	
Airspace study	UL
FAA filings	UL
FCC filings	UL
RF emissions studies	UL

Survey	UL
Site leases and easements	UL+3
Sold property titles	UL+3
WINDSTREAM service extension agreements	UL
WINDSTREAM site sublease	UL+3
<i>Network Operations Center</i>	
Reason for Outage/Root Cause Analysis Documentation	2Y
<u>GOVERNMENT CONTRACTS</u>	
E-Rate contracts	CT+10Y
Federal procurement contracts and related documents	CT+5Y
All other Government contracts	CT+5Y
<u>REGULATORY/TARIFFS</u>	
FCC compliance audits	UL+6Y
Federal election commission filings	CY+3Y
Government document files	UL
Legislation pending	UL
PAC filings	CY+3Y
Toll Records	2Y
<u>CORPORATE COMMUNICATIONS</u>	
Fact Sheets	UL
Internal Intranet News Articles	CY+2Y
Media packets	UL
News releases	PERM
Internal Newsletters (WINBlasts, etc.)	CY+2Y
Publicity photographs	UL
<u>INFORMATION TECHNOLOGY SERVICES</u>	
Business continuity plans	UL+1Y
Data backups	90 days
Disaster recovery test plans and results	UL+2Y
Electronic logs	1Y
Internal SLAs and SOWs	UL+1Y
Policy Documentation (Policy/Standard/Procedure/Guidelines)	UL+2Y
Policy Waivers	UL+1Y
Problem resolution documentation (Remedy tickets)	UL+1Y
Production documentation	UL+1Y
Risk and control assessment testing	UL+2Y
Security Event Reports/Reviews	UL+1Y
Security Incident Data	UL
Security Incident Reports	UL+1Y

Security Metrics	UL
911 Database Records	2Y
<i>Transition Services</i>	
Acquisition/merger/divestiture transition conversion documentation	UL+3Y
Acquisition/merger/divestiture transition service agreements	UL+3Y
Application documentation	UL
Business case documents	UL+2Y
Business process documentation	UL
Change control documents	UL+1Y
Communication plans	UL+1Y
Email Directives and Approvals	UL+1Y
Functional/technical design documents	UL+1Y
IT security forms	PERM
Key project communications	UL+1Y
LOEs and updated LOEs	UL+1Y
Meeting notes (including project committees and sub-committees)	UL
Project charters	UL+1Y
Project meeting notes/databases	UL+1Y
Project plans	UL+1Y
Project status reports	UL+1Y
Requirements (functional and technical)	UL+1Y
SOWs from vendors	UL+7Y
Test plans	UL+1Y
Test results	UL+1Y
Test scripts	UL+1Y
Training materials	UL
User acceptance test sign-off	UL+1Y
Vendor contracts	UL+7Y
<u>GENERAL ADMINISTRATION</u>	
<i>Facilities</i>	
Building permits	UL
Deeds	UL+6Y
Easements	PERM
Lease abstract	UL
Lease agreements	UL+3Y
Maintenance records	UL
Motor vehicle maintenance	UL
Motor vehicle records	UL
Office improvements	UL
Office layouts	UL
Property summaries	UL+4Y

Property title	UL+6Y
Real estate records	UL
Telecom standard compliance audits	UL+6Y
Title documentation	UL+6Y
Zoning permits	UL
<i>Records Management</i>	
Records Management Policy	PERM
Requests for Deviation from Records Management Schedule	3Y
<i>Risk Management and Safety</i>	
Accident reports	CY+5Y
Auto Claim Files	CY+5Y
Damage reports	CY+5Y
DOT Drive Qualification Files	3Y after termination
DOT Drug and Alcohol Test Results	CY+5Y
DOT Vehicle Inspection Reports	90 days
DOT Vehicle Maintenance Files	1Y
Emergency action plans	UL
Fire prevention program	UL
General Liability Claims	CY+5Y
Injury reports	CY+5Y
Insurance financials	CY+6Y
Insurance policies	PERM
Log, accident (OSHA form 200 & 300)	CY+4Y
Log, injury (OSHA form 200 & 300)	CY+4Y
Loss Claims	PERM
Loss runs	CY+1Y
Medical claims	CY+30Y
OSHA Medical Records	30Y after employment ends
Safety records	CY+5Y
Supplementary records (OSHA form 101)	CY+5Y
Work Comp Claims Files	UL+5Y
<i>Environmental</i>	
EPA Audits, Evaluations, and Investigations	UL+10Y
EPA Filings	8Y
RCRA Land Disposal Permit	UL+30Y
NPDES Minor Permit	UL+10Y
Permits (Other)	UL+10Y
NEPA/SHOPO records	UL+10Y
Spills	UL+30Y
SPCC Facility Plans	UL+5Y
SUPERFUND	PERM

<i>Security</i>	
Badge lists	UL
Employee Clearance	UL
Internal Fraud Investigation	UL+2Y
Visitor registration	1Y
<i>Miscellaneous</i>	
Correspondence/ Letters	1Y
Organizational charts	UL+3Y
Policies	UL+7Y
Procedures manual	UL+7Y

Exhibit D

Request for Deviation from Records Management Schedule

To the Windstream Legal Department

- A. Date of Request: _____
- B. Employee Name: _____
- C. Windstream Department: _____
- D. Record(s) Affected:
- E. Length of proposed deviation:
- F. Please explain the purpose of the deviation:

Approved by: _____

Date approved: _____



INVOICE

Invoice: P0492862901
 Invoice Date: 6/27/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/27/2014

Amount Due: \$21,441.00

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

Hanover Part 1

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/26/2014	Customer contribution CHANGE OUT 2 POLES	\$21,441.00
Amount Due:			\$21,441.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: **P0492862901**

Corporation Code: 75115
 Please Pay By: 7/27/2014
 Customer Number: 00070740
 Total Amount Due: **\$21,441.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3292

1616303439323836323930310000400021441007



INVOICE

Invoice: P0572444501
 Invoice Date: 8/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/31/2014

Amount Due: \$18,804.00

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/31/2014	Customer contribution INST 1 POLE, PEDESTAL AND SECONDARY	\$18,804.00
Amount Due:			\$18,804.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0572444501

Corporation Code:

75115

Please Pay By:

8/31/2014

Customer Number:

00070740

Total Amount Due:

\$18,804.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3293

1616303537323434343530310000600018804000



INVOICE

Invoice: P0578173601
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$14,634.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 1 POLES, OH & UG SECONDARY	\$14,634.00
Amount Due:			\$14,634.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0578173601

Corporation Code:

75115

Please Pay By:

9/6/2014

Customer Number:

00070740

Total Amount Due:

\$14,634.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3294

1616303537383137333630310000000014634002



INVOICE

Invoice: P0599304801
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$42,121.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 7 POLES	\$42,121.00
Amount Due:			\$42,121.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0599304801

Corporation Code:

75115

Please Pay By:

9/6/2014

Customer Number:

00070740

Total Amount Due:

\$42,121.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3295

1616303539393330343830310000400042121002



INVOICE

Invoice: P0385166401
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$2,553.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
LAFAYETTE IN

Lafayette Part 344

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$2,553.00. Amount Due: \$2,553.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0385166401

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00058611

Total Amount Due:

\$2,553.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



1616303338353136363430310000500002553007

WIN3296



INVOICE

Invoice: P0443021901
 Invoice Date: 9/28/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/28/2013

Amount Due: **\$71,821.00**

Invoice for work or services performed at: Lafayette Phase 7 Part 1 LAFAYETTE IN

Lafayette Part 344

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/27/2013	Customer contribution INST 18 POLES,9 SPANS SEC,2 XFMR	\$71,821.00

Amount Due: **\$71,821.00**

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0443021901

Corporation Code:

75115

Please Pay By:

10/28/2013

Customer Number:

00070740

Total Amount Due:

\$71,821.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3297

1616303434333032313930310000000071821005



INVOICE

Invoice: P0443021906
 Invoice Date: 10/15/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/14/2013

Amount Due: \$9,146.00

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE
 IN

Lafayette Part 3+4

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/14/2013	Customer contribution	\$9,146.00
Amount Due:			<u>\$9,146.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0443021906

Corporation Code: 75115
 Please Pay By: 11/14/2013
 Customer Number: 00070740
 Total Amount Due: **\$9,146.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3298

1616303434333032313930360000200009146008



INVOICE

Invoice: P0358360201
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00068484
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$156,548.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 142

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$156,548.00. Total Amount Due: \$156,548.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0358360201

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00068484

Total Amount Due:

\$156,548.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



1616303335383336303230310000700156548006

WIN3299



INVOICE

Invoice: P0390913001
Invoice Date: 3/13/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00059721
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/12/2013

Amount Due: \$102,113.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 1 & 2

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/12/2013, Customer contribution, \$102,113.00. Amount Due: \$102,113.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0390913001

Corporation Code:

75115

Please Pay By:

4/12/2013

Customer Number:

00059721

Total Amount Due:

\$102,113.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



WIN3300

1616303339303931333030310000100102113004



INVOICE

Invoice: P0375201001
 Invoice Date: 4/10/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Customer No: 00070112
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/10/2013

Amount Due: **\$32,747.00**

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12
 WEST LAFAYETTE IN

Lafayette Phase 12

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/9/2013	Customer contribution	\$32,747.00
Amount Due:			<u>\$32,747.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0375201001

Corporation Code: 75115
 Please Pay By: 5/10/2013
 Customer Number: 00070112
 Total Amount Due: **\$32,747.00**

Fed Tax ID # 35-0594457

KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Amount Enclosed



1616303337353230313030310000600032747000

WIN3301



INVOICE

Invoice: P0390914001
 Invoice Date: 7/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/1/2013

Amount Due: **\$78,169.00**

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

*Lafayette Phase 4
 Part 1 Rev*

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/1/2013	Customer contribution INSTALL 2-35'; 3-40'; 3-45'; 3-50' POLES	\$78,169.00
Amount Due:			<u>\$78,169.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0390914001

Corporation Code:

75115

Please Pay By:

8/1/2013

Customer Number:

00070740

Total Amount Due:

\$78,169.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0406906005
Invoice Date: 6/14/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 7/14/2014

Amount Due: \$34,323.00

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 06/13/2014, Customer contribution CHANGE OUT 3 POLES, RAISE MISC EQUIP, \$34,323.00. Amount Due: \$34,323.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0406906005

Corporation Code:

75115

Please Pay By:

7/14/2014

Customer Number:

00070740

Total Amount Due:

\$34,323.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN3303

1616303430363930363030350000500034323003



INVOICE

Invoice: P0456348801
 Invoice Date: 7/15/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/14/2014

Amount Due: \$70,711.00

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/14/2014	Customer contribution INST 6 POLES, 3 XFRMS & 5 SPAN SECONDARY	\$70,711.00
Amount Due:			\$70,711.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0456348801

Corporation Code:

75115

Please Pay By:

8/14/2014

Customer Number:

00070740

Total Amount Due:

\$70,711.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3304

1616303435363334383830310000200070711001



INVOICE

Invoice: P0461769501
Invoice Date: 3/21/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/20/2014

Amount Due: \$29,239.00

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 03/20/2014, Customer contribution INST 3 POLES, 3 SP SEC, 2 TRANSF, \$29,239.00

Amount Due: \$29,239.00

pd 5/28/14

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0461769501

Corporation Code:

75115

Please Pay By:

4/20/2014

Customer Number:

00070740

Total Amount Due:

\$29,239.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN3305

1616303436313736393530310000500029239002



INVOICE

Invoice: P0465572501
 Invoice Date: 1/13/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/12/2014

Amount Due: \$8,386.00

Invoice for work or services performed at:

Lafayette Backbone Part 5

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	1/10/2014	Customer contribution INST 2 POLES, 2 XFRMS, 2 SPANS SECONDARY	\$8,386.00
Amount Due:			<u>\$8,386.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0465572501

Corporation Code: 75115
 Please Pay By: 2/12/2014
 Customer Number: 00070740
 Total Amount Due: **\$8,386.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3306

1616303436353537323530310000700008386005



INVOICE

Invoice: P0538967901
Invoice Date: 7/16/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 8/15/2014

Amount Due: \$13,888.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

Lafayette Group 1

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 07/15/2014, Customer contribution INST 3 SPANS SECONDARY, \$13,888.00. Total Amount Due: \$13,888.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0538967901

Corporation Code:

75115

Please Pay By:

8/15/2014

Customer Number:

00070740

Total Amount Due:

\$13,888.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN3307

1616303533383936373930310000800013888000



INVOICE

Invoice: P0542790501
 Invoice Date: 7/15/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS 1925 ENTERPRISE PKWY THOMAS HUDOCK JR TWINSBURG OH 44087	Customer No: 00070740 PO / Contract No: Payment Terms: Net 30 Due Date: 8/14/2014
Amount Due: \$56,224.00	

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/14/2014	Customer contribution INST 7 POLES, 3 XFRM AND 4 SPANS SECONDARY	\$56,224.00
Amount Due:			<u>\$56,224.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number: P0542790501

Corporation Code: 75115
Please Pay By: 8/14/2014
Customer Number: 00070740
Total Amount Due: **\$56,224.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN3308

1616303534323739303530310000300056224009



INVOICE

Invoice: P0550195601
 Invoice Date: 8/6/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/5/2014

Amount Due: \$86,478.00

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/05/2014	Customer contribution INST 7 POLES AND 13 SPANS SECONDARY	\$86,478.00
Amount Due:			\$86,478.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0550195601

Corporation Code: 75115

Please Pay By: 9/5/2014

Customer Number: 00070740

Total Amount Due: **\$86,478.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0558002401
 Invoice Date: 7/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/31/2014

Amount Due: \$39,530.00

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/30/2014	Customer contribution CHANGE OUT POLES; SECONDARY; TRANSFORMERS	\$39,530.00
Amount Due:			\$39,530.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0558002401

Corporation Code:

75115

Please Pay By:

7/31/2014

Customer Number:

00070740

Total Amount Due:

\$39,530.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3310

1616303535383030323430310000300039530007



INVOICE

Invoice: P0586750401
Invoice Date: 8/21/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 9/20/2014

Amount Due: \$50,000.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

Lafayette Group 5

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 08/20/2014, Customer contribution INST 4 POLES, 8 SPANS SEC, UG SEC, \$50,000.00. Total Amount Due: \$50,000.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number: P0586750401

Corporation Code: 75115
Please Pay By: 9/20/2014
Customer Number: 00083509
Total Amount Due: \$50,000.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



WIN3311

1616303538363735303430310000500050000001



INVOICE

Invoice: P0597309501
 Invoice Date: 9/30/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/30/2014
 Amount Due: **\$53,397.00**

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 7

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	09/29/2014	Customer contribution INST 9 POLES, 1 XFRM, 3 SPANS SECONDARY	\$53,397.00
Amount Due:			<u><u>\$53,397.00</u></u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:
 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0597309501
 Corporation Code: 75115
 Please Pay By: 10/30/2014
 Customer Number: 00083509
 Total Amount Due: **\$53,397.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN3312

1616303539373330393530310000900053397000



INVOICE

Invoice: P0597302501
 Invoice Date: 10/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/16/2014

Amount Due: \$88,074.00

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	10/16/2014	Customer contribution INST 10 POLES, 7 SEC, 2 XFRM, 2 UG PAD	\$88,074.00
Amount Due:			\$88,074.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0597302501

Corporation Code:

75115

Please Pay By:

11/16/2014

Customer Number:

00083509

Total Amount Due:

\$88,074.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN3313

1616303539373330323530310000700088074009



INVOICE

Invoice: P0601563901
 Invoice Date: 9/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS P.O. BOX 25410 OSP ADMINISTRATION AND SUPPORT LITTLE ROCK AR 72221	Customer No: 00083509 PO / Contract No: Payment Terms: Net 30 Due Date: 10/17/2014
Amount Due: \$52,071.00	

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	09/16/2014	Customer contribution INST 4 POLES, 3 XFRM, UG SEC	\$52,071.00
Amount Due:			<u>\$52,071.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to: Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions: PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0601563901
 Corporation Code: 75115
 Please Pay By: 10/17/2014
 Customer Number: 00083509
 Total Amount Due: **\$52,071.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN3314

1616303630313536333930310000400052071003



INVOICE

Invoice: P0626921801
 Invoice Date: 1/14/2015
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/13/2015

Amount Due: \$65,561.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 12

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	01/13/2015	Customer contribution INSTALL 3 POLES; 12 SPANS SECONDARY	\$65,561.00
Amount Due:			\$65,561.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P0626921801

Corporation Code: 75115
 Please Pay By: 2/13/2015
 Customer Number: 00083509
 Total Amount Due: **\$65,561.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN3316

1616303632363932313830310000000065561000



INVOICE

Invoice: P0626926101
 Invoice Date: 1/14/2015
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/13/2015

Amount Due: \$122,241.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 14

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	01/13/2015	Customer contribution INSTALL 11 POLES; 21 SPANS SECPNDARY	\$122,241.00
Amount Due:			\$122,241.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P0626926101

Corporation Code: 75115
 Please Pay By: 2/13/2015
 Customer Number: 00083509
 Total Amount Due: **\$122,241.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616303632363932363130310000900122241009



INVOICE

Invoice: P0448325001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$286,692.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Laf P
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST 28 POLES, SECONDARY, XFRM	\$286,692.00
Amount Due:			<u>\$286,692.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0448325001

Corporation Code:

75115

Please Pay By:

12/2/2013

Customer Number:

00070740

Total Amount Due:

\$286,692.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3318

1616303434383332353030310000200286692001



INVOICE

Invoice: P0400095101
 Invoice Date: 8/30/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/29/2013

Amount Due: \$3,525.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/29/2013	Customer contribution INSTALL 1-45' POLE; 2 TRANSFORMERS	\$3,525.00

Amount Due: \$3,525.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0400095101

Corporation Code:

75115

Please Pay By:

9/29/2013

Customer Number:

00070740

Total Amount Due:

\$3,525.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0439102201
 Invoice Date: 3/12/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/11/2014

Amount Due: \$113,125.00

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	03/11/2014	Customer contribution INST 12 POLES, 8 SP SEC, 3 XFRM	\$113,125.00
Amount Due:			\$113,125.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0439102201

Corporation Code:

75115

Please Pay By:

4/11/2014

Customer Number:

00070740

Total Amount Due:

\$113,125.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3321

1616303433393130323230310000900113125004



INVOICE

Invoice: P0361184601
Invoice Date: 3/21/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/20/2013

Amount Due: \$54,112.00

Invoice for work or services performed at: Lafayette Ph 11 Part 1 WEST
LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/20/2013, Customer contribution, \$54,112.00. Description: INST 10 POLES, 4 SPANS SECONDARY. Amount Due: \$54,112.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:
Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:
PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number: P0361184601
Corporation Code: 75115
Please Pay By: 4/20/2013
Customer Number: 00058611
Total Amount Due: \$54,112.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



WIN3322

1616303336313138343630310000000054112009



INVOICE

Invoice: P0394833201
 Invoice Date: 3/27/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Customer No: 00058611
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/26/2013
 Amount Due: **\$88,545.00**

Invoice for work or services performed at: Lafayette Ph 11 Part 2 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	3/26/2013	Customer contribution INST 30 POLES, 6 TRANSF, SPANS OF SEC	\$88,545.00
Amount Due:			<u>\$88,545.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0394833201

Corporation Code:

75115

Please Pay By:

4/26/2013

Customer Number:

00058611

Total Amount Due:

\$88,545.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Amount Enclosed



WIN3323

1616303339343833333230310000200088545001



INVOICE

Invoice: P0398161201
 Invoice Date: 5/9/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 6/8/2013

Amount Due: \$152,945.00

Invoice for work or services performed at: Lafayette Phase 11 Part 3 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	5/8/2013	Customer contribution INST 49 POLES, 3 XFMR AND SECONDARY	\$152,945.00
Amount Due:			<u>\$152,945.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0398161201

Corporation Code:

75115

Please Pay By:

6/8/2013

Customer Number:

00070740

Total Amount Due:

\$152,945.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3324

1616303339383136313230310000100152945000



INVOICE

Invoice: P0398162501
 Invoice Date: 4/27/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/27/2013

Amount Due: \$5,983.00

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/26/2013	Customer contribution	\$5,983.00
Amount Due:			<u>\$5,983.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0398162501

Corporation Code:

75115

Please Pay By:

5/27/2013

Customer Number:

00070740

Total Amount Due:

\$5,983.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3325

1616303339383136323530310000500005983002



INVOICE

Invoice: P0377471201
 Invoice Date: 7/4/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/3/2013

Amount Due: \$48,318.00

Invoice for work or services performed at: LAFAYETTE PHAS 6 PART 1- REV
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/3/2013	Customer contribution INSTALL 1-55' POLE; 1 TRANS; 10 SPANS SEC	\$48,318.00
Amount Due:			<u>\$48,318.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0377471201

Corporation Code:

75115

Please Pay By:

8/3/2013

Customer Number:

00070740

Total Amount Due:

\$48,318.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3326

1616303337373437313230310000&0004&31&002



INVOICE

Invoice: P0399668701
 Invoice Date: 9/17/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/17/2013
 Amount Due: **\$117,183.00**

Invoice for work or services performed at: Lafayette Phase 3 Part 1 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/16/2013	Customer contribution INST 10 POLES, 3 XFMR, 7 SPANS SEC	\$117,183.00
Amount Due:			<u>\$117,183.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Fed Tax ID # 35-0594457

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0399668701

Corporation Code:

75115

Please Pay By:

10/17/2013

Customer Number:

00070740

Total Amount Due:

\$117,183.00

Amount Enclosed

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087



WIN3328

1616303339393636383730310000100117183009



INVOICE

Invoice: P0410544001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$99,932.00

Invoice for work or services performed at: LAFAYETTE IN

Lafayette Phase 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST POLES, XFMR, SECONDARY	\$99,932.00
Amount Due:			<u>\$99,932.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0410544001
 Corporation Code: 75115
 Please Pay By: 12/2/2013
 Customer Number: 00070740
 Total Amount Due: **\$99,932.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN3329

1616303431303534343030310000600099932007

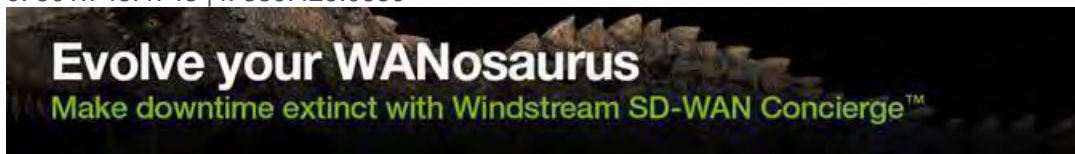
From: Windstream Jointuse
Sent: Tuesday, July 17, 2018 5:24 PM
To: Lauren Sandefur
Subject: FW: LX-FR06-05W Pole Application
Attachments: LX-FR06-05W - Pole App Map.pdf; LX-FR06-05W - Windstream Inventory Report.pdf; LX-FR06-05W - METRONET POLE INVENTORY REPORT..pdf; Map Key.pdf

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5576 and submitted to the Windstream Engineer, Ashley Sanders as of 7/17/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, July 16, 2018 3:21 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR06-05W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR06-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



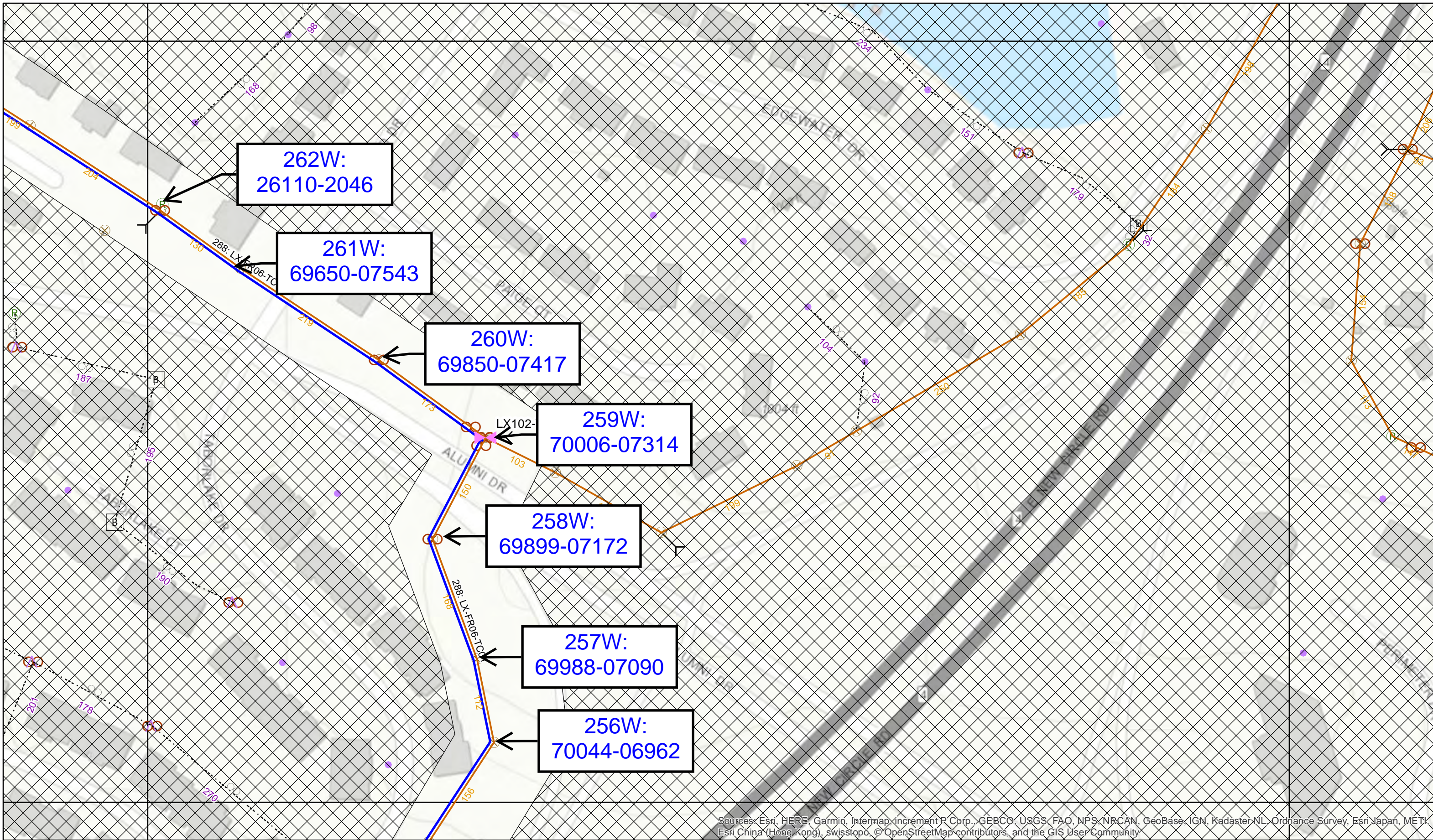
LX-FR06-05W Pole Inventory Report		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole Owner	Make Ready: 1=None 2=Comms 3=Elec 4=Comms&Elec 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance to Ground	Mid Span Clearance Comm to Power	3rd Party Comm Clearance Issue At Pole Y/N	3rd Party Comm Clearance Issue at Midspan Y/N	Environment Code: A: DOT Truck Traffic Roads B: Residential/Over Driveways C: Pedestrian traffic only D: Pedestrian Only 9.5'
POLE COUNT		250w	69734-06132	45/3	WS	3=Elec				3235 AQUEDUCT DR	37.99355	-84.46855	KU	Primary	37' 4"				N	N	D: Pedestrian Only 9.5'
KU	0	250w	69734-06132		WS						37.99355	-84.46855	KU	Primary	37' 0"				N	N	
Windstream	13	250w	69734-06132		WS						37.99355	-84.46855	KU	Primary	34' 0"				N	N	
Blue Grass Energy	0	250w	69734-06132		WS						37.99355	-84.46855	KU	OH Guy	32' 0"				N	N	
Total Pole Count	13	250w	69734-06132		WS						37.99355	-84.46855	KU	OH Guy	31' 5"				N	N	
Total Needing Make Ready	8	250w	69734-06132		WS						37.99355	-84.46855	KU	OH Guy	31' 1"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	KU	Neutral	29' 8"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	KU	Secondary	29' 0"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	KU	Secondary	28' 5"				N	N	
		250w	69734-06132		WS			Raise Secondary Drip Loop			37.99355	-84.46855	KU	Secondary Drip Loop	27' 9"	28' 5"			N	N	
		250w	69734-06132		WS						37.99355	-84.46855	KU	OH Guy	27' 7"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	Metronet	Communication	25' 0"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	Charter	Communication	24' 0"		49		N	N	
		250w	69734-06132		WS						37.99355	-84.46855	Windstream	Communication	23' 0"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	Windstream	Communication	22' 7"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	Windstream	Communication	21' 4"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	Windstream	Communication	20' 3"				N	N	
		250w	69734-06132		WS						37.99355	-84.46855	Windstream	Communication	19' 3"	17' 3"			N	N	
		251w	69716-06168	45/3	WS	3=Elec				3235 AQUEDUCT DR	37.99359	-84.46855	KU	Primary	38' 6"				N	N	D: Pedestrian Only 9.5'
		251w	69716-06168		WS						37.99359	-84.46855	KU	OH Guy	37' 1"				N	N	
		251w	69716-06168		WS						37.99359	-84.46855	KU	OH Guy	36' 9"				N	N	
		251w	69716-06168		WS						37.99359	-84.46855	KU	OH Guy	36' 4"				N	N	
		251w	69716-06168		WS						37.99359	-84.46855	KU	Neutral	31' 0"				N	N	
		251w	69716-06168		WS						37.99359	-84.46855	KU	OH Guy	30' 5"				N	N	
		251w	69716-06168		WS						37.99359	-84.46855	KU	Secondary	29' 4"				N	N	
		251w	69716-06168		WS			Raise Secondary Drip Loop			37.99359	-84.46855	KU	Secondary Drip Loop	28' 7"	29' 4"			N	N	
		251w	69716-06168		WS						37.99359	-84.46855	Metronet	Communication	26' 0"				N	N	
		251w	69716-06168		WS						37.99359	-84.46855	Charter	Communication	25' 0"		47		N	N	
		251w	69716-06168		WS						37.99359	-84.46855	Windstream	Communication	24' 0"	22' 1"			N	N	
		252w	69600-06360	50/2	WS	1=None				1112 TABORLAKE DR	37.99419	-84.46885	KU	Primary	41' 11"				N	N	A: DOT Truck Traffic Roads
		252w	69600-06360		WS						37.99419	-84.46885	KU	Primary	38' 7"				N	N	
		252w	69600-06360		WS						37.99419	-84.46885	KU	Neutral	34' 2"				N	N	
		252w	69600-06360		WS						37.99419	-84.46885	KU	Neutral	34' 0"				N	N	
		252w	69600-06360		WS						37.99419	-84.46885	KU	Neutral	33' 7"				N	N	
		252w	69600-06360		WS						37.99419	-84.46885	KU	Secondary	32' 11"				N	N	
		252w	69600-06360		WS						37.99419	-84.46885	KU	Secondary	32' 7"				N	N	
		252w	69600-06360		WS						37.99419	-84.46885	KU	Secondary	31' 9"				N	N	
		252w	69600-06360		WS						37.99419	-84.46885	Metronet	Communication	28' 5"				N	N	
		252w	69600-06360		WS			Attach to new pole			37.99419	-84.46885	Charter	Communication	27' 5"				N	N	
		252w	69600-06360		WS			Attach to new pole			37.99419	-84.46885	Charter	Communication	26' 5"		95		N	N	
		252w	69600-06360		WS			Attach to new pole			37.99419	-84.46885	Windstream	Communication	25' 5"	22' 4"			N	N	
		252w	69600-06360		WS			Attach to new pole			37.99419	-84.46885	Windstream	Communication	24' 5"				N	N	
		253w	69724-06451	45/3	WS	4=Comms&Elec				1104 TABORLAKE DR	37.99441	-84.46857	KU	Primary	37' 2"				Y	N	D: Pedestrian Only 9.5'
		253w	69724-06451		WS						37.99441	-84.46857	KU	Transformer	30' 10"				Y	N	
		253w	69724-06451		WS						37.99441	-84.46857	KU	Neutral	30' 4"				Y	N	
		253w	69724-06451		WS						37.99441	-84.46857	KU	Primary Riser	28' 8"				Y	N	

LX-FR06-05W Pole Inventory Report		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole Owner	Make Ready: 1=None 2=Comms 3=Elec 4=Comms&Elec 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance to Ground	Mid Span Clearance Comm to Power	3rd Party Comm Clearance Issue At Pole Y/N	3rd Party Comm Clearance Issue at Midspan Y/N	Environment Code: A: DOT Truck Traffic Roads B: Residential/Over Driveways C: Pedestrian traffic only D: Pedestrian Only 9.5'
		253w	69724-06451			WS					37.99441	-84.46857	KU	Secondary Riser	28' 2"				Y	N	
		253w	69724-06451			WS		Raise Secondary Drip Loop			37.99441	-84.46857	KU	Secondary Drip Loop	26' 11"	28' 2"			Y	N	
		253w	69724-06451			WS					37.99441	-84.46857	Metronet	Communication	24' 9"				Y	N	
		253w	69724-06451			WS		Lower Charter			37.99441	-84.46857	Charter	Communication	25' 9"	23' 9"	87		Y	N	
		253w	69724-06451			WS		Lower Windstream			37.99441	-84.46857	Windstream	Communication	24' 9"	22' 9"			Y	N	
		253w	69724-06451			WS		Lower Windstream			37.99441	-84.46857	Windstream	Communication	23' 9"	21' 9"	22' 2"		Y	N	
		254w	69858-06603	45/3		WS	1=None			1100 TABORLAKE DR	37.99489	-84.46801	KU	Primary	36' 4"				N	N	D: Pedestrian Only 9.5'
		254w	69858-06603			WS					37.99489	-84.46801	KU	Primary Riser	30' 7"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Primary	29' 11"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Transformer	29' 9"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Neutral	29' 7"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Secondary Drip Loop	28' 10"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Neutral	28' 8"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Secondary	28' 3"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Secondary	27' 7"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	KU	Secondary Drip Loop	27' 2"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	Metronet	Communication		23' 7"			N	N	
		254w	69858-06603			WS					37.99489	-84.46801	Charter	Communication	22' 7"		58		N	N	
		254w	69858-06603			WS					37.99489	-84.46801	Windstream	Communication	21' 7"				N	N	
		254w	69858-06603			WS					37.99489	-84.46801	Windstream	Communication	20' 7"		20' 6"		N	N	
		255w	69942-0677	50/2		WS	1=None			1098 TABORLAKE DR	37.99527	-84.46769	KU	Primary	45' 7"				N	N	D: Pedestrian Only 9.5'
		255w	69942-0677			WS					37.99527	-84.46769	KU	Primary	45' 1"				N	N	
		255w	69942-0677			WS					37.99527	-84.46769	KU	Neutral	39' 3"				N	N	
		255w	69942-0677			WS					37.99527	-84.46769	Metronet	Communication		31' 10"			N	N	
		255w	69942-0677			WS					37.99527	-84.46769	Charter	Communication	30' 10"		34		N	N	
		255w	69942-0677			WS					37.99527	-84.46769	Windstream	Communication	28' 4"				N	N	
		255w	69942-0677			WS					37.99527	-84.46769	Windstream	Communication	27' 0"		21' 11"		N	N	
		256w	70044-06962	45/3		WS	1=None			1092 TABORLAKE DR	37.99561	-84.46737	KU	Primary	38' 10"				N	N	D: Pedestrian Only 9.5'
		256w	70044-06962			WS					37.99561	-84.46737	KU	Primary	35' 3"				N	N	
		256w	70044-06962			WS					37.99561	-84.46737	KU	Neutral	29' 6"				N	N	
		256w	70044-06962			WS					37.99561	-84.46737	KU	Neutral	28' 11"				N	N	
		256w	70044-06962			WS					37.99561	-84.46737	KU	Primary Riser	28' 2"				N	N	
		256w	70044-06962			WS					37.99561	-84.46737	Metronet	Communication		24' 0"			N	N	
		256w	70044-06962			WS					37.99561	-84.46737	Metronet	Communication		23' 8"			N	N	
		256w	70044-06962			WS		Attach to new pole			37.99561	-84.46737	Charter	Communication		22' 8"			N	N	
		256w	70044-06962			WS		Attach to new pole			37.99561	-84.46737	Charter	Communication		22' 4"	73		N	N	
		256w	70044-06962			WS		Attach to new pole			37.99561	-84.46737	Windstream	Communication		21' 4"			N	N	
		256w	70044-06962			WS		Attach to new pole			37.99561	-84.46737	Windstream	Communication		21' 0"			N	N	
		256w	70044-06962			WS		Attach to new pole			37.99561	-84.46737	Windstream	Communication		20' 4"	20' 1"		N	N	
		256w	70044-06962			WS		Attach to new pole			37.99561	-84.46737	Windstream	Communication		20' 0"			N	N	
		257w	69988-07090	45/3		WS	1=None			1084 TABORLAKE DR	37.99591	-84.46748	KU	Primary	37' 10"				N	N	D: Pedestrian Only 9.5'
		257w	69988-07090			WS					37.99591	-84.46748	KU	Neutral	30' 3"				N	N	
		257w	69988-07090			WS					37.99591	-84.46748	Metronet	Communication		26' 0"			N	N	
		257w	69988-07090			WS					37.99591	-84.46748	Charter	Communication	25' 0"		46		N	N	
		257w	69988-07090			WS					37.99591	-84.46748	Windstream	Communication	24' 0"				N	N	

LX-FR06-05W Pole Inventory Report		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole Owner	Make Ready: 1=None 2=Comms 3=Elec 4=Comms&Elec 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance to Ground	Mid Span Clearance Comm to Power	3rd Party Comm Clearance Issue At Pole Y/N	3rd Party Comm Clearance Issue at Midspan Y/N	Environment Code: A: DOT Truck Traffic Roads B: Residential/Over Driveways C: Pedestrian traffic only D: Pedestrian Only 9.5'
		257w	69988-07090			WS					37.99591	-84.46748	Windstream	Communication	23' 0"		21' 0"		N	N	
		258w	69899-07172	55/2		WS	2=Comms			1068 TABORLAKE DR	37.99633	-84.46776	KU	Primary	46' 8"				Y	N	B:Residential/Over Driveways
		258w	69899-07172			WS					37.99633	-84.46776	KU	Primary	43' 3"				Y	N	
		258w	69899-07172			WS					37.99633	-84.46776	KU	Neutral	38' 7"				Y	N	
		258w	69899-07172			WS					37.99633	-84.46776	KU	Neutral	35' 4"				Y	N	
		258w	69899-07172			WS					37.99633	-84.46776	KU	Primary Riser	34' 5"				Y	N	
		258w	69899-07172			WS					37.99633	-84.46776	Metronet	Communication	30' 5"				Y	N	
		258w	69899-07172			WS					37.99633	-84.46776	Metronet	Communication	30' 1"				Y	N	
		258w	69899-07172			WS		Lower Charter			37.99633	-84.46776	Charter	Communication	31' 11"	29' 1"	32		Y	N	
		258w	69899-07172			WS		Lower Charter			37.99633	-84.46776	Charter	Communication	31' 7"	28' 8"			Y	N	
		258w	69899-07172			WS		Lower Windstream			37.99633	-84.46776	Windstream	Communication	29' 1"	27' 8"	19' 10"		Y	N	
		258w	69899-07172			WS		Lower Windstream			37.99633	-84.46776	Windstream	Communication	28' 8"	27' 4"			Y	N	
		258w	69899-07172			WS		Lower Windstream			37.99633	-84.46776	Windstream	Communication	27' 4"	26' 4"			Y	N	
		259w	70006-07314	45/3		WS	4=Comms&Elec			2108 PAIGE CT	37.99673	-84.46741	KU	Primary	36' 10"				Y	Y	D: Pedestrian Only 9.5'
		259w	70006-07314			WS					37.99673	-84.46741	KU	Primary	33' 6"				Y	Y	
		259w	70006-07314			WS					37.99673	-84.46741	KU	Primary	30' 8"				Y	Y	
		259w	70006-07314			WS					37.99673	-84.46741	KU	Neutral	25' 6"				Y	Y	
		259w	70006-07314			WS					37.99673	-84.46741	KU	Secondary	24' 10"				Y	Y	
		259w	70006-07314			WS					37.99673	-84.46741	KU	Secondary	24' 2"				Y	Y	
		259w	70006-07314			WS		Raise Secondary Drip Loop			37.99673	-84.46741	KU	Secondary Drip Loop	23' 4"	24' 2"			Y	Y	
		259w	70006-07314			WS		Extend Secondary Riser			37.99673	-84.46741	KU	Secondary Riser	22' 7"	24' 2"			Y	Y	
		259w	70006-07314			WS					37.99673	-84.46741	Metronet	Communication	20' 10"				Y	Y	
		259w	70006-07314			WS		Lower Charter			37.99673	-84.46741	Charter	Communication	20' 4"	19' 10"	44		Y	Y	
		259w	70006-07314			WS		Lower Windstream			37.99673	-84.46741	Windstream	Communication	19' 10"	18' 8"			Y	Y	
		259w	70006-07314			WS		Lower Windstream			37.99673	-84.46741	Windstream	Communication	19' 0"	17' 8"	14' 3"		Y	Y	
		260w	69850-07417	45/3		WS	2=Comms			998 LAKELAND DR	37.99700	-84.46794	KU	Primary	37' 2"				Y	N	B:Residential/Over Driveways
		260w	69850-07417			WS					37.99700	-84.46794	KU	Primary	36' 9"				Y	N	
		260w	69850-07417			WS					37.99700	-84.46794	KU	Primary	33' 0"				Y	N	
		260w	69850-07417			WS					37.99700	-84.46794	KU	Transformer	26' 4"				Y	N	
		260w	69850-07417			WS					37.99700	-84.46794	KU	Neutral	24' 8"				Y	N	
		260w	69850-07417			WS					37.99700	-84.46794	KU	Secondary	24' 1"				Y	N	
		260w	69850-07417			WS					37.99700	-84.46794	KU	Secondary	23' 6"				Y	N	
		260w	69850-07417			WS					37.99700	-84.46794	Metronet	Communication	20' 1"				Y	N	
		260w	69850-07417			WS		Lower Charter			37.99700	-84.46794	Charter	Communication	20' 7"	19' 1"	44		Y	N	
		260w	69850-07417			WS		Lower Windstream			37.99700	-84.46794	Windstream	Communication	20' 1"	18' 1"			Y	N	
		260w	69850-07417			WS		Lower Windstream			37.99700	-84.46794	Windstream	Communication	19' 6"	17' 1"	19' 2"		Y	N	
		261w	69650-07543	45/3		WS	2=Comms			999 LAKELAND DR	37.99732	-84.46854	KU	Primary	38' 5"				N	N	D: Pedestrian Only 9.5'
		261w	69650-07543			WS					37.99732	-84.46854	KU	Primary	38' 1"				N	N	
		261w	69650-07543			WS					37.99732	-84.46854	KU	Primary	34' 4"				N	N	
		261w	69650-07543			WS					37.99732	-84.46854	KU	Neutral	23' 9"				N	N	
		261w	69650-07543			WS					37.99732	-84.46854	Metronet	Communication	19' 10"				N	N	
		261w	69650-07543			WS		Resag Charter			37.99732	-84.46854	Charter	Communication	18' 10"		31		N	N	
		261w	69650-07543			WS					37.99732	-84.46854	Windstream	Communication	17' 10"				N	N	
		261w	69650-07543			WS					37.99732	-84.46854	Windstream	Communication	16' 10"	17' 6"			N	N	

LX-FR06-05W Pole Inventory Report																			
Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole Owner	Make Ready: 1=None 2=Comms 3=Elec 4=Comms&Elec 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance to Ground	Mid Span Clearance Comm to Power	3rd Party Comm Clearance Issue At Pole Y/N	3rd Party Comm Clearance Issue at Midspan Y/N	Environment Code: A: DOT Truck Traffic Roads B: Residential/Over Driveways C: Pedestrian traffic only D: Pedestrian Only 9.5'
262w	26110-2046	45/3		WS	2=Comms			2013 EDGEWATER CT	37.99752	-84.46894	KU	Primary	37' 3"				Y	N	D: Pedestrian Only 9.5'
262w	26110-2046			WS					37.99752	-84.46894	KU	Primary	33' 6"				Y	N	
262w	26110-2046			WS					37.99752	-84.46894	KU	Primary	30' 0"				Y	N	
262w	26110-2046			WS					37.99752	-84.46894	KU	Neutral	25' 8"				Y	N	
262w	26110-2046			WS					37.99752	-84.46894	KU	Neutral	25' 0"				Y	N	
262w	26110-2046			WS					37.99752	-84.46894	KU	Primary Riser	23' 11"				Y	N	
262w	26110-2046			WS					37.99752	-84.46894	KU	Secondary	23' 9"				Y	N	
262w	26110-2046			WS					37.99752	-84.46894	KU	Secondary	23' 4"				Y	N	
262w	26110-2046			WS		Lower Charter			37.99752	-84.46894	Metronet	Communication	20' 8"	20' 0"			Y	N	
262w	26110-2046			WS		Lower Windstream			37.99752	-84.46894	Charter	Communication	19' 8"	19' 0"	55		Y	N	
262w	26110-2046			WS		Lower Windstream			37.99752	-84.46894	Windstream	Communication	19' 8"	18' 0"			Y	N	
262w	26110-2046			WS		Lower Windstream			37.99752	-84.46894	Windstream	Communication	18' 8"	17' 8"			Y	N	
262w	26110-2046			WS		Lower Windstream			37.99752	-84.46894	Windstream	Communication	18' 0"	17' 0"			Y	N	
262w	26110-2046			WS		Lower Windstream			37.99752	-84.46894	Windstream	Communication	17' 8"	16' 8"	16' 0"		Y	N	

END



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS User Community

LXAM33
 PROJECT NUMBER:
 LXTNXY.00457.CB
 DATE: 5/8/2018
 USER NAME: arqalis
 DESIGN ENG

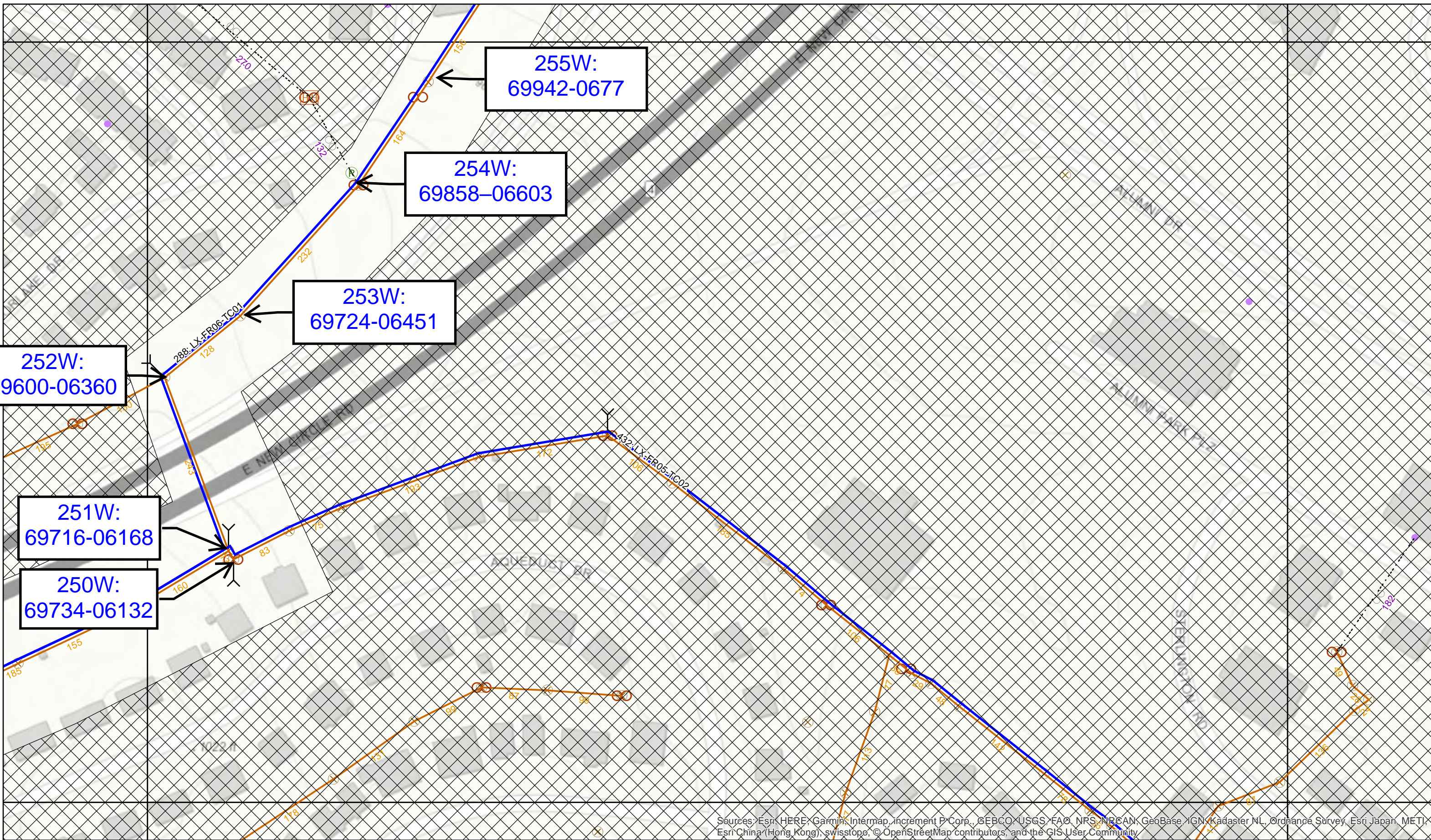
STAKING GRID DRAWING
 ROUTE: LX-FR06 Rev 2 Q2
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715

WIN3335



LXAL33

PROJECT NUMBER:
LXTNXY00457.CB

DATE: 5/8/2018

USER NAME: arqalis

DESIGN ENG

STAKING GRID DRAWING

ROUTE: LX-FR06 Rev 2 Q2

PROJECT: Lexington City Build

LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET

3701 Communications Way
Evansville, In 47715



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #:

LX-FR06-05W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # lauren sandefur 812.213.1328
 EMAIL ADDRESS lauren.sandefur@metronetinc.com
 Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: LaSandefur 7.16.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensor Work Description	Bill for Rent Y or N
1	69734-06132	250w	3235 Aqueduct Dr, Lexington, KY 40517	45/3, WXM	23'0"	20'8"	27'7"	(1)Fiber/Strand			
2	69716-06168	251w	3235 Aqueduct Dr, Lexington, KY 40517	45/3, WXM	24'0"	N/A	28'7"	(1)Fiber/Strand			
3	69600-06360	252w	1112 Taborlake Dr, Lexington, KY 40517	50/2, WXM	N/A	N/A	31'9"	(1)Fiber/Strand			
4	69724-06451	253w	1104 Taborlake Dr, Lexington, KY 40517	45/3, WXM	24'9"	N/A	26'11"	(1)Fiber/Strand			
5	69858-06603	254w	1100 Taborlake Dr, Lexington, KY 40517	45/3, WXM	21'7"	N/A	27'2"	(1)Fiber/Strand			
6	69942-0677	255w	1098 Taborlake Dr, Lexington, KY 40517	50/2, WXM	28'4"	N/A	39'3"	(1)Fiber/Strand			
7	70044-06962	256w	1092 Taborlake Dr, Lexington, KY 40517	45/3, WXM	N/A	N/A	28'2"	(2)Fiber/Strand			
8	69988-07090	257w	1084 Taborlake Dr, Lexington, KY 40517	45/3, WXM	24'0"	N/A	30'3"	(1)Fiber/Strand			
9	69899-07172	258w	1068 Taborlake Dr, Lexington, KY 40517	55/2, WXM	29'1"	N/A	34'5"	(2)Fiber/Strand			
10	70006-07314	259w	2108 Paige Ct, Lexington, KY 40517	45/3, WXM	19'10"	N/A	22'7"	(1)Fiber/Strand			
11	69850-07417	260w	998 Lakeland Dr, Lexington, KY 40517	45/3, WXM	20'1"	N/A	23'6"	(1)Fiber/Strand			
12	69650-07543	261w	999 Lakeland Dr, Lexington, KY 40517	45/3, WXM	17'10"	N/A	23'9"	(1)Fiber/Strand			
13	26110-2046	262w	2013 Edgewater Ct, Lexington, KY 40517	45/3, WXM	19'8"	N/A	23'4"	(1)Fiber/Strand			
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND																																																					
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From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:02 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LCP-LX173-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6219 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 2:45 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LCP-LX173-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX173-01w. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



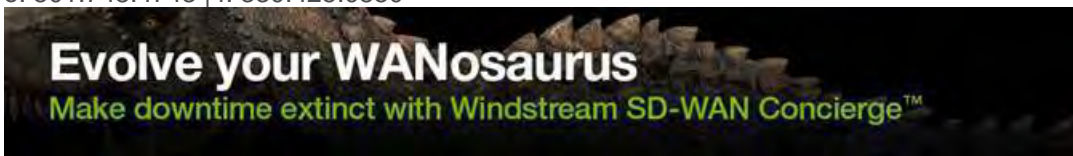
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:04 AM
To: Lauren Sandefur
Subject: Approvals

Lauren,

I have about 8 approvals I'm going to be sending your way in just a little bit. Just wanted to give you a heads up.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



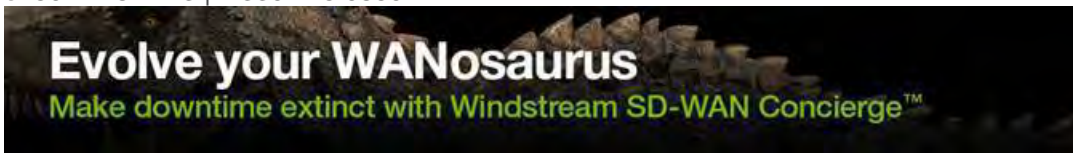
From: Hodges, Felicia N
Sent: Thursday, June 14, 2018 4:29 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU1639 LX13503W
Attachments: Exhibit B - MetroNet JU1639 LX13503W.pdf

Lauren,

This application has been approved. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Hays, Sarah K
Sent: Thursday, June 14, 2018 2:27 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: Exhibit B - MetroNet JU1639 LX13503W

LX135-03W; JUPR-1639

From: Sanders, Ashley L
Sent: Friday, June 08, 2018 4:12 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU1639 LX13503W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 1639
MetroNet package: LX13503W
JobTrac #: 21900069181050
Cost for MRC to bill MetroNet: \$3636.11

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac. I tried to fill out column 11 more specific and also I have some notes on how many poles we are doing make ready on since they have asked about getting more info. i.e., for this one of the 25 poles there is make ready needed on 11 poles and we have 23 strand attachments and 40 drops to lower. I will not summarize everyone moving forward b/c that info is on the exhibit B.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

JUPR1639

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 POLES
11- need MR/WS to lower
(23 attachments + 40 drops)
14- no make ready

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX135-03W

Submit in Duplicate

219000691-81050 LXTE

BILL METRONET:

#3,636.11

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812-213-1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com
Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
Authorized Signature & Date: [Signature]

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & make ready MUST BE PAID IN FULL UP FRONT.

NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	NT	88W	2017 ST MICHAEL DR, 5, Lexington, KY 40403, WXM	18'4"	N/A	21'7"		(1)Fiber/Strand	20'1"	NO MR	YES
2	NT	89W	2015 ST MICHAEL DR, 5, Lexington, KY 40403, WXM	18'1"	N/A	21'3"		(1)Fiber/Strand	20'	NO MR	u
3	NT	90W	2001 ST MICHAEL DR, 4, Lexington, KY 40403, WXM	16'8"	18'3"	29'3"		(1)Fiber/Strand	19'3"	NO MR	u
4	NT	117W	133 ST WILLIAM DR, Lexington, KY 40502	18'4"	18'1"	23'7"		(1)Fiber/Strand	20'3"	NO MR	u
5	27310-141	118W	141 ST WILLIAM DR, Lexington, KY 40502	35, 3, WXM	17'10"	17'1"	22'0"	(1)Fiber/Strand	18'9"	WS to Lower	u
6	27310-157	119W	149 ST WILLIAM DR, Lexington, KY 40502	35, 4, WXM	17'6"	17'6"	22'3"	(1)Fiber/Strand	18'11"	WS to Lower	u
7	27310-165	120W	153 ST WILLIAM DR, Lexington, KY 40502	35, 4, WXM	16'10"	16'10"	19'11"	(1)Fiber/Strand	16'7"	WS to Lower	u
8	27310-173	121W	165 ST WILLIAM DR, Lexington, KY 40502	40, 3, WXM	18'7"	17'11"	25'9"	(1)Fiber/Strand	21'	NO MR	u
9	27310-179	122W	166 ST MARGARET DR, Lexington, KY 40403, WXM	16'5"	15'11"	21'6"		(1)Fiber/Strand	18'2"	WS to Lower	u
10	27310-177	123W	175 ST WILLIAM DR, Lexington, KY 40502	35, 4, WXM	17'9"	17'9"	21'4"	(1)Fiber/Strand	18'	WS to Lower	u
11	27310-181	124W	181 ST WILLIAM DR, Lexington, KY 40502	35, 4, WXM	17'8"	17'10"	24'6"	(1)Fiber/Strand	19'9"	NO MR	u
12	27310-185	125W	185 ST WILLIAM DR, Lexington, KY 40502	50, 2, WXM	19'1"	19'1"	30'5"	(1)Fiber/Strand	21'9"	NO MR	u
13	NT	126W	2038 ST MATHILDA DR, Lexington, KY 40403, WXM	17'1"	17'6"	23'4"		(1)Fiber/Strand	20'	NO MR	u
14	NT	127W	2118 ST MATHILDA DR, Lexington, KY 40403, WXM	17'3"	17'6"	21'0"		(1)Fiber/Strand	17'8"	WS to Lower	u
15	NT	128W	182 ST WILLIAM DR, Lexington, KY 40502	40, 3, WXM	18'2"	18'10"	22'9"	(1)Fiber/Strand	19'5"	WS to Lower	u
16	NT	129W	178 ST WILLIAM DR, Lexington, KY 40502	40, 3, WXM	19'4"	N/A	22'8"	(1)Fiber/Strand	19'4"	WS to Lower	u
17	NT	130W	176 ST WILLIAM DR, Lexington, KY 40502	40, 3, WXM	17'2"	17'7"	25'8"	(1)Fiber/Strand	19'9"	NO MR	u
18	27310-172	131W	173 ST JAMES DR, Lexington, KY 40502	35, 4, WXM	17'7"	17'4"	22'1"	(1)Fiber/Strand	18'7"	WS to Lower	u
19	NT	132W	166 ST WILLIAM DR, Lexington, KY 40502	35, 4, WXM	16'9"	17'0"	22'8"	(1)Fiber/Strand	19'4"	NO MR	u

20	27310-158	133W	158 ST WILLIAM DR, Lexington, KY 40502	45, 3, WXM	19'1"	19'4"	25'10"	(1)Fiber/Strand	21'3"	NO MR	YES
21	NT	134W	148 ST WILLIAM DR, Lexington, KY 40502	35, 4, WXM	17'1"	17'5"	22'11"	(1)Fiber/Strand	19'9"	NO MR	YES
22	NT	135W •	138 ST WILLIAM DR, Lexington, KY 40502	35, 4, WXM	17'9"	18'0"	21'9"	(1)Fiber/Strand	18'0"	WS to Lower	U
23	NT	136W	130 ST WILLIAM DR, Lexington, KY 40502	40, 3, WXM	15'11"	15'11"	23'9"	(1)Fiber/Strand	19'9"	NO MR	U
24	27310-116	137W •	2111 COBURN BLVD, Lexington, KY 40502	45, 3, WXM	22'4"	N/A	28'3"	(1)Fiber/Strand	24'4"	WS to Lower	U
25	21880-2111	138W	2051 RICHMOND RD, 150, Lexington, KY 4	45, 3, WXM	21'6"	20'6"	27'5"	(1)Fiber/Strand	24'1"	NO MR	U
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 6/8/18

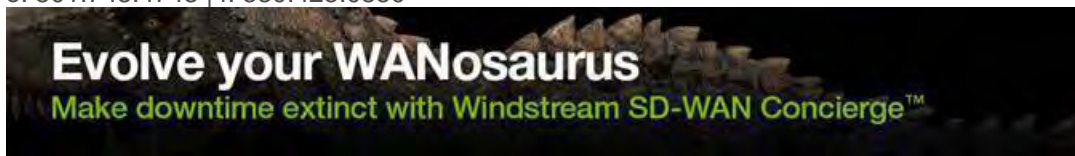
From: Hodges, Felicia N
Sent: Friday, June 29, 2018 10:08 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU1699 LX16701W
Attachments: Exhibit B - MetroNet JU1699 LX16701W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Hays, Sarah K
Sent: Thursday, June 28, 2018 2:08 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: Exhibit B - MetroNet JU1699 LX16701W

LX167-01

From: Sanders, Ashley L
Sent: Friday, June 8, 2018 4:17 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU1699 LX16701W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 1699

MetroNet package: LX16701W

JobTrac #: 21900069181065

Cost for MRC to bill MetroNet: \$2054.74

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

JUPR1699

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 total poles:
6- need MR (lower 10 att + 11 drops)
17- no MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX167-01W

LXTN

219000691-81065

Bill Metronet:

\$2,054.74

Name of Firm Applying:

CMN-RUS, INC

Contact Name,
Phone #

LAUREN SANDEFUR 812-213-1328

EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sandefur 3/10/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.

If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.

NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

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Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete	
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N	
1	69113-32704	24W	1640 OLD PARIS RD, Lexington, KY 40505	40, 3, WXM	22'7"	23'10"	29'11"		(1)Fiber/Strand	23'7"	NO MR	YES
2	26511-2644	25W	1644 OLD PARIS RD, Lexington, KY 40505	35, 4, WXM	22'5"	22'7"	25'11"		(1)Fiber/Strand	23'6"	u	
3	226511-1656	26W	1652 OLD PARIS RD, Lexington, KY 40505	35, 4, WXM	17'2"	N/A	N/A		(1)Fiber/Strand	18'2"	u	
4	26511-1664	27W	1663 OLD PARIS RD, Lexington, KY 40505	40, 4, WXM	27'11"	28'1"	N/A		(1)Fiber/Strand	28'11"	u	
5	26511-1667	28W	1673 OLD PARIS RD, Lexington, KY 40505	40, 3, WXM	29'6"	30'4"	N/A		(1)Fiber/Strand	30'6"	u	
6	26511-1652	29W	1679 OLD PARIS RD, Lexington, KY 40505	30, 5, WXM	21'8"	22'8"	N/A		(1)Fiber/Strand	22'8"	u	
7	26511-1682	30W	1683 OLD PARIS RD, Lexington, KY 40505	30, 4, WXM	18'8"	20'4"	N/A		(1)Fiber/Strand	19'8"	u	
8	26511-1704	31W	1702 OLD PARIS RD, Lexington, KY 40505	30, 5, WXM	20'11"	21'11"	N/A		(1)Fiber/Strand	21'11"	u	
9	27390-1708	32W	1713 OLD PARIS RD, Lexington, KY 40505	35, 4, WXM	20'1"	20'10"	24'8"		(1)Fiber/Strand	20'11"	WS to lower	
10	26390-1712	33W	1 DEEPWOOD DR, Lexington, KY 40505	40, 4, WXM	24'2"	26'6"	N/A		(1)Fiber/Strand	25'2"	NO MR	
11	26511-1624	34W	1721 OLD PARIS RD, Lexington, KY 40505	45, 3, WXM	28'8"	N/A	N/A		(1)Fiber/Strand	29'8"	u	
12	26511-1728	35W	2 DEEPWOOD DR, Lexington, KY 40505	45, 3, WXM	22'10"	23'7"	26'8"		(1)Fiber/Strand	23'3"	WS to Lower	
13	26390-1802	36W	1809 OLD PARIS RD, 101, Lexington, KY 4	40, 4, WXM	22'11"	N/A	30'10"		(2)Fiber/Strand	24'3"	NO MR	
14	70779-34223	37W	1809 OLD PARIS RD, 102, Lexington, KY 4	40, 3, WXM	21'9"	21'1"	29'8"		(1)Fiber/Strand	22'9"	u	
15	70890-34327	38W	1817 OLD PARIS RD, Lexington, KY 40505	40, 4, WXM	19'4"	20'9"	23'0"		(1)Fiber/Strand	20'4"	u	
16	26511-1818	39W	1829 OLD PARIS RD, Lexington, KY 40505	35, 4, WXM	22'1"	23'4"	N/A		(1)Fiber/Strand	23'1"	u	
17	26511-1912	40W	1913 OLD PARIS RD, Lexington, KY 40505	30, 4, WXM	20'9"	N/A	N/A		(1)Fiber/Strand	21'9"	u	
18	26511-1914	41W	1953 OLD PARIS RD, Lexington, KY 40505	30, 4, WXM	22'9"	20'7"	N/A		(1)Fiber/Strand	23'9"	u	
19	27511-1916	42W	1957 OLD PARIS RD, Lexington, KY 40505	30, 4, WXM	22'3"	N/A	N/A		(1)Fiber/Strand	23'3"	u	

20	26511-1926	43W	1961 OLD PARIS RD, Lexington, KY 40505	35, 4, WXM	25'1"	N/A	N/A		(1)Fiber/Strand	26.1"		YES
21	26511-1936	44W	1975 OLD PARIS RD, Lexington, KY 40505	30, 5, WXM	19'8"	N/A	N/A		(1)Fiber/Strand	20.8"		
22	26511-1990	45W ✓	1981 OLD PARIS RD, Lexington, KY 40505	35, 4, WXM	27'5"	25'10"	N/A		(2)Fiber/Strand	27.9"	WS to lower	}
23	72523-35793	46W ✓	2000 OLD PARIS RD, Lexington, KY 40505	40, 3, WXM	22'10"	N/A	27'7"		(1)Fiber/Strand	24.3"	WS to lower	
24	76223-35694	47W ✓	2000 OLD PARIS RD, Lexington, KY 40505	40, 3, WXM	20'7"	20'1"	24'10"		(1)Fiber/Strand	21.6"	WS to lower	}
25	72720-35594	48W ✓	130 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	20'5"	20'3"	23'7"		(1)Fiber/Strand	21.1"	WS to lower	
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 6/8/18

From: Hodges, Felicia N
Sent: Wednesday, July 11, 2018 12:29 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU2916 LXFR0702W
Attachments: Exhibit B - MetroNet JU2916 LXFR0702W.pdf

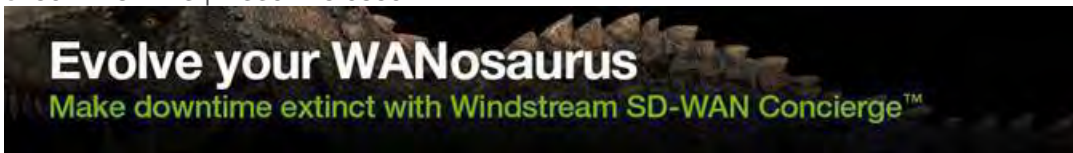
Importance: Low

Lauren,

Please see the following attachment for approval..

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, July 11, 2018 11:23 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU2916 LXFR0702W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 2916
MetroNet package: LXFR0702W
JobTrac #: 21900069181456
Cost for MRC to bill MetroNet: \$2437.63

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505
ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

18 - TOTAL POLES

8 - Need MR (lower 12 att + 10HG + 30G)

10 - NO MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX-FR07-02W

LXSE

Submit in Duplicate

219 000691-81456

BILL METRONET:

2,437.63

FOR MAKE READY

Name of Firm Applying: CMN-RUS, INC
Contact Name, Phone #: Lauren Sandefur 812.213.1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
Authorized Signature & Date:

Lauren Sandefur 4.23.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.

If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.

NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	2000-56-50	230W ✓	4300 NICHOLASVILLE RD, Lexington, KY	40/3, WXM	19'4"	N/A	25'10"	(1)Fiber/Strand	22'5"	WS to lower	YES
2	2000-56	231W	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	17'8"	N/A	25'1"	(1)Fiber/Strand	21'3"	NO MR	}
3	2000-55-60	232W ✓	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	18'2"	N/A	25'1"	(1)Fiber/Strand	21'9"	WS to lower	
4	2000-55	233W ✓	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	18'6"	N/A	24'2"	(1)Fiber/Strand	20'8"	"	
5	2000-54	234W ✓	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	19'10"	N/A	23'10"	(1)Fiber/Strand	20'6"	"	
6	2000-53-50	235W ✓	4280 NICHOLASVILLE RD, Lexington, KY	40/3, WXM	20'8"	N/A	24'2"	(1)Fiber/Strand	22'8"	"	
7	2000-53	236W ✓	4280 NICHOLASVILLE RD, Lexington, KY	45/3, WXM	24'0"	N/A	28'2"	(1)Fiber/Strand	24'10"	"	
8	NT	237W	108 MARKETPLACE DR, Lexington, KY 40	50/2, WXM	28'1"	N/A	31'2"	(1)Fiber/Strand	29'	NO MR	
9	NT	238W	108 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	19'5"	N/A	25'0"	(1)Fiber/Strand	21'	"	
10	2000-51-30	239W	108 MARKETPLACE DR, Lexington, KY 40	45/5, WXM	N/A	N/A	27'1"	(1)Fiber/Strand	21'10"	"	
11	2000-51	240W	108 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	18'5"	N/A	27'8"	(1)Fiber/Strand	21'7"	"	
12	2000-08	241W	100 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	18'5"	N/A	27'9"	(1)Fiber/Strand	24'5"	"	
13	2000-50	242W	100 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	19'9"	N/A	28'1"	(1)Fiber/Strand	24'9"	"	
14	2000-49	243W	100 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	22'0"	N/A	30'1"	(1)Fiber/Strand	26'	"	
15	L2012-P1	245W ✓	3715 NICHOLASVILLE RD, Lexington, KY	55/2, WXM	30'7"	N/A	34'9"	(1)Fiber/Strand	30'3"	WS to lower	
16	28804-1	296W	111 W Reynolds Rd, 150, Lexington, 40515	50, 2, WXM	21'4"	N/A	31'2"	(1)Fiber/Strand	24'2"	NO MR	
17	22738-101	298W ✓	3270 Nicholasville Rd, 110, Lexington, 405	45, 3, WXM	21'9"	N/A	25'11"	(1)Fiber/Strand	21'9"	WS to lower	
18	NT	299W	3270 Nicholasville Rd, 110, Lexington, 405	35, 4, WXM	N/A	N/A	26'2"	(1)Fiber/Strand	21'9"	NO MR	
19											

for RPL 7/10/18

From: Hodges, Felicia N
Sent: Wednesday, July 11, 2018 4:21 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU2916 LXFR0702W
Attachments: Exhibit B - MetroNet JU2916 LXFR0702W.pdf

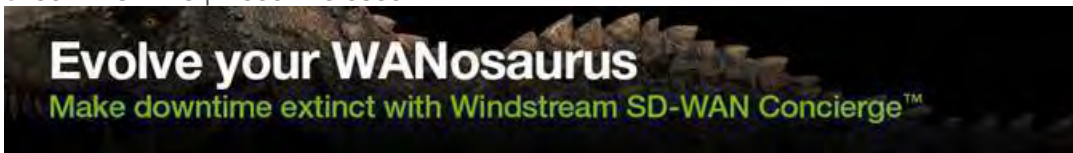
Importance: Low

Lauren,

Please see the following attachment for approval..

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, July 11, 2018 11:23 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU2916 LXFR0702W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 2916
MetroNet package: LXFR0702W
JobTrac #: 21900069181456
Cost for MRC to bill MetroNet: \$2437.63

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505
ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

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18 - TOTAL POLES
 8 - Need MR (lower 12 att + 10HG + 30G)
 10 - NO MR

EXHIBIT B
 Windstream CORPORATION
 APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX-FR07-02W

LXSE

219 000691-81456

BILL METRONET:

2,437.63

FOR MAKE READY

Name of Firm Applying: CMN-RUS, INC
 Contact Name, Phone #: Lauren Sandefur 812.213.1328
 EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
 Authorized Signature & Date:

Lauren Sandefur 4.23.18

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Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	2000-56-50	230W ✓	4300 NICHOLASVILLE RD, Lexington, KY	40/3, WXM	19'4"	N/A	25'10"	(1)Fiber/Strand	22'5"	WS to lower	YES
2	2000-56	231W	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	17'8"	N/A	25'1"	(1)Fiber/Strand	21'3"	NO MR	}
3	2000-55-60	232W ✓	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	18'2"	N/A	25'1"	(1)Fiber/Strand	21'9"	WS to lower	
4	2000-55	233W ✓	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	18'6"	N/A	24'2"	(1)Fiber/Strand	20'8"	"	
5	2000-54	234W ✓	105 TORONTO RD, Lexington, KY 40515	40/3, WXM	19'10"	N/A	23'10"	(1)Fiber/Strand	20'6"	"	
6	2000-53-50	235W ✓	4280 NICHOLASVILLE RD, Lexington, KY	40/3, WXM	20'8"	N/A	24'2"	(1)Fiber/Strand	22'8"	"	
7	2000-53	236W ✓	4280 NICHOLASVILLE RD, Lexington, KY	45/3, WXM	24'0"	N/A	28'2"	(1)Fiber/Strand	24'10"	"	
8	NT	237W	108 MARKETPLACE DR, Lexington, KY 40	50/2, WXM	28'1"	N/A	31'2"	(1)Fiber/Strand	29'	NO MR	
9	NT	238W	108 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	19'5"	N/A	25'0"	(1)Fiber/Strand	21'	"	
10	2000-51-30	239W	108 MARKETPLACE DR, Lexington, KY 40	45/5, WXM	N/A	N/A	27'1"	(1)Fiber/Strand	21'10"	"	
11	2000-51	240W	108 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	18'5"	N/A	27'8"	(1)Fiber/Strand	21'7"	"	
12	2000-08	241W	100 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	18'5"	N/A	27'9"	(1)Fiber/Strand	24'5"	"	
13	2000-50	242W	100 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	19'9"	N/A	28'1"	(1)Fiber/Strand	24'9"	"	
14	2000-49	243W	100 MARKETPLACE DR, Lexington, KY 40	45/3, WXM	22'0"	N/A	30'1"	(1)Fiber/Strand	26'	"	
15	L2012-P1	245W ✓	3715 NICHOLASVILLE RD, Lexington, KY	55/2, WXM	30'7"	N/A	34'9"	(1)Fiber/Strand	30'3"	WS to lower	
16	28804-1	296W	111 W Reynolds Rd, 150, Lexington, 40515	50, 2, WXM	21'4"	N/A	31'2"	(1)Fiber/Strand	24'2"	NO MR	
17	22738-101	298W ✓	3270 Nicholasville Rd, 110, Lexington, 405	45, 3, WXM	21'9"	N/A	25'11"	(1)Fiber/Strand	21'9"	WS to lower	
18	NT	299W	3270 Nicholasville Rd, 110, Lexington, 405	35, 4, WXM	N/A	N/A	26'2"	(1)Fiber/Strand	21'9"	NO MR	
19											

for RPL 7/10/18

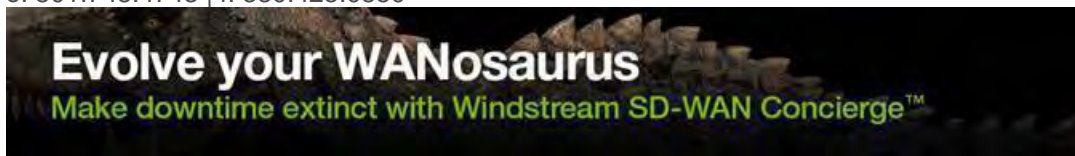
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:20 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU3172 LX05301W
Attachments: Exhibit B - MetroNet JU3172 LX05301W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 11:45 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU3172 LX05301W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 3172
MetroNet package: LX05301W
JobTrac #: 21900069181170
Cost for MRC to bill MetroNet: \$903.80

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

2017-01-10
2017-01-10

JUPR3172

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

2-TOTAL POLES
1-Needs MR (lower 2att + dg)
1-No MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

LX053-01W

219000691-81170 LXSE
BILL METROUNET:

\$903.80

430.18 for MAKE READY

Contact Name: Lauren Sandefur 812.213.1328
Phone #
EMAIL ADDRESS lauren.sandefur@metronetinc.com

3701 Communications Way, Evansville, IN 47715
Authorized Signature & Date:

Street Address,
City, ST, ZIP of Firm
Applying

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.

If we choose to proceed all ESTIMATED fees, including engineering & make-ready MUST BE PAID IN FULL UP FRONT.

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Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Power Cable	Hgt of lowest Power Cable	Hgt of other attachments on pole	# & type of Attachments	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	2W •	100 E Reynolds Rd, Lexington, KY 40517	45, 3, WXM	21'2"	N/A	23'4"		(1) Fiber/Strand	19'11"	No MR	YES
2	3W •	100 E Reynolds Rd, Lexington, KY 40517	45, 3, WXM	19'2"	N/A	23'4"		(1) Fiber/Strand	19'10"	WS to lower	YES
3											
4											
5											
6											

ESTIMATED TOTAL COSTS

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

6/27/18

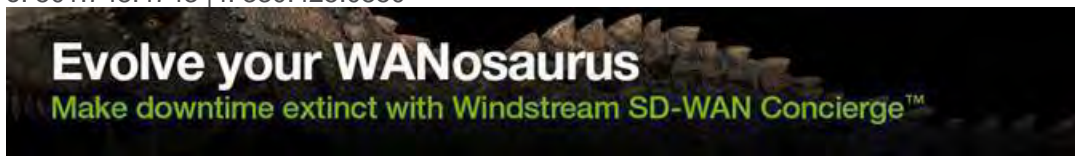
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:34 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU3757 LX04903W
Attachments: Exhibit B - MetroNet JU3757 LX04903W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 12:35 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU3757 LX04903W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 3757
MetroNet package: LX04903W
JobTrac #: 21900069181294
Cost for MRC to bill MetroNet: \$5328.35

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

JUPR3757

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EXHIBIT B

PROPOSAL #:

LX049-03W

Windstream CORPORATION
APPLICATION FOR POLE LICENSE

Submit in Duplicate

219000691-81294 WSE

ME TROVET:

\$5328.35

For MATE READY

25 - TOPAL POLES
21 - Need MR (lower 29att + 11dg)
4 - NO MR

Windstream CORPORATION
APPLYING

Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sanderfur 4/23/18

Name of Firm Applying:

CMH-RUS, INC

Contact Name,
Phone #

Lauren Sanderfur 812.213.1328

EMAIL ADDRESS: lauren.sanderfur@metronelinc.com

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & make-ready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OR FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	Licensee to Complete	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	NT	4728 Harland Pkwy, Lexington, Ky 40515	45, 3, WXXM	16'4"	N/A	28'9"		(1)fiber/strand	19'14"	NO MR	YES
2	23933-4728	4740 Harland Pkwy, Lexington, Ky 40515	45, 3, WXXM	N/A	N/A	23'9"		(1)fiber/strand	20'5"	WS to att + lower	
3	NT	1304 Harland Woods Way, Lexington, Ky 40515	45, 3, WXXM	23'8"	23'8"	27'8"		(1)fiber/strand	23'8"	NO MR	
4	23933-4714	54W	60, 2, WXXM	30'10"	N/A	39'8"		(1)fiber/strand	33'	WS to lower	
5	23933-4708	55W	45, 3, WXXM	24'3"	N/A	26'9"		(1)fiber/strand	23'5"		
6	NT	1315 The Kings Ct, Lexington, Ky 40515	45, 3, WXXM	26'0"	26'0"	27'4"		(1)fiber/strand	24'		
7	NT	4692 Harland Pkwy, Lexington, Ky 40515	45, 3, WXXM	23'9"	N/A	27'0"		(1)fiber/strand	23'		
8	27774-4726	4728 Harland Pkwy, Lexington, Ky 40515	45, 3, WXXM	22'4"	22'4"	26'7"		(1)fiber/strand	22'4"		
9	1867982	4721 Harland Pkwy, Lexington, Ky 40515	45, 3, WXXM	25'3"	N/A	28'4"		(1)fiber/strand	22'5"		
10	27774-1217	1245 Kearsaw Village Dr, Lexington, Ky 40	45, 3, WXXM	24'5"	24'5"	28'4"		(1)fiber/strand	24'5"		
11	27774-1208	1225 Kearsaw Village Dr, Lexington, Ky 40	50, 2, WXXM	26'0"	26'0"	29'4"		(1)fiber/strand	26'		
12	27774-1209	4809 Laurel Creek Cir, Lexington, Ky 40515	45, 3, WXXM	23'11"	N/A	28'4"		(1)fiber/strand	25'6"		
13	64450-95044	1229 Rockledge Rd, Lexington, Ky 40515	45, 3, WXXM	20'5"	N/A	24'0"		(1)fiber/strand	20'5"		
14	64367-95045	4513 Harland Pkwy, Lexington, Ky 40515	40, 3, WXXM	21'6"	N/A	22'8"		(1)fiber/strand	19'4"		
15	642279-95046	4505 Harland Pkwy, Lexington, Ky 40515	40, 3, WXXM	20'8"	20'9"	22'6"		(1)fiber/strand	19'2"		
16	64139-95047	4487 Harland Pkwy, Lexington, Ky 40515	40, 3, WXXM	20'10"	20'10"	22'11"		(1)fiber/strand	19'7"		
17	64094-95048	4493 Harland Pkwy, Lexington, Ky 40515	40, 3, WXXM	20'6"	19'10"	23'4"		(1)fiber/strand	20'		
18	63996-95048	4481 Harland Pkwy, Lexington, Ky 40515	45, 3, WXXM	24'5"	24'5"	25'9"		(1)fiber/strand	22'5"		
19	63907-95026	4473 Harland Pkwy, Lexington, Ky 40515	40, 3, WXXM	20'4"	N/A	23'4"		(2)fiber/strand	19'8"		

20	63860-94937	70W	✓	4012 Jld Ct, Lexington, Ky 40515	40, 3, WXM	22'3"	N/A	26'8"	(1)Fiber/Strand	2-3'3"	WS to lower	YES
21	63797-94849	71W	✓	4020 Jld Ct, Lexington, Ky 40515	45, 4, WXM	21'0"	N/A	24'9"	(2)Fiber/Strand	21'	U	
22	63595-94895	72W	✓	4017 Jld Ct, Lexington, Ky 40515	40, 3, WXM	19'8"	19'0"	24'2"	(1)Fiber/Strand	20'8"	U	
23	63429-94935	73W	✓	1109 Ledgebrook Ct, Lexington, Ky 40515	45, 3, WXM	25'11"	26'3"	30'7"	(2)Fiber/Strand	26'10"	U	
24	63391-94882	74W		1109 Ledgebrook Ct, Lexington, Ky 40515	50, 2, WXM	28'1"	28'1"	33'8"	(1)Fiber/Strand	30'4"	NO MR	
25	63255-94823	75W	✓	1012 Tanbark Rd, Lexington, Ky 40515	50, 2, WXM	30'9"	N/A	35'4"	(2)Fiber/Strand	31'8"	WS to lower	

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

ESTIMATED TOTAL COSTS

Submit to: Windstream.JohnUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 6/27/18

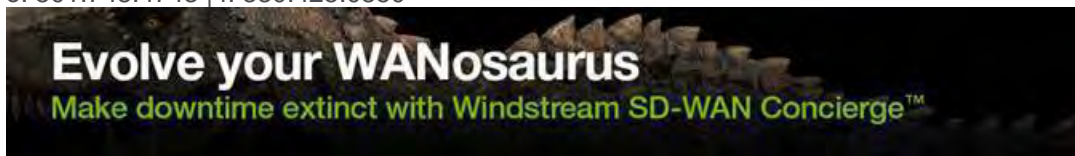
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:23 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU3758 LXFR0509W
Attachments: Exhibit B - MetroNet JU3758 LXFR0509W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 12:02 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU3758 LXFR0509W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 3758
MetroNet package: LXFR0509W
JobTrac #: 72198972100027
Cost for MRC to bill MetroNet: \$8509.65

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

Supp 3758

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

18 - TOTAL POLES

15 - Need MR (2 poles, lower than 22 drops)

3 - No MR

EXHIBIT B

Windstream CORPORATION

APPLICATION FOR POLE LICENSE

Submit in Duplicate

PROPOSAL #:

LX-FR05-09W

721989721-00027 LXSE

BILL METHOD: \$8,509.65

Name of Firm Applying: CAN-RUS, INC
 Street Address: 3701 Communications Way, Evansville, IN 47715
 City, St, Zip of Firm: Evansville, IN 47715
 Contact Name: Lauren Sandefur
 Phone #: 812.213.1328
 EMAIL ADDRESS: lauren.sandefur@metronline.com

4.30.18 For MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & materials MUST BE PAID IN FULL UP FRONT.

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Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12						
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Height of highest Tel Cable	Height of highest Tel Drop	Height of lowest Power Cable	Height of other attachments on pole	# & type of Attachments	Height Licensee to attach at	Windstream To Complete	Windstream To Complete	Bill for Rent Y or N
1	63969-92514	33W	4656 Collinswood Dr, Lexington, Ky 40505	45, 3, WXXM	21'6"	N/A	29'11"	(1)Fiber/strand	24'10"	No MR	YES						
2	64077-92413	34W	4657 Collinswood Dr, Lexington, Ky 40505	45, 3, WXXM	20'9"	N/A	30'4"	(1)Fiber/strand	24'7"	No MR							
3	64114-92375	35W	4657 Collinswood Dr, Lexington, Ky 40505	45, 3, WXXM	20'6"	N/A	26'8"	(1)Fiber/strand	22'6"	WS to lower							
4	64209-92275	36W	4661 Collinswood Dr, Lexington, Ky 40505	45, 3, WXXM	23'5"	N/A	28'1"	(1)Fiber/strand	24'9"	u							
5	64343-92123	37W	4669 Collinswood Dr, Lexington, Ky 40505	45, 3, WXXM	25'3"	N/A	30'9"	(1)Fiber/strand	27'9"	u							
6	63838-92655	38W	4656 Collinswood Dr, Lexington, Ky 40505	45, 3, WXXM	21'8"	N/A	27'9"	(1)Fiber/strand	23'10"	u							
7	00815-48	39W	1044 Turnbridge Rd, Lexington, Ky 40505	45, 3, WXXM	19'5"	N/A	27'2"	(1)Fiber/strand	22'10"	No MR							
8	63729-92773	40W	1098 Rockbridge Rd, Lexington, Ky 40505	50, 2, WXXM	22'4"	N/A	26'10"	(1)Fiber/strand	23'4"	WS to lower							
9	63660-92852	41W	1098 Rockbridge Rd, Lexington, Ky 40505	45, 3, WXXM	24'8"	N/A	27'7"	(1)Fiber/strand	24'3"	u							
10	63584-92942	42W	1098 Rockbridge Rd, Lexington, Ky 40505	45, 3, WXXM	25'0"	N/A	27'7"	(1)Fiber/strand	25'7"	u							
11	63510-93024	43W	1084 Stonebridge Ln, Lexington, Ky 40505	45, 3, WXXM	22'1"	N/A	25'11"	(1)Fiber/strand	22'5"	u							
12	63408-93143	44W	1088 Stonebridge Ln, Lexington, Ky 40505	40, 5, WXXM	22'9"	22'9"	25'10"	(1)Fiber/strand	25'	u							
13	63310-93257	45W	1078 Stonebridge Ln, Lexington, Ky 40505	45, 3, WXXM	23'0"	22'8"	28'4"	(1)Fiber/strand	23'2"	u							
14	63270-93303	46W	1080 Stonebridge Ln, Lexington, Ky 40505	45, 3, WXXM	21'3"	21'3"	27'2"	(1)Fiber/strand	23'2"	u							
15	63112-93486	47W	1084 Stonebridge Ln, Lexington, Ky 40505	50, 2, WXXM	22'1"	N/A	27'0"	(1)Fiber/strand	23'	u							
16	63062-93585	48W	1088 Stonebridge Ln, Lexington, Ky 40505	45, 3, WXXM	19'7"	19'3"	25'2"	(1)Fiber/strand	21'1"	u							
17	62993-93698	49W	911 Janus Dr, Lexington, Ky 40505	40, 3, WXXM	19'3"	18'4"	23'7"	(1)Fiber/strand	20'3"	1 Pole + WS lower							
18	NT	50W	923 Janus Dr, Lexington, Ky 40505	40, 3, WXXM	18'9"	18'4"	22'10"	(1)Fiber/strand	18'9"	1 Pole + WS lower							

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

ESTIMATED TOTAL COSTS

Submit to: Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

6/29/18

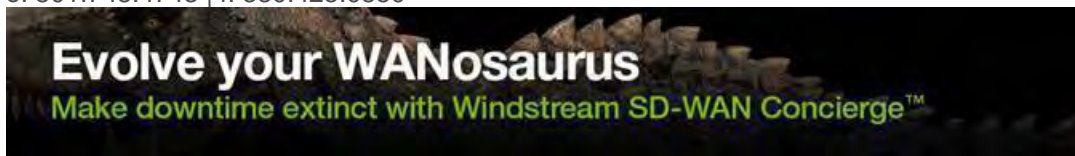
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:26 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU3995 LXFR0901W
Attachments: Exhibit B - MetroNet JU3995 LXFR0901W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 12:17 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Jones, Christopher T <Christopher.T.Jones@windstream.com>
Subject: Exhibit B - MetroNet JU3995 LXFR0901W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 3995
MetroNet package: LXFR0901W
JobTrac #: 21900069181236
Cost for MRC to bill MetroNet: \$1719.74

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

13 - TOTAL PAGES

4 - Need MR (attach + lower 5 + 1046)

9 - No MR

EXHIBIT B

PROPOSAL #:

LX-FR09-01W

WINDSTREAM CORPORATION

Submit in Duplicate

JUPR3995

Name of Firm Applying: CMN-RUS, INC
 Street Address, City, ST, ZIP of Firm: 3701 Communications Way, Evansville, IN 47715
 Contact Name: LAUREN SANDEFUR
 Phone #: 812.213.1328
 EMAIL ADDRESS: LAUREN.SANDEFUR@METRONETINC.COM
 Authorized Signature & Date: Lauren Sandefur

219000691-81236 LXTS
 RUC METRONET:
 \$ 1719.74
 FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project. If we choose to proceed all ESTIMATED fees, including engineering & makerendy MUST BE PAID IN FULL UP FRONT. NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD. NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

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Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	# & type of Attachments	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	23920-2000	24W	2000 HARRODSBURG RD, Lexington, KY 45/3, WXM	22'11"	N/A	24'2"	23'10"	(1)Fiber/Stand	23'10"	NO MR	YES
2	23920-1980	25W	1998 HARRODSBURG RD, Lexington, KY 50/2, WXM	25'1"	N/A	28'7"	27'6"	(1)Fiber/Stand	27'6"	US to act + lower	
3	23290-1970	26W	1998 HARRODSBURG RD, Lexington, KY 50/2, WXM	26'9"	N/A	29'11"	28'9"	(1)Fiber/Stand	28'9"	~	
4	NT	27W	1970 HARRODSBURG RD, Lexington, KY 50/2, WXM	26'7"	N/A	30'7"	28'7"	(1)Fiber/Stand	28'7"	NO MR	
5	NT	28W	1948 HARRODSBURG RD, Lexington, KY 45/3, WXM	21'5"	N/A	24'9"	25'	(1)Fiber/Stand	25'	NO MR	
6	23920-1912	29W	1910 HARRODSBURG RD, 104, Lexington 45/3, WXM	21'1"	N/A	26'1"	22'9"	(1)Fiber/Stand	22'9"	NO MR	
7	23920-1910	30W	1906 HARRODSBURG RD, Lexington, KY 45/3, WXM	22'9"	N/A	30'1"	25'9"	(1)Fiber/Stand	25'9"	NO MR	
8	23920-1908	31W	631 BLUE ASH DR, Lexington, KY 40503 50/2, WXM	23'2"	N/A	27'11"	25'7"	(1)Fiber/Stand	25'7"	NO MR	
9	23920-1904	33W	1904 HARRODSBURG RD, Lexington, KY 45/3, WXM	N/A	N/A	29'11"	26'5"	(1)Fiber/Stand	26'5"	US to act + lower	
10	23920-1896	34W	1900 HARRODSBURG RD, Lexington, KY 45/3, WXM	22'2"	N/A	29'0"	24'0"	(1)Fiber/Stand	24'0"	NO MR	
11	23920-1886	35W	1887 HARRODSBURG RD, Lexington, KY 40/3, WXM	21'3"	N/A	27'8"	24'	(1)Fiber/Stand	24'	NO MR	
12	23920-1786	36W	1787 HARRODSBURG RD, Lexington, KY 45/3, WXM	24'1"	N/A	30'9"	26'8"	(1)Fiber/Stand	26'8"	NO MR	
13	23920-1737	43W	1626 HARRODSBURG RD, Lexington, KY 45/3, WXM	22'5"	N/A	27'2"	23'5"	(1)Fiber/Stand	23'5"	NO MR	

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: [Signature] 6/27/18

Submit to: Windstream.JointUse@windstream.com

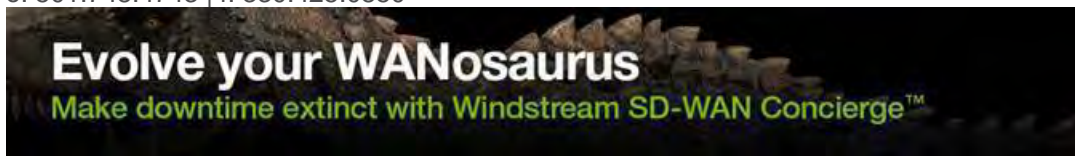
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:16 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU3996 LXFR1001W - no make ready, bill for Engineering
Attachments: Exhibit B - MetroNet JU3996 LXFR1001W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 11:31 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: Exhibit B - MetroNet JU3996 LXFR1001W - no make ready, bill for Engineering

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 3996
MetroNet package: LXFR1001W
JobTrac #: No jobtrac due to no make ready
No cost for MRC, need to bill MetroNet for Byers engineering time = \$241.00

Let me know if you have questions.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505
ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

JUPR3996

Fwy 7535

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

2-TOTAL POLES

LX-FR10-01W

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

2-NO MR

PROPOSAL #:

NO MR, BILL METRUMER FOR ENGINEERING

Name of Firm Applying:

CMN-RUS, INC

Contact Name,
Phone #

LAUREN SANDEFUR 812.213.1328

EMAIL ADDRESS LAUREN.SANDEFUR@METRONETINC.COM

Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sandefur 5/23/18

DUY: \$241.00

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & markready MUST BE PAID IN FULL UP FRONT.
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Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	# & type of Attachments	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	41336-20845	1W	1296 Cape Cod Cir, Lexington, 40509	35, 3, WXXM	22'1"	N/A	22'8"	(1)Riber/Strand	24'1"	NO MR	YES
2	26515-1941	2W	1937 Parkers Mill Rd, Lexington, 40509	40, 3, WXXM	26'5"	N/A	N/A	(2)Riber/Strand	31'5"	NO MR	YES
3											
4											
5											
6											
7											
8											
9											
10											
11											

ESTIMATED TOTAL COSTS

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

for MR 6/27/18

WIN3369

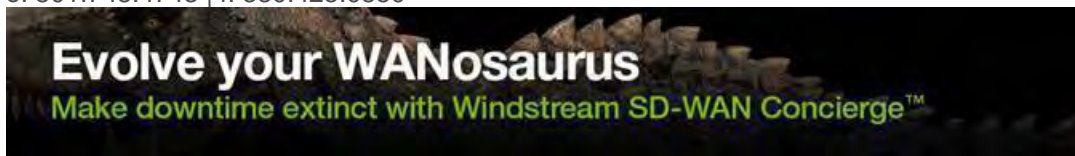
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:35 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU3997 LX05901W
Attachments: Exhibit B - MetroNet JU3997 LXF05901W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 2:45 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Jones, Christopher T <Christopher.T.Jones@windstream.com>
Subject: Exhibit B - MetroNet JU3997 LX05901W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 3997
MetroNet package: LX05901W
JobTrac #: 21900069181295
Cost for MRC to bill MetroNet: \$704.34

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

3 POLES TOTAL

2 - Need MR (2 att + 6 drops)
1 - No MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX059-01W

Submit in Duplicate

JUPR3997

WEX

219000691-81295

Bill MeterNet:

18 # 704.34

Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sandefur

Name of Firm Applying:

GM-RJUS, INC

Contact Name,
Phone #

LAUREN SANDEFUR 812.213.1328

EMAIL ADDRESS LAUREN.SANDEFUR@METRONETINC.COM

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & make-ready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	NT	2048 BLACKHORSE LN, Lexington, 40509	50, 2, WXM	30'1"	N/A	30'9"		(1) Fiber/Strand	27-54	WS to lower	YES
2	23917-1040	2044 BLACKHORSE LN, Lexington, 40509	50, 2, WXM	26'1"	27'7"	31'9"		(1) Fiber/Strand	27-44	WS to lower	YES
3	NT	2040 ST STEPHENS GREEN, Lexington, 4	35, 4, WXM	25'3"	N/A	N/A		(1) Fiber/Strand	26-30	NO MR	YES
4											
5											
6											

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@windstream.com
for file 6/27/18

For make ready

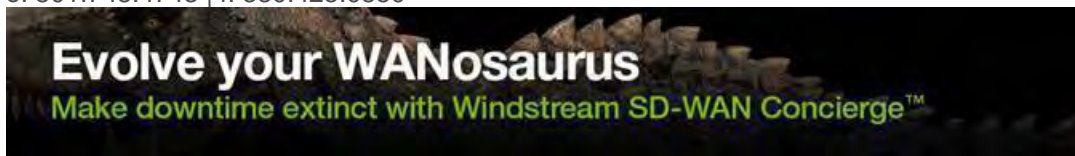
From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:47 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU3999 LXFR1102W
Attachments: Exhibit B - MetroNet JU3999 LXFR1102W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 2:45 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Jones, Christopher T <Christopher.T.Jones@windstream.com>
Subject: Exhibit B - MetroNet JU3999 LXFR1102W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 3999
MetroNet package: LXFR1102W
JobTrac #: 21900069181293
Cost for MRC to bill MetroNet: \$1860.28

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!!!

EXHIBIT B

Windstream CORPORATION

APPLICATION FOR POLE LICENSE

Submit in Duplicate

PROPOSAL #:

LX-FR11-02W

JUPR3999

LXTM

3- Total Poles
3- Need MR (lower 15 ft)

Name of Firm Applying:

GMN-RUS, INC

Contact Name,
Phone #

LAUREN SANDEFUR 812.213.1328

EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sandefur

5-23-18 \$1860.28

219000691-81293
Bill METRAVER.

WIN3375

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.

If we choose to proceed all ESTIMATED fees, including engineering & maker-ready MUST BE PAID IN FULL UP FRONT.

NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the maker-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
License to complete	License to complete	License to complete	License to Complete	License to Complete	License to Complete	License to Complete	License to Complete	License to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	26370-1863	310W	695 LACO DR, Lexington, KY 40510	40/3, WXM	33'1"	N/A	N/A	(1) Fiber/Strand	33'1"	WS to lower	YES
2	26370-1862	311W	1795 OLD FRANKFORT PIKE, Lexington, KY 40513, WXM	45/3, WXM	36'4"	N/A	N/A	(1) Fiber/Strand	36'4"	WS to lower	U
3	26370-1861	312W	1795 OLD FRANKFORT PIKE, Lexington, KY 40513, WXM	45/3, WXM	35'11"	N/A	N/A	(1) Fiber/Strand	35'11"	WS to lower	U
4											
5											

ESTIMATED TOTAL COSTS

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com
Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

LA

6/29/18

For make ready

From: Windstream Jointuse
Sent: Thursday, June 28, 2018 10:48 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4000 LX22101W
Attachments: Exhibit B - MetroNet JU4000 LX22101W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



Evolve your WANosaurus
Make downtime extinct with Windstream SD-WAN Concierge™

From: Sanders, Ashley L
Sent: Wednesday, June 27, 2018 2:46 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Jones, Christopher T <Christopher.T.Jones@windstream.com>
Subject: Exhibit B - MetroNet JU4000 LX22101W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 4000
MetroNet package: LX22101W
JobTrac #: 72198972100033
Cost for MRC to bill MetroNet: \$2682.21

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

7 - TOTAK POLES
 4 - Need more (2 poles, 7att, 2 drops)
 3 - No MR

EXHIBIT B
 PROPOSAL #:
 WINDSTREAM CORPORATION
 APPLICATION FOR POLE LICENSE
 Submit in Duplicate

LX221-01W

JUPR4000

LX

Name of Firm Applying: GAN-RUS, INC
 Street Address, City, ST, ZIP of Firm: 3701 Communications Way, Evansville, IN 47715
 Contact Name, Phone #: LAUREN SANDEFUR 812.213.1328
 EMAIL ADDRESS: LAUREN.SANDEFUR@METRONETINC.COM
 Authorized Signatures & Date: *Lauren Sandefur*

721989721-00033
 BILL METRONET: 23 18 \$ 2682.21
 FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & make-ready MUST BE PAID IN FULL UP FRONT.
 NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12					
Windstream Lead & Structure No. (Pole No.)	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to complete	Height of lowest power cable	Hgt of other attachments on pole	# & type of Attachments	Height Licensee to attach at	Licensee Work Description	Windstream To Complete	Windstream To Complete	Bill for Rent Y or N
1	21082-1064	13W	1080 S BROADWAY, 204, Lexington, KY 40304, WXXM	20'1"	N/A	21'10"	(1)Fiber/Strand	18'5"	1 Pole + WS lower	WS lower	YES					
2	21082-1092	14W	1080 S BROADWAY, 204, Lexington, KY 40306, WXXM	21'5"	N/A	22'5"	(1)Fiber/Strand	22'8"	No MR	WS lower						
3	21082-1094	15W	1080 S BROADWAY, 301, Lexington, KY 40306, WXXM	21'8"	N/A	N/A	(1)Fiber/Strand	22'8"	WS lower	WS lower						
4	21082-1098	16W	1080 S BROADWAY, 301, Lexington, KY 40354, WXXM	26'3"	N/A	N/A	(1)Fiber/Strand	24'10"	WS lower	WS lower						
5	NT	17W	1080 S BROADWAY, 240, Lexington, KY 40354, WXXM	26'4"	N/A	N/A	(1)Fiber/Strand	25'6"	WS lower	WS lower						
6	21082-1110	18W	1100 S BROADWAY, Lexington, KY 40507, WXXM	21'2"	N/A	24'7"	(1)Fiber/Strand	21'2"	WS lower	WS lower						
7	21082-1112	19W	1112 S BROADWAY, Lexington, KY 40507, WXXM	21'9"	N/A	23'2"	(1)Fiber/Strand	22'2"	1 Pole + WS lower	1 Pole + WS lower						
8																

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream Joint/Sec@Windstream.com
 Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

6/27/18

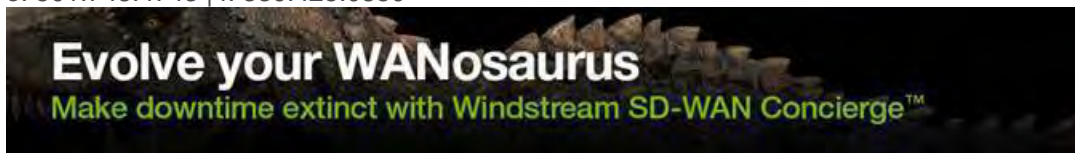
From: Hodges, Felicia N
Sent: Tuesday, July 03, 2018 11:21 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4229 LX02501W
Attachments: Exhibit B - MetroNet JU4229 LX02501W.pdf

Lauren,

Please see the following attachment for the approval to the application above. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Tuesday, July 3, 2018 7:47 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: Exhibit B - MetroNet JU4229 LX02501W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 4229
MetroNet package: LX02501W
JobTrac #: 21900069181353
Cost for MRC to bill MetroNet: \$1561.97

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

JUPR4229

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

13 - TOTAL POLES
5 - NEED MR (lower 6 att, 1 drop, + 1 OHG)
8 - NO MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX025-01W

219000691-81353 LXEK

BILL METRANET:
\$1561.97

FOR MAKE READY

Name of Firm Applying: CMN-RUS - INC
Contact Name, Phone #: Lauren Sandefur 812.213.1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
Authorized Signature & Date:

Lauren Sandefur 6.4.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
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NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	33437-06055	20W • 4805 KEENE RD, Lexington, KY 40513	40/4, WXM	22'1"	N/A	26'3"		(1)Fiber/Strand	22'4"	WS to lower	YES
2	35062-06277	28W • 4508 OLDE BRIDGE CT, Lexington, KY 40	40/4, WXM	20'2"	N/A	25'0"		(1)Fiber/Strand	20'6"	WS to lower	
3	1107-8	30W 2595 MILITARY PIKE, Lexington, KY 40513	40/3, WXM	23'6"	N/A	30'5"		(2)Fiber/Strand	26'1"	NO MR	
4	33938-06350	31W 2630 MILITARY PIKE, Lexington, KY 40513	40/3, WXM	20'5"	N/A	28'3"		(3)Fiber/Strand	22'4"	"	
5	NT	32W 2630 MILITARY PIKE, Lexington, KY 40513	35/4, WXM	19'10"	N/A	24'4"		(1)Fiber/Strand	18'6"	"	
6	33686-06402	33W 4751 KEENE RD, Lexington, KY 40513	35/4, WXM	17'3"	N/A	23'3"		(1)Fiber/Strand	18'3"	"	
7	1107-12	CATV 34W • ATT 4751 KEENE RD, Lexington, KY 40513	40/4, WXM	20'7"	20'9"	27'11"		(1)Fiber/Strand	24'9"	CATV to lower H	
8	1107-13	35W 2651 MILITARY PIKE, Lexington, KY 40513	30/4, WXM	22'3"	N/A	N/A		(1)Fiber/Strand	24'3"	NO MR	
9	NT	36W 2680 MILITARY PIKE, Lexington, KY 40513	35/5, WXM	22'0"	N/A	N/A		(1)Fiber/Strand	24'2"	"	
10	NT	37W • 2680 MILITARY PIKE, Lexington, KY 40513	30/4, WXM	23'2"	N/A	N/A		(1)Fiber/Strand	24'6"	WS to lower	
11	NT	38W 2680 MILITARY PIKE, Lexington, KY 40513	30/4, WXM	22'6"	N/A	N/A		(1)Fiber/Strand	25'4"	NO MR	
12	1107-17	39W • 2761 MILITARY PIKE, Lexington, KY 40513	30/4, WXM	24'4"	N/A	N/A		(1)Fiber/Strand	25'3"	WS to lower	
13	1107-18	40W 2761 MILITARY PIKE, Lexington, KY 40513	30/4, WXM	22'8"	N/A	N/A		(1)Fiber/Strand	24'9"	NO MR	
14											

ESTIMATED TOTAL COSTS

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com
Windstream OSP Construction Manager/Engineer Authorized Signature & Date: *A J A* 7/2/18

A CANNOT ATTACH TO 34W UNTIL SPECTRUM DOES THEIR WORK 1ST

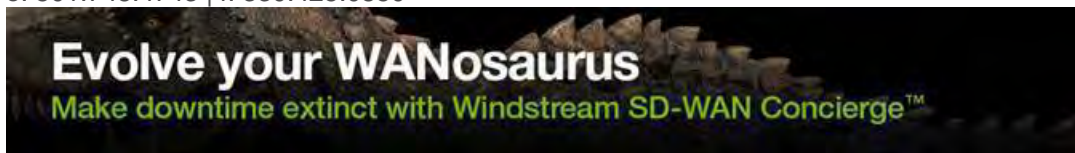
From: Hodges, Felicia N
Sent: Tuesday, July 03, 2018 11:29 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4295 LX04702W
Attachments: Exhibit B - MetroNet JU4295 LX04702W.pdf

Lauren,

Please see the following attachment for the approval to the application above. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Tuesday, July 3, 2018 7:49 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: Exhibit B - MetroNet JU4295 LX04702W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 4295
MetroNet package: LX04702W
JobTrac #: 21900069181355
Cost for MRC to bill MetroNet: \$5459.37

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

JUPR4295

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

21 - TOTAL POLES

11 - Need MR (lower 26 att + 11dg)

10 - No MR

EXHIBIT B

PROPOSAL #:

LX047-02W

Windstream CORPORATION
APPLICATION FOR POLE LICENSE

Submit in Duplicate

219000691-81355 LXSE

BILL METRONET:

\$5459.37

Name of Firm Applying:

CMN-RUS, INC

Contact Name,
Phone #

Lauren Sandefur 812.213.1328

EMAIL ADDRESS

lauren.sandefur@metronetinc.com

Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

LSandefur 6.5.2018 FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	L700-P39	1W •	4904 HARTLAND PKWY, Lexington, KY 40	45/3, WXM	25'0"	N/A	29'9"	(1)Fiber/Strand	26'	WS to lower	YES
2	L20314-P1	2W •	4906 HARTLAND PKWY, Lexington, KY 40	50/2, WXM	24'0"	N/A	28'4"	(1)Fiber/Strand	25'	WS to lower	
3	L20324-P2	3W	4906 HARTLAND PKWY, Lexington, KY 40	45/3, WXM	24'1"	N/A	30'10"	(1)Fiber/Strand	27'3"	NOMR	
4	#####	4W	2300 ELMSRING WAY, Lexington, KY 40	45/3, WXM	24'6"	N/A	31'5"	(1)Fiber/Strand	27'8"	"	
5	20134-3	5W	2161 BROADHEAD PL, Lexington, KY 405	45/3, WXM	24'2"	N/A	30'10"	(1)Fiber/Strand	27'3"	"	
6	L02314-P4	6W	2161 BROADHEAD PL, Lexington, KY 405	45/3, WXM	19'6"	N/A	29'11"	(2)Fiber/Strand	23'	"	
7	NT	7W	2161 BROADHEAD PL, Lexington, KY 405	45/3, WXM	19'3"	N/A	28'10"	(1)Fiber/Strand	24'	"	
8	NT	8W	2169 BROADHEAD PL, Lexington, KY 405	45/3, WXM	21'11"	N/A	27'8"	(1)Fiber/Strand	23'11"	"	
9	NT	9W	2177 BROADHEAD PL, Lexington, KY 405	50/3, WXM	26'6"	N/A	32'2"	(1)Fiber/Strand	28'6"	"	
10	NT	10W	5004 MARCHMONT WAY, Lexington, KY 4	45/3, WXM	22'8"	N/A	31'1"	(1)Fiber/Strand	25'5"	"	
11	29120-2428	11W	2140 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	21'2"	N/A	28'2"	(1)Fiber/Strand	24'8"	"	
12	29129	12W	2140 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	18'11"	N/A	26'4"	(2)Fiber/Strand	21'3"	"	
13	29129-2414	13W •	2140 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	19'9"	N/A	24'0"	(1)Fiber/Strand	20'9"	WS to lower	
14	29129-2404	14W •	2136 LEAFLAND PL, Lexington, KY 40515	50/3, WXM	24'8"	N/A	28'8"	(1)Fiber/Strand	24'	WS to lower	
15	NT	15W •	2132 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	23'9"	N/A	27'4"	(1)Fiber/Strand	23'6"	WS to lower	

16	29219-3625	16W •	2120 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	24'9"	N/A	27'4"		(1)Fiber/Strand	23.6"	WS to lower	YES
17	113669	17W •	2112 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	24'11"	N/A	27'7"		(1)Fiber/Strand	23.6"	"	✓
18	113667	18W •	2108 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	26'9"	N/A	30'10"		(2)Fiber/Strand	26.6"	"	✓
19	NT	19W •	2104 LEAFLAND PL, Lexington, KY 40515	45/3, WXM	23'8"	N/A	28'0"		(2)Fiber/Strand	24"	"	✓
20	NT	20W •	5080 TATES CREEK RD, Lexington, KY 40	50/2, WXM	26'7"	N/A	30'6"		(1)Fiber/Strand	26.6"	"	✓
21	NT	21W •	5036 CASTLE LAWN PL, Lexington, KY 40	60/2, WXM	35'8"	N/A	39'0"		(1)Fiber/Strand	35.8"	"	✓
ESTIMATED TOTAL COSTS												✓
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

for all 7/2/18

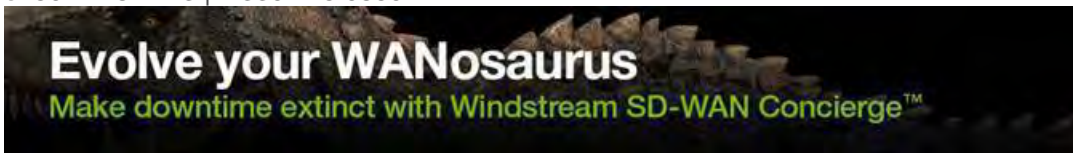
From: Hodges, Felicia N
Sent: Thursday, July 19, 2018 4:51 PM
To: Lauren Sandefur
Cc: Permits
Subject: FW: Exhibit B - MetroNet JU4297 LXFR0705W
Attachments: Exhibit B - MetroNet JU4297 LXFR0705W.pdf

Lauren,

The above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Thursday, July 19, 2018 3:02 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU4297 LXFR0705W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 4297
MetroNet package: LXFR0705W
JobTrac #: 21900069181430
Cost for MRC to bill MetroNet: \$3587.11

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505
ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 - TOTAL POLES
 12 - Need MR (lower 15 att + 7 dg)
 13 - No MR

EXHIBIT B
 Windstream CORPORATION
 APPLICATION FOR POLE LICENSE

PROPOSAL #:
 Submit in Duplicate

LX-FR07-05W LXSE

219000691-81430

BILL METRONET:

\$3,587.11

FOR MAKE READY

Name of Firm Applying: CMN-RUS, INC
 Contact Name, Phone #: LAUREN SANDEFUR 812.213.1328
 EMAIL ADDRESS: LAURENS.ANDEFUR@METRONETINC.COM

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
 Authorized Signature & Date: L. Sandefur 6/5/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL, UP FRONT.
 NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
 NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	2777-120902	78W ✓	4828 CLIFFORD CIR, Lexington, KY 40515	45/3, WXM	22'9"	23'1"	25'8"	(1)Fiber/Strand	22'4"	WS to lower	YES
2	NT	79W ✓	4844 CLIFFORD CIR, Lexington, KY 40515	45/3, WXM	20'0"	20'3"	24'7"	(1)Fiber/Strand	21'	"	
3	27774-120906	80W ✓	1205 KENESAW VILLAGE DR, Lexington, KY 40515	45/3, WXM	21'0"	N/A	22'10"	(1)Fiber/Strand	19'6"	"	
4	NT	81W ✓	3940 KENESAW DR, Lexington, KY 40515	45/3, WXM	23'0"	N/A	26'8"	(2)Fiber/Strand	23'	"	
5	21573-4801	82W ✗	3944 KENESAW DR, Lexington, KY 40515	45/2, WXM	23'4"	N/A	27'3"	(1)Fiber/Strand	23'4"	NO MR	
6	21573-4809	83W ✓	3960 KENESAW DR, Lexington, KY 40515	45/4, WXM	N/A	N/A	23'2"	(1)Fiber/Strand	22'9"	"	
7	21573-487	84W ✓	4817 CHELMSBURY LN, Lexington, KY 40	45/4, WXM	N/A	N/A	23'10"	(1)Fiber/Strand	20'6"	"	
8	NT	85W ✓	4004 KENESAW DR, Lexington, KY 40515	45/2, WXM	N/A	N/A	24'5"	(1)Fiber/Strand	21'1"	"	
9	NT	86W ✓	4020 KENESAW DR, Lexington, KY 40515	45/4, WXM	N/A	N/A	23'10"	(1)Fiber/Strand	20'6"	"	
10	NT	87W ✓	4040 KENESAW DR, Lexington, KY 40515	45/3, WXM	N/A	N/A	29'7"	(1)Fiber/Strand	24'8"	"	
11	NT	88W ✓	4052 KENESAW DR, Lexington, KY 40515	45/2, WXM	N/A	N/A	29'3"	(1)Fiber/Strand	25'3"	"	
12	NT	89W ✓	4084 KENESAW DR, Lexington, KY 40515	45/2, WXM	N/A	N/A	27'9"	(2)Fiber/Strand	24'1"	"	
13	NT	90W ✓	1121 MCATEE RUN, Lexington, KY 40515	45/3, WXM	20'3"	N/A	22'1"	(1)Fiber/Strand	18'9"	WS to lower	
14	NT	91W ✓	1125 MCATEE RUN, Lexington, KY 40515	45/3, WXM	21'10"	N/A	26'2"	(1)Fiber/Strand	22'10"	"	
15	2153-48655	92W ✓	4857 CHELMSBURY LN, Lexington, KY 40	45/3, WXM	25'11"	N/A	30'8"	(1)Fiber/Strand	27'4"	"	
16	21067-42	93W ✓	4909 MCATEE LN, Lexington, KY 40515	45/3, WXM	27'6"	N/A	31'3"	(1)Fiber/Strand	27'2"	"	
17	NT	94W ✓	2117 BROADHEAD PL, Lexington, KY 405	45/3, WXM	23'6"	N/A	28'0"	(2)Fiber/Strand	23'10"	"	
18	NT	95W ✓	2117 BROADHEAD PL, Lexington, KY 405	45/3, WXM	N/A	N/A	30'9"	(1)Fiber/Strand	27'5"	Attach - No MR	
19	21067-2113	96W ✓	4909 MCATEE LN, Lexington, KY 40515	45/3, WXM	20'4"	N/A	28'5"	(1)Fiber/Strand	22'7"	NO MR	

20	21067-2105	97W ✓	2101 BROADHEAD PL, Lexington, KY 405	45/3, WXM	23'6"	N/A	27'10"		(1)Fiber/Strand	24'6"	WS to lower	YES
21	21067-2101	98W ✓	4987 TYNEBRAE RD, Lexington, KY 40518	45/3, WXM	20'11"	N/A	26'1"		(1)Fiber/Strand	22'7"	"	
22	1871019	99W	4987 TYNEBRAE RD, Lexington, KY 40518	45/3, WXM	21'6"	N/A	27'4"		(1)Fiber/Strand	23'6"	NO MR	}
23	29127-4	✓ 100W	2108 WOODBRIDGE WAY, Lexington, KY	45/3, WXM	N/A	N/A	29'9"		(1)Fiber/Strand	25'6"	Attach - NO MR	
24	NT	101W	2109 WOODBRIDGE WAY, Lexington, KY	45/3, WXM	21'3"	N/A	27'11"		(1)Fiber/Strand	24'7"	NO MR	}
25	29127-2	102W ✓	4946 CASTLE LAWN PL, Lexington, KY 40	45/3, WXM	24'5"	N/A	25'10"		(1)Fiber/Strand	24'6"	WS to lower	
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 7/19/18

From: Hodges, Felicia N
Sent: Monday, August 13, 2018 4:07 PM
To: 'Lauren Sandefur'
Subject: FW: Exhibit B - MetroNet JU4298 LXFR0706W
Attachments: Exhibit B - MetroNet JU4298 LXFR0706W.pdf

Approved

From: Sanders, Ashley L
Sent: Monday, August 13, 2018 9:01 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU4298 LXFR0706W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 4298

MetroNet package: LXFR0706W

JobTrac #: 72198972100034

Cost for MRC to bill MetroNet: \$10,643.94

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25- TOTAL POLES

- Need MR (1 pole at 69 lower att + 8dg)

- No MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #: **LX-FR07-06W**

LXSE

Submit in Duplicate

721989721-00034

Bill METRONET:
\$10,643.94

Name of Firm Applying: CMN-RUS, INC
Contact Name, Phone #: LAUREN SANDEFUR 812.213.1328
EMAIL ADDRESS: LAUREN.SANDEFUR@METRONETINC.COM

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
Authorized Signature & Date:

lsandefur 6.6.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project. If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT. NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	29127-1	Att 103W	4946 CASTLE LAWN PL, Lexington, KY 40	55/2, WXM	N/A	N/A	35'6"	(1)Fiber/Strand	32'10"	NO MR, pole XX WS to lower	YES
2	61893-96145	117W ✓	4380 JASMINE ROSE WAY, Lexington, KY	45/2, WXM	26'8"	N/A	31'5"	(1)Fiber/Strand	28'1"	"	}
3	61823-96107	118W ✓	1099 DUVAL ST, 180, Lexington, KY 40518	45/3, WXM	20'7"	N/A	24'10"	(1)Fiber/Strand	21'6"	"	
4	22045-1-70	119W ✓	1099 DUVAL ST, 170, Lexington, KY 40518	45/3, WXM	20'6"	N/A	23'6"	(1)Fiber/Strand	20'1"	"	
5	61690-96032	120W ✓	1099 DUVAL ST, 140, Lexington, KY 40518	45/2, WXM	24'7"	N/A	29'6"	(1)Fiber/Strand	26'1"	"	
6	61583-95932	121W	981 CHAS DR, Lexington, KY 40515	50/2, WXM	25'3"	N/A	31'8"	(1)Fiber/Strand	28'4"	NO MR WS to lower	
7	61385-95853	122W ✓	4301 CHAS CIR, Lexington, KY 40515	50/2, WXM	25'1"	N/A	30'8"	(1)Fiber/Strand	27'3"	"	
8	61280-95800	123W ✓	4309 CHAS CIR, Lexington, KY 40515	45/2, WXM	24'0"	N/A	27'6"	(1)Fiber/Strand	24'	"	
9	61141-95722	125W ✓	1045 HIGHGROVE CIR, 101, Lexington, KY	45/2, WXM	24'6"	N/A	28'5"	(1)Fiber/Strand	25'1"	"	
10	61005-95644	126W ✓	1040 HIGHGROVE CIR, 101, Lexington, KY	45/2, WXM	24'9"	N/A	28'11"	(1)Fiber/Strand	25'5"	"	
11	60871-95568	127W ✓	1020 HIGHGROVE CIR, 101, Lexington, KY	45/2, WXM	23'11"	N/A	28'5"	(1)Fiber/Strand	24'11"	"	
12	60758-95504	128W ✓	1000 HIGHGROVE CIR, 103, Lexington, KY	50/2, WXM	24'2"	N/A	29'0"	(1)Fiber/Strand	25'7"	"	
13	60624-95429	129W ✓	4273 SARON DR, Lexington, KY 40515	45/2, WXM	24'10"	N/A	31'3"	(1)Fiber/Strand	29'11"	"	
14	60597-95411	130W	4273 SARON DR, Lexington, KY 40515	45/2, WXM	24'5"	N/A	29'11"	(1)Fiber/Strand	28'11"	NO MR WS to lower	
15	60490-96354	131W ✓	4269 SARON DR, Lexington, KY 40515	50/2, WXM	23'0"	N/A	27'11"	(1)Fiber/Strand	24'7"	NO MR	
16	60350-95275	132W	981 FIDDLER CREEK WAY, Lexington, KY	45/2, WXM	25'5"	N/A	30'1"	(1)Fiber/Strand	28'9"	"	
17	22045-00013	133W	973 FIDDLER CREEK WAY, Lexington, KY	45/2, WXM	24'5"	N/A	31'0"	(1)Fiber/Strand	27'6"	"	
18	22045-00014	134W	965 FIDDLER CREEK WAY, Lexington, KY	50/2, WXM	26'3"	N/A	32'10"	(1)Fiber/Strand	30'2"	"	
19	22045-00015	135W	961 FIDDLER CREEK WAY, Lexington, KY	45/2, WXM	23'6"	N/A	30'9"	(1)Fiber/Strand	26'5"	"	

20	22045-00016	136W	816 SPRINGWATER CIR, Lexington, KY 40	45/2, WXM	24'9"	N/A	31'8"	(1)Fiber/Strand	27'8"	NO MR	YES
21	22045-00017	137W ✓	816 SPRINGWATER CIR, Lexington, KY 40	45/3, WXM	26'3"	N/A	29'8"	(1)Fiber/Strand	26'3"	WS to lower	}
22	NT	138W ✓	808 SPRINGWATER CIR, Lexington, KY 40	45/2, WXM	25'2"	N/A	28'8"	(1)Fiber/Strand	25'2"	"	
23	22045-00019	139W ✓	713 CLAYVIS CT, Lexington, KY 40515	45/2, WXM	25'4"	N/A	29'6"	(1)Fiber/Strand	25'4"	"	
24	22045-00020	140W ✓	4132 SPRINGWATER DR, Lexington, KY 4	45/2, WXM	26'0"	N/A	29'1"	(1)Fiber/Strand	25'8"	"	
25	NT	141W ✓	4170 CLEARWATER WAY, Lexington, KY	45/2, WXM	23'10"	N/A	28'6"	(1)Fiber/Strand	24'6"	PI POLE + XFEL	
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

JA LRL 8/13/18

* Now Windstream Poles at below locations added inline.
 Win. Cannot do work on these poles until K.U. attaches.
Win #

22045/6.50

22045/7.50

(Poles stamped w/K.U., but w/this being WIN
 Pole Route, WIN should have set these poles...)

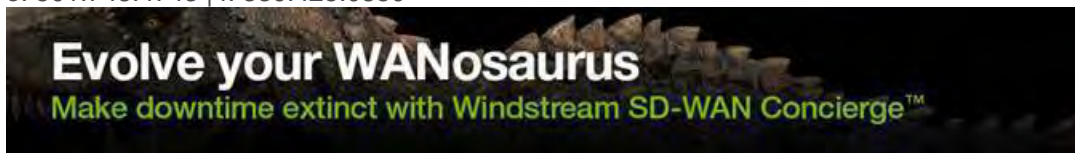
From: Hodges, Felicia N
Sent: Tuesday, July 03, 2018 11:30 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4300 LXFR0707W
Attachments: Exhibit B - MetroNet JU4300 LXFR0707W.pdf

Lauren,

Please see the following attachment for the approval to the application above. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Tuesday, July 3, 2018 7:51 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: Exhibit B - MetroNet JU4300 LXFR0707W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 4300
MetroNet package: LXFR0707W
JobTrac #: 21900069181358
Cost for MRC to bill MetroNet: \$4298.35

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 - TOTAL POLES
 12 - Need MR (lower 30 att + 1 drop)
 13 - No MR

EXHIBIT B
 Windstream CORPORATION
 APPLICATION FOR POLE LICENSE

PROPOSAL #: **LX-FR07-07W**
 Submit in Duplicate
 219000691-81358 LXSE
 BILL METRONET:
 \$ 4298.35

Name of Firm Applying: CMN-RUS, INC Contact Name: Lauren Sandefur 812.213.1328
 Phone #: Lauren Sandefur 812.213.1328
 EMAIL ADDRESS: lauren.sandefur@metronetinc.com
 Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: Lauren Sandefur 6/6/18

FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
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Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	NT	4165 CLEARWATER WAY, Lexington, KY	40/4, WXM	20'0"	N/A	24'0"		(1)Fiber/Strand	22'	WS to lower	YES
2	22045-00023	612 SPRINGVIEW CIR, Lexington, KY 405	45/2, WXM	23'9"	N/A	28'6"		(1)Fiber/Strand	25'2"	"	
3	22045-00024	604 SPRINGVIEW CIR, Lexington, KY 405	45/2, WXM	24'9"	N/A	28'8"		(1)Fiber/Strand	25'2"	"	
4	22045-00025	721 SORRENTO LN, Lexington, KY 40516	45/2, WXM	25'6"	N/A	28'8"		(1)Fiber/Strand	24'6"	"	
5	22045-00026	4205 WATERTRACE DR, Lexington, KY 40	45/3, WXM	25'8"	N/A	27'8"		(1)Fiber/Strand	24'4"	"	
6	22045-7	705 SORRENTO LN, Lexington, KY 40515	50/2, WXM	26'6"	N/A	30'10"		(1)Fiber/Strand	27'6"	"	
7	22046-1	705 SORRENTO LN, Lexington, KY 40515	40/3, WXM	17'7"	N/A	23'10"		(1)Fiber/Strand	20'6"	NO MR	
8	22046-2	681 EMMETT CREEK LN, Lexington, KY 4	45/3, WXM	21'10"	N/A	26'2"		(1)Fiber/Strand	22'10"	WS to lower	
9	22046-3	701 PINNACLE CT, Lexington, KY 40515	45/3, WXM	20'4"	N/A	28'5"		(1)Fiber/Strand	23'3"	NO MR	
10	22046-4	721 EMMETT CREEK LN, Lexington, KY 4	45/3, WXM	23'2"	N/A	28'0"		(1)Fiber/Strand	24'8"	WS to lower	
11	22046-5	720 EMMETT CREEK LN, Lexington, KY 4	50/2, WXM	N/A	N/A	26'11"		(1)Fiber/Strand	23'7"	"	
12	22046-6	720 EMMETT CREEK LN, Lexington, KY 4	45/3, WXM	25'7"	N/A	31'0"		(1)Fiber/Strand	27'	"	
13	26664-700	701 ROSE HURST WAY, Lexington, KY 40	45/3, WXM	23'8"	N/A	29'9"		(1)Fiber/Strand	25'9"	"	
14	26664-699	700 ROSE HURST WAY, Lexington, KY 40	45/3, WXM	19'9"	N/A	29'1"		(1)Fiber/Strand	23'	NO MR	
15	26664-688	688 POPLAR SPRINGS LN, Lexington, KY	40/3, WXM	20'11"	N/A	28'3"		(1)Fiber/Strand	24'1"	WS to lower	
16	26664-686	504 HAWKS NEST PT, Lexington, KY 405	45/3, WXM	21'0"	N/A	36'2"		(1)Fiber/Strand	25'	NO MR	
17	26664-684	684 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	20'6"	N/A	27'9"		(1)Fiber/Strand	24'	"	
18	26664-680	684 POPLAR SPRINGS LN, Lexington, KY	45/3, WXM	19'6"	N/A	29'10"		(1)Fiber/Strand	22'8"	"	
19	26664-676	676 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	21'5"	N/A	31'11"		(1)Fiber/Strand	25'	"	

20	26664-664	161W	688 POPLAR SPRINGS LN, Lexington, KY	65/2, WXM	32'6"	N/A	44'8"	(1)Fiber/Strand	35.6"	NO MR	YES
21	26664-656	162W	656 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	25'2"	N/A	35'11"	(1)Fiber/Strand	27.5"	"	}
22	NT	163W	652 POPLAR SPRINGS LN, Lexington, KY	55/2, WXM	22'7"	N/A	32'7"	(1)Fiber/Strand	25'	"	
23	NT	164W	644 POPLAR SPRINGS LN, Lexington, KY	60/2, WXM	28'6"	N/A	42'10"	(1)Fiber/Strand	30.7"	"	
24	26664-632	165W	638 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	19'8"	N/A	34'11"	(1)Fiber/Strand	21.8"	"	
25	26664-628	166W	628 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	18'1"	N/A	33'8"	(1)Fiber/Strand	20.3"	"	
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 7/2/18

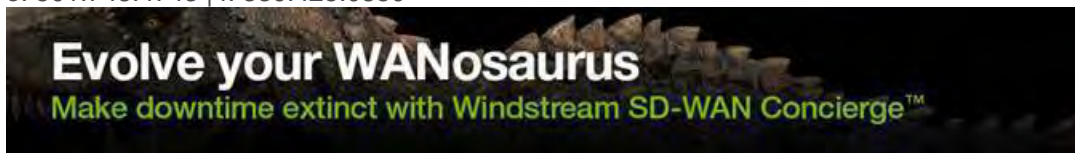
From: Hodges, Felicia N
Sent: Tuesday, July 03, 2018 11:31 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4301 LXFR0708W
Attachments: Exhibit B - MetroNet JU4301 LXFR0708W.pdf

Lauren,

Please see the following attachment for the approval to the application above. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Tuesday, July 3, 2018 7:52 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: Exhibit B - MetroNet JU4301 LXFR0708W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 4301

MetroNet package: LXFR0708W

JobTrac #: 21900069181359

Cost for MRC to bill MetroNet: \$4124.49

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25-TOTAL POLES
15- Need MR (lower 31 att)
10- NO MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX-FR07-08W

Submit in Duplicate

219000691-81359 LXSE
BILL METRONET:
\$4124.49
FOR MAKE READY

Name of Firm Applying: CMN-RUS, INC
Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715

Contact Name, Phone #: Lauren Snadefur 812.213.1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Authorized Signature & Date:

Lauren Snadefur 6.6.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.

If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.

NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	28664-616	167W	828 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	21'4"	N/A	33'2"	(1)Fiber/Strand	23'7"	NO MR	YES
2	26664-608	168W	820 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	21'8"	N/A	30'3"	(1)Fiber/Strand	23'9"	"	"
3	26664-604	169W	612 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	22'5"	N/A	32'3"	(1)Fiber/Strand	24'6"	"	"
4	26664-636	170W	804 POPLAR SPRINGS LN, Lexington, KY	50/2, WXM	23'0"	N/A	32'5"	(1)Fiber/Strand	25'	"	"
5	26664-600	171W	800 POPLAR SPRINGS LN, Lexington, KY	55/2, WXM	25'1"	N/A	46'5"	(1)Fiber/Strand	27'1"	"	"
6	2112-4373	172W	4373 BROOKRIDGE DR, Lexington, KY 40	50/2, WXM	21'9"	N/A	33'4"	(2)Fiber/Strand	24'3"	"	"
7	NT	173W	481 WHITFIELD DR, Lexington, KY 40515	45/2, WXM	24'8"	N/A	31'3"	(1)Fiber/Strand	26'11"	"	"
8	20158-401-30	174W	481 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	19'8"	N/A	24'1"	(2)Fiber/Strand	20'4"	WS to lower	"
9	28857-481	175W	477 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	21'0"	N/A	24'10"	(1)Fiber/Strand	21'	"	"
10	28857-469	176W	469 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	22'3"	N/A	26'3"	(1)Fiber/Strand	22'3"	"	"
11	28857-457	177W	461 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	20'0"	N/A	23'6"	(1)Fiber/Strand	20'	"	"
12	28857-449	178W	4329 CRESCENT SPRINGS CT, Lexington	40/3, WXM	20'0"	N/A	25'4"	(1)Fiber/Strand	22'	NO MR	"
13	28857-441	179W	445 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	19'9"	N/A	25'4"	(1)Fiber/Strand	22'	"	"
14	28857-433	180W	437 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	20'2"	N/A	22'5"	(1)Fiber/Strand	19'1"	WS to lower	"
15	28857-425	181W	429 WHITFIELD DR, Lexington, KY 40515	45/3, WXM	23'3"	N/A	25'9"	(1)Fiber/Strand	24'9"	"	"
16	28857-421	182W	421 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	21'7"	N/A	25'11"	(1)Fiber/Strand	22'7"	"	"
17	NT	183W	413 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	19'8"	N/A	24'6"	(1)Fiber/Strand	21'2"	"	"
18	28857-405	184W	405 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	20'7"	N/A	24'2"	(1)Fiber/Strand	20'10"	"	"
19	28857-387	185W	397 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	19'10"	N/A	25'3"	(1)Fiber/Strand	20'11"	NO MR	"

20	28857-389	186W •	389 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	21'7"	N/A	26'2"		{1}Fiber/Strand	22'	WS to lower	YES
21	28857-381	187W •	377 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	20'8"	N/A	24'0"		{1}Fiber/Strand	20'8"	u	
22	28857-373	188W •	373 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	22'0"	N/A	26'9"		{1}Fiber/Strand	23'5"	u	
23	28857-365	189W •	365 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	20'9"	N/A	25'1"		{1}Fiber/Strand	21'9"	u	
24	NT	190W •	353 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	20'9"	N/A	24'1"		{1}Fiber/Strand	20'9"	u	
25	28857-349	191W •	440 MEADOWCREST PARK, Lexington, KY	40/3, WXM	21'3"	N/A	25'3"		{1}Fiber/Strand	22'6"	u	
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

ASJ LK 7/2/18

From: Hodges, Felicia N
Sent: Friday, August 10, 2018 4:36 PM
To: 'Lauren Sandefur'
Subject: FW: Exhibit B - MetroNet JU4450 LXFR0709W
Attachments: Exhibit B - MetroNet JU4450 LXFR0709W.pdf

Lauren,

The above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Friday, August 10, 2018 2:12 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU4450 LXFR0709W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 4450

MetroNet package: LXFR0709W

JobTrac #: 72198972100035

Cost for MRC to bill MetroNet: \$6943.63

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 - TOTAL POLES
 18 - Need MR (lower 36 att + 8dg + 1 pole)
 7 - No MR

EXHIBIT B
 Windstream CORPORATION
 APPLICATION FOR POLE LICENSE

PROPOSAL #:
 Submit in Duplicate

LX-FR07-09W

721989721-00035 LXSE

BILL METRONET:
 \$6,943.63

Name of Firm Applying: CMN-RUS, INC
 Contact Name, Phone #: LAUREN SANDEFUR 812.213.1328
 EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
 Authorized Signature & Date: LSandefur 6.6.18

FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
 NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
 NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	28857-345	192W ✓	345 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	21'0"	20'0"	25'5"	(1)Fiber/Strand	22'	WS to lower	YES
2	28857-337	193W ✓	341 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	20'4"	N/A	24'4"	(1)Fiber/Strand	21'	"	
3	NT	194W ✓	420 MEADOWCREST PARK, Lexington, K	40/3, WXM	20'0"	20'7"	22'8"	(1)Fiber/Strand	19'4"	"	
4	28857-321	195W ✓	408 MEADOWCREST PARK, Lexington, K	40/3, WXM	20'3"	20'10"	24'8"	(1)Fiber/Strand	21'3"	"	
5	28857-313	196W ✓	400 MEADOWCREST PARK, Lexington, K	40/3, WXM	18'9"	18'9"	21'4"	(1)Fiber/Strand	18'	"	
6	28857-301	197W ✓	388 MEADOWCREST PARK, Lexington, K	40/3, WXM	18'9"	19'3"	21'0"	(1)Fiber/Strand	17'8"	"	
7	28857-310	198W ✓	301 WHITFIELD DR, Lexington, KY 40515	40/3, WXM	19'5"	19'11"	23'0"	(1)Fiber/Strand	19'5"	"	
8	28857-241	199W ✓	301 WHITFIELD DR, Lexington, KY 40515	45/3, WXM	23'2"	N/A	30'9"	(1)Fiber/Strand	25'2"	NO MR	
9	28857-241	200W ✓	372 MEADOWCREST PARK, Lexington, K	40/3, WXM	18'6"	N/A	22'7"	(1)Fiber/Strand	19'	WS to lower	
10	28857-217	203W ✓	4500 SHADY SPRINGS CT, Lexington, KY	40/3, WXM	N/A	N/A	26'2"	(1)Fiber/Strand	21'7"	attach only	
11	28857-10025	208W ✓	4500 PRINCE ALBERT WAY, Lexington, K	40/3, WXM	19'7"	N/A	25'3"	(1)Fiber/Strand	21'11"	NO MR	
12	21415-4505	207W ✓	4501 PRINCE ALBERT WAY, Lexington, K	40/3, WXM	19'8"	N/A	22'10"	(1)Fiber/Strand	19'4"	WS to lower	
13	20415-4503	210W ✓	108 HIDDEN WOODS CT, Lexington, KY 4	35/4, WXM	17'4"	N/A	20'11"	(1)Fiber/Strand	17'4"	"	
14	21415-4505	211W ✓	4505 CARRIE CIR, Lexington, KY 40516	40/3, WXM	19'6"	19'3"	25'0"	(1)Fiber/Strand	21'4"	NO MR	
15	21415-117	212W ✓	117 CARRIE CT, Lexington, KY 40516	40/3, WXM	20'1"	19'6"	24'0"	(2)Fiber/Strand	19'9"	WS to lower	
16	NT	213W ✓	4484 OLD NICHOLASVILLE RD, Lexington	40/3, WXM	19'3"	18'10"	23'10"	(1)Fiber/Strand	20'6"	"	
17	NT	214W ✓	105 CARRIE CT, Lexington, KY 40515	40/3, WXM	19'11"	N/A	24'3"	(1)Fiber/Strand	20'11"	"	
18	NT	215W ✓	105 CARRIE CT, Lexington, KY 40515	40/3, WXM	22'0"	N/A	26'2"	(2)Fiber/Strand	22'6"	PI Pole + lower	
19	NT	216W ✓	105 CARRIE CT, Lexington, KY 40515	45/3, WXM	26'2"	N/A	29'4"	(1)Fiber/Strand	30'	NO MR	

20	L2012-P2	246W ✓	127 TIVERTON WAY, Lexington, KY 40515	50/2, WXM	25'4"	N/A	28'8"	(1)Fiber/Strand	25.44	WS to lower	YES
21	L2012-P2-50	247W ✓	127 TIVERTON WAY, Lexington, KY 40515	50/2, WXM	20'9"	N/A	25'9"	(1)Fiber/Strand	22.54	"	
22	2012-3	248W ✓	127 TIVERTON WAY, Lexington, KY 40515	50/2, WXM	N/A	N/A	28'6"	(1)Fiber/Strand	25.24	WS to Attach	
23	L2012-P3-50	249W ✓	127 TIVERTON WAY, Lexington, KY 40515	50/2, WXM	24'7"	N/A	29'3"	(1)Fiber/Strand	25.74	WS to lower	
24	NT	250W ✓	127 TIVERTON WAY, Lexington, KY 40515	50/2, WXM	24'0"	N/A	27'4"	(1)Fiber/Strand	26.44	"	
25	L2012-P5	251W ✓	127 TIVERTON WAY, Lexington, KY 40515	45/3, WXM	23'0"	N/A	29'4"	(1)Fiber/Strand	26.0	No MA	
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

AK LPL 8/10/18

From: Hodges, Felicia N
Sent: Monday, August 13, 2018 4:07 PM
To: 'Lauren Sandefur'
Subject: FW: Exhibit B - MetroNet JU4451 LXFR0710W
Attachments: Exhibit B - MetroNet JU4451 LXFR0710W.pdf

Approved

From: Sanders, Ashley L
Sent: Monday, August 13, 2018 9:03 AM
To: WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>; Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU4451 LXFR0710W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 4451

MetroNet package: LXFR0710W

JobTrac #: 21900069181429

Cost for MRC to bill MetroNet: \$4791.51

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 - TOTAL POLES

6 - Need MR (6 AH + 14 lower + 6 OG/lands)

19 - No MR

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #:

LX-FR07-10W

Submit in Duplicate

219000691-81429 LXSE

BILL METRONET:

\$4,791.51

Name of Firm Applying:

GMN-RUS, INC

Contact Name,
Phone #

LAUREN SANDEFUR 812.213.1328

EMAIL ADDRESS

lauren.sandefur@metronetinc.com

Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

LSandefur 6.6.18 FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.

If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.

NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensor Work Description	Bill for Rent Y or N
1	L2012-P6	AH 252W	127 TIVERTON WAY, Lexington, KY 40516	50/2, WXM	24'6"	N/A	24'10"	(1)Fiber/Strand	27'7"	NO MR	YES
2	L2012-P7	253W +	3882 MALL RD, Lexington, KY 40516	50/2, WXM	25'9"	N/A	33'3"	(1)Fiber/Strand	29'5"	WS to lower	
3	2012-8	AH 254W	3882 MALL RD, Lexington, KY 40516	50/2, WXM	24'3"	N/A	27'10"	(1)Fiber/Strand	25'3"	u	
4	2012-9	255W	3882 MALL RD, Lexington, KY 40516	50/2, WXM	23'5"	N/A	27'11"	(1)Fiber/Strand	25'1"	u	
5	2012-10	AH 256W	3885 MALL RD, Lexington, KY 40516	50/2, WXM	22'5"	N/A	25'4"	(1)Fiber/Strand	25'7"	NO MR	
6	5781685	AH 257W	3851 MALL RD, Lexington, KY 40516	45/3, WXM	19'6"	N/A	25'11"	(2)Fiber/Strand	21'7"	WS to lower	
7	25501-1	AH 258W	3801 MALL RD, Lexington, KY 40516	50/2, WXM	23'1"	N/A	N/A	(2)Fiber/Strand	26'9"	NO MR	
8	25501-2	AH 259W	3801 MALL RD, Lexington, KY 40516	50/2, WXM	24'6"	N/A	N/A	(1)Fiber/Strand	27'8"	u	
9	28804-19	277W	3313 NICHOLASVILLE RD, Lexington, KY	45/3, WXM	22'9"	N/A	28'0"	(1)Fiber/Strand	24'7"	u	
10	28804-18	278W	3313 NICHOLASVILLE RD, Lexington, KY	50/2, WXM	23'0"	N/A	33'5"	(1)Fiber/Strand	26'1"	u	
11	28804-17	279W	3313 NICHOLASVILLE RD, Lexington, KY	30/5, WXM	22'4"	N/A	N/A	(1)Fiber/Strand	24'4"	WS to lower	
12	28804-16	280W	3313 NICHOLASVILLE RD, Lexington, KY	35/4, WXM	17'10"	N/A	N/A	(1)Fiber/Strand	20'10"	NO MR	
13	28804-15	281W	131 REYNOLDS RD, Lexington, KY 40515	65/1, WXM	18'6"	N/A	27'0"	(1)Fiber/Strand	22'2"	u	
14	28804-14-5	282W	131 REYNOLDS RD, Lexington, KY 40515	50/2, WXM	16'6"	N/A	21'10"	(1)Fiber/Strand	18'5"	WS to lower	
15	28804 NT/14	283W	131 REYNOLDS RD, Lexington, KY 40515	50/2, WXM	19'5"	N/A	34'6"	(1)Fiber/Strand	22'10"	NO MR	
16	28804-13	284W	131 REYNOLDS RD, Lexington, KY 40515	55/2, WXM	22'6"	N/A	33'8"	(1)Fiber/Strand	25'8"	u	
17	28804-12	285W	131 REYNOLDS RD, Lexington, KY 40515	50/2, WXM	19'6"	N/A	39'9"	(1)Fiber/Strand	22'6"	u	
18	28804-11	286W	131 REYNOLDS RD, Lexington, KY 40515	40/3, WXM	19'2"	N/A	25'5"	(1)Fiber/Strand	21'5"	u	
19	28804-10	287W	131 REYNOLDS RD, Lexington, KY 40515	50/2, WXM	20'0"	N/A	24'9"	(2)Fiber/Strand	20'8"	WS to lower	

20	28804-9	288W	131 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	20'1"	N/A	33'2"		(1)Fiber/Strand	23'8"	NO MA	YES
21	28804-8	289W	131 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	20'5"	N/A	29'5"		(1)Fiber/Strand	24'5"	u	}
22	28804-7	290W	131 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	20'4"	N/A	39'9"		(1)Fiber/Strand	24'1"	u	
23	28804-6	291W	131 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	20'5"	N/A	40'8"		(1)Fiber/Strand	24'6"	u	
24	28804-5	292W	131 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	20'0"	N/A	41'4"		(1)Fiber/Strand	23'8"	u	
25	28804-4	293W	131 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	20'2"	N/A	40'10"		(1)Fiber/Strand	24'1"	u	
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

AN LLL 8/13/18

From: Hodges, Felicia N
Sent: Monday, August 13, 2018 4:07 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4452 LXFR0711W
Attachments: Exhibit B - MetroNet JU4452 LXFR0711W.pdf

Approved

From: Sanders, Ashley L
Sent: Monday, August 13, 2018 9:04 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU4452 LXFR0711W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 4452

MetroNet package: LXFR0711W

JobTrac #: 21900069181464

Cost for MRC to bill MetroNet: \$5610.62

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 - TOTAL POLES
 13 - Need MR (lower 41 att)
 12 - No MR

EXHIBIT B
 Windstream CORPORATION
 APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX-FR07-11W

Submit in Duplicate

219000691-81464 LXSE

BILL METRONET:

\$5,610.62

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # LAUREN SANDEFUR 812.213.1328
 EMAIL ADDRESS LAUREN.SANDEFUR@METRONETINC.COM

Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Laundfer 06/18 FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
 NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	28804-3	294W	131 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	19'7"	N/A	40'8"	(1)Fiber/Strand	23'4"	NO MR	YES
2	28804-2	295W	111 REYNOLDS RD, Lexington, KY 40516	50/2, WXM	19'6"	N/A	41'2"	(1)Fiber/Strand	23'5"	u	
3	22738-101-70	300W ✓	111 REYNOLDS RD, Lexington, KY 40515	45/3, WXM	18'7"	N/A	22'10"	(1)Fiber/Strand	19'3"	WS to lower	
4	22738-103	301W ✓	125 CANARY RD, Lexington, KY 40515	50/3, WXM	22'6"	22'6"	27'7"	(1)Fiber/Strand	23'6"	u	
5	22738-105	302W ✓	125 CANARY RD, Lexington, KY 40515	55/2, WXM	27'4"	28'4"	32'0"	(1)Fiber/Strand	28'4"	u	
6	22738-113	303W ✓	125 CANARY RD, Lexington, KY 40515	45/3, WXM	24'8"	N/A	29'0"	(1)Fiber/Strand	25'8"	u	
7	22738-119	304W ✓	151 CANARY RD, Lexington, KY 40515	50/2, WXM	23'4"	N/A	27'4"	(1)Fiber/Strand	24'	u	
8	22738-143	305W	189 CANARY RD, Lexington, KY 40515	45/3, WXM	23'4"	N/A	30'5"	(1)Fiber/Strand	25'6"	NO MR	
9	22738-149	306W ✓	3257 LOCH NESS DR, Lexington, KY 4051	45/3, WXM	24'0"	N/A	27'5"	(1)Fiber/Strand	25'	WS to lower	
10	22738-155	307W ✓	3257 LOCH NESS DR, Lexington, KY 4051	50/2, WXM	26'5"	N/A	29'7"	(1)Fiber/Strand	26'5"	u	
11	22738-163	308W ✓	3257 LOCH NESS DR, Lexington, KY 4051	50/3, WXM	22'4"	N/A	25'1"	(1)Fiber/Strand	23'9"	u	
12	22738-231	309W ✓	3256 LOCH NESS DR, Lexington, KY 4051	45/3, WXM	19'7"	N/A	22'3"	(1)Fiber/Strand	20'7"	u	
13	22738-35	310W	3256 LOCH NESS DR, Lexington, KY 4051	45/3, WXM	23'4"	N/A	30'0"	(1)Fiber/Strand	26'6"	NO MR	
14	NT	311W ✓	249 REYNOLDS RD, Lexington, KY 40515	45/3, WXM	22'4"	N/A	26'6"	(1)Fiber/Strand	22'4"	WS to lower	
15	NT	312W ✓	249 REYNOLDS RD, Lexington, KY 40515	45/3, WXM	20'7"	N/A	25'1"	(1)Fiber/Strand	21'7"	u	
16	22547-15	313W	165 DONABROOK CT, Lexington, KY 4051	50/2, WXM	22'6"	16'11"	29'9"	(1)Fiber/Strand	25'3"	NO MR	
17	22547-165	314W	165 DONABROOK CT, Lexington, KY 4051	50/2, WXM	21'8"	N/A	30'1"	(1)Fiber/Strand	24'11"	u	
18	22547-169	315W	165 DONABROOK CT, Lexington, KY 4051	45/3, WXM	21'10"	N/A	28'3"	(1)Fiber/Strand	24'10"	u	
19	NT	316W	177 DONABROOK CT, Lexington, KY 4051	45/3, WXM	17'7"	N/A	27'6"	(1)Fiber/Strand	20'	u	

20	NT	317W ✓	181 DONABROOK CT, Lexington, KY 4051	40/3, WXM	18'9"	N/A	20'4"	(1)Fiber/Strand	18.9"	WS to lower	YES
21	NT	318W ✓	185 DONABROOK CT, Lexington, KY 4051	40/3, WXM	19'3"	17'3"	23'10"	(1)Fiber/Strand	20.3"	"	
22	NT	319W	185 DONABROOK CT, Lexington, KY 4051	45/3, WXM	19'6"	N/A	24'11"	(1)Fiber/Strand	21.7"	NO MR	
23	24972-3489-50	320W	3492 LANSDOWN DR, Lexington, KY 4051	35/3, WXM	22'1"	N/A	N/A	(1)Fiber/Strand	23.1"	"	
24	NT	322W	3494 LANSDOWN DR, Lexington, KY 4051	45/3, WXM	18'4"	N/A	27'6"	(2)Fiber/Strand	22.5"	"	
25	23750-3408	323W	3418 REYNOLDS RD, Lexington, KY 4051	45/3, WXM	19'4"	19'4"	25'2"	(1)Fiber/Strand	21.4"	"	
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 8/13/18

From: Hodges, Felicia N
Sent: Monday, August 13, 2018 4:07 PM
To: 'Lauren Sandefur'
Subject: FW: Exhibit B - MetroNet JU4453 LXFR0712W
Attachments: Exhibit B - MetroNet JU4453 LXFR0712W.pdf

Approved

From: Sanders, Ashley L
Sent: Monday, August 13, 2018 9:12 AM
To: WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>; Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU4453 LXFR0712W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 4453

MetroNet package: LXFR0712W

JobTrac #: 21900069181465

Cost for MRC to bill MetroNet: \$1665.46

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 - TOTAL POLES

6 - Need MR (lower 6 att & 4 drops)

19 - No MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #: LX-FR07-12W

219000691-81465 LXSE

BILL METRONET:

\$ 1,665.46

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC
Contact Name, Phone #: Lauren Sandefur 812.213.1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
Authorized Signature & Date:

Lauren Sandefur 6/6/18 FOR MAKE READY

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	23750-3412	324W	3422 GREENLAWN DR, Lexington, KY 405	45/3, WXM	18'10"	19'6"	28'0"	(1)Fiber/Strand	22'2"	NO MR	YES
2	NT	325W	3426 GREENLAWN DR, Lexington, KY 405	45/3, WXM	19'8"	20'3"	30'1"	(1)Fiber/Strand	22'10"	u	}
3	NT	326W	3430 GREENLAWN DR, Lexington, KY 405	45/3, WXM	18'0"	N/A	28'9"	(1)Fiber/Strand	21'	u	
4	23750-3440	327W	3436 GREENLAWN DR, Lexington, KY 405	45/4, WXM	22'6"	22'9"	28'6"	(1)Fiber/Strand	24'6"	u	
5	NT	328W	3444 GREENLAWN DR, Lexington, KY 405	40/4, WXM	17'0"	17'6"	22'11"	(1)Fiber/Strand	19'5"	u	
6	NT	329W	3452 GREENLAWN DR, Lexington, KY 405	30/5, WXM	N/A	N/A	19'4"	(1)Fiber/Strand	16'	u	
7	NT	330W	3458 GREENLAWN DR, Lexington, KY 405	45/3, WXM	19'8"	19'8"	25'6"	(1)Fiber/Strand	22'1"	u	
8	NT	331W	3460 GREENLAWN DR, Lexington, KY 405	50/2, WXM	23'7"	N/A	33'6"	(2)Fiber/Strand	25'11"	u	
9	NT	332W ✓	3464 GREENLAWN DR, Lexington, KY 405	45/3, WXM	21'10"	N/A	26'10"	(1)Fiber/Strand	23'3"	WS to lower	
10	NT	333W +	3476 GREENLAWN DR, Lexington, KY 405	40/4, WXM	18'3"	N/A	22'8"	(1)Fiber/Strand	19'3"	u	
11	NT	334W	3484 GREENLAWN DR, Lexington, KY 405	40/4, WXM	17'3"	17'7"	22'8"	(1)Fiber/Strand	19'3"	NO MR	
12	NT	335W ✓	3488 GREENLAWN DR, Lexington, KY 405	40/4, WXM	19'4"	N/A	23'5"	(1)Fiber/Strand	20'	WS to lower	
13	23750-3500	336W X	3500 GREENLAWN DR, Lexington, KY 405	40/4, WXM	19'10"	20'0"	25'2"	(1)Fiber/Strand	21'	NO MR	
14	23750-3508	337W	3504 GREENLAWN DR, Lexington, KY 405	40/4, WXM	18'5"	18'5"	24'3"	(1)Fiber/Strand	20'11"	u	
15	23460-3512	338W	3512 GREENLAWN DR, Lexington, KY 405	45/3, WXM	18'1"	18'5"	27'11"	(1)Fiber/Strand	20'7"	u	
16	NT	339W	3520 GREENLAWN DR, Lexington, KY 405	45/2, WXM	19'9"	20'10"	29'0"	(1)Fiber/Strand	23'2"	u	
17	23750-3532	340W	3528 GREENLAWN DR, Lexington, KY 405	45/3, WXM	19'2"	19'9"	28'4"	(1)Fiber/Strand	22'6"	u	
18	NT	341W	3536 GREENLAWN DR, Lexington, KY 405	40/3, WXM	17'7"	18'0"	24'7"	(1)Fiber/Strand	19'11"	u	
19	23750-3550	342W ✓	3544 GREENLAWN DR, Lexington, KY 405	40/3, WXM	18'1"	18'4"	21'3"	(1)Fiber/Strand	17'9"	WS to lower	

20	23750-3562	343W	3558 GREENLAWN DR, Lexington, KY 405	40/3, WXM	17'5"	17'9"	24'3"		{1}Fiber/Strand	20'1"	NO MR	YES
21	NT	344W ✓	3570 GREENLAWN DR, Lexington, KY 405	40/4, WXM	19'0"	N/A	23'9"		{1}Fiber/Strand	20'5"	WS to lower	}
22	NT	345W	3576 GREENLAWN DR, Lexington, KY 405	40/4, WXM	20'0"	N/A	25'9"		{1}Fiber/Strand	22'4"	NO MR	
23	23750-3586	346W ✓	342 STONEYBROOK DR, Lexington, KY 405	40/4, WXM	19'7"	19'11"	23'11"		{1}Fiber/Strand	20'7"	WS to lower	
24	NT	347W	339 WILSON DOWNING RD, Lexington, KY 405	45/3, WXM	21'4"	21'6"	28'9"		{1}Fiber/Strand	24'10"	NO MR	
25	NT	348W	339 WILSON DOWNING RD, Lexington, KY 405	45/3, WXM	22'9"	N/A	29'1"		{2}Fiber/Strand	26'	u	
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 8/13/18

From: Hodges, Felicia N
Sent: Thursday, August 09, 2018 3:05 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4454 LXFR0713W
Attachments: Exhibit B - MetroNet JU4454 LXFR0713W.pdf

Lauren,

This application has been approved.

Thank you,

Felicia(Nicole)Hodges

Analyst I - Engineering Support | Windstream

11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212

Felicia.N.Hodges@Windstream.com

o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Thursday, August 9, 2018 1:33 PM
To: WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>; Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: Exhibit B - MetroNet JU4454 LXFR0713W

See attached for Exhibit B for:

JU #: 4454

MetroNet package: LXFR0713W

JobTrac #: 21900069181433

Cost for MRC to bill MetroNet: \$4382.17

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

19 - TOTAL POLES

13 - Need MR (25 att + 7 dropper)

6 - NO MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX-FR07-13W

Submit in Duplicate

219000691-81433 LXSG

BILL METRONET:

\$4,382.17

FOR MAKE READY

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812.213.1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: Lauren Sandefur 6.7.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream To Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	24793-3605	349W	3601 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	18'9"	N/A	24'10"	(1)Fiber/Strand	21'2"	NO MR	YES
2	24793-3609	350W	3613 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	20'0"	20'2"	24'8"	(1)Fiber/Strand	20'11"	WS to lower	
3	NT	351W	3621 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	18'6"	18'8"	23'4"	(1)Fiber/Strand	19'7"	"	
4	NT	352W	3626 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	18'5"	N/A	23'10"	(1)Fiber/Strand	20'5"	"	
5	NT	353W	3633 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	17'8"	N/A	22'10"	(1)Fiber/Strand	19'6"	"	
6	NT	354W	3645 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	18'3"	N/A	24'6"	(1)Fiber/Strand	21'2"	NO MR	
7	NT	355W	3653 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	18'11"	N/A	23'1"	(1)Fiber/Strand	19'9"	WS to lower	
8	NT	356W	3657 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	18'7"	19'5"	25'0"	(1)Fiber/Strand	21'2"	"	
9	24793-3665	357W	3665 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	18'4"	N/A	23'9"	(1)Fiber/Strand	20'2"	"	
10	24793-3673	358W	3677 KING ARTHUR DR, Lexington, KY 40	45/3, WXM	N/A	N/A	22'10"	(1)Fiber/Strand	19'6"	NO MR	
11	24792-3685	359W	3685 KING ARTHUR DR, Lexington, KY 40	45/3, WXM	21'3"	N/A	26'5"	(1)Fiber/Strand	22'3"	WS to lower	
12	24792-3689	360W	3689 KING ARTHUR DR, Lexington, KY 40	40/3, WXM	16'8"	16'11"	23'2"	(1)Fiber/Strand	19'4"	NO MR	
13	24792-3693	361W	3693 KING ARTHUR DR, Lexington, KY 40	40/4, WXM	19'0"	N/A	25'0"	(1)Fiber/Strand	21'8"	WS to lower	
14	NT	362W	3621 ALLANTE BROOK CT, Lexington, KY	40/4, WXM	21'10"	21'3"	23'0"	(1)Fiber/Strand	19'8"	"	
15	24793-3719	363W	3629 ALLANTE BROOK CT, Lexington, KY	40/4, WXM	21'3"	21'6"	24'11"	(1)Fiber/Strand	21'3"	"	
16	NT	364W	3637 ALLANTE BROOK CT, Lexington, KY	40/4, WXM	21'4"	21'10"	27'8"	(1)Fiber/Strand	23'8"	NO MR	
17	24793-3721	365W	3639 ALLANTE BROOK CT, Lexington, KY	20/3, WXM	21'11"	N/A	N/A	(1)Fiber/Strand	21'11"	WS to lower	
18	24793-3737	366W	3640 ALLANTE BROOK CT, Lexington, KY	35/4, WXM	24'4"	N/A	N/A	(1)Fiber/Strand	25'4"	NO MR	
19	187515-83	367W	3640 ALLANTE BROOK CT, Lexington, KY	45/3, WXM	26'5"	N/A	27'4"	(2)Fiber/Strand	21'8"	WS to lower	

SIGNED for dfl 8/9/18

From: Hodges, Felicia N
Sent: Thursday, August 09, 2018 2:56 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU4750 LXFR0302W - no make ready, bill for Engineering
Attachments: Exhibit B - MetroNet JU4750 LXFR0302W.pdf

Lauren,

This application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Thursday, August 9, 2018 1:02 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: Exhibit B - MetroNet JU4750 LXFR0302W - no make ready, bill for Engineering

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 4750

MetroNet package: LXFR0302W

JobTrac #: No jobtrac due to no make ready

No cost for MRC, need to bill MetroNet for Byers engineering time = \$192.80

Let me know if you have questions.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505
ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

4- Total Poles
4- NO MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX-FR03-02W

Submit in Duplicate

NO JOB TRAC - NO MR.
BILL METRONET
\$ 192.80 FOR
ENGINEERING

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # Lauren Sandefur 812.213.1328
EMAIL ADDRESS lauren.sandefur@metronetinc.com
Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: Wandefur 6.18.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project. If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	69933-30275	728W	1508 Bryan Ave, Lexington, Ky 40505	45, 3, WXM	17'7"	17'4"	28'10"	(1)Fiber/Strand	23'8"	NO MR	YES
2	69782-30219	730W	401 Emerson Dr, Lexington, Ky 40505	45, 3, WXM	20'2"	18'4"	30'10"	(1)Fiber/Strand	27'6"	NO MR	
3	69654-30161	732W	400 Emerson Dr, Lexington, Ky 40505	45, 3, WXM	20'7"	20'7"	23'9"	(1)Fiber/Strand	27'6"	NO MR	
4	69519-30100	734W	1452 Bryan Ave, Lexington, Ky 40505	45, 3, WXM	19'7"	N/A	27'11"	(2)Fiber/Strand	24'0"	NO MR	
ESTIMATED TOTAL COSTS											

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com.
Windstream OSP Construction Manager/Engineer Authorized Signature & Date: [Signature] 8/9/18

From: Hodges, Felicia N
Sent: Tuesday, May 22, 2018 11:24 AM
To: Lauren Sandefur
Subject: FW: LX049-03W - rejecting for maps
Attachments: LX049-03W - METRONET POLE INVENTORY REPORT.PDF; O-Calcs.pdf; Pole_Photos.pdf; LX049-03W Pole Photos.pdf; Map Key.pdf; LX049-03W - Windstream Inventory Report - Exhibit B.PDF

Lauren,

This was rejected please see below and make the proper correction. Once complete please send it back to me and resubmit

Thank you,
Nicole

From: Sanders, Ashley L
Sent: Monday, May 21, 2018 4:41 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: FW: LX049-03W - rejecting for maps

Felicia, rejected this package back- there is no map (they have been naming it the "pole app map") to show the cable route like all of the other packages have had. Need that before I can assign this out to begin field work. Please re-send entire package when that has been provided. Thanks in advance!

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505
ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

From: Hodges, Felicia N
Sent: Thursday, May 17, 2018 4:12 PM
To: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: FW: LX049-03W

Ashley,

Please see the following attachment for MetroNet Kentucky. The Windstream Proposal Number is JUPR3757. Let me know if you have any further question or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream

11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Thursday, May 17, 2018 2:54 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX049-03W

Instead of forwarding the email I just started over, lets see if this works.

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



56W	NT		WS	Lower Windstream		37.96239	-84.48233	Windstream	Communication	26' 0"	22' 0"	23' 1"	Y	N	
57W	NT	45/3	WS	2=Comms	36.90	4692 HARTLAND PKW	37.96259	-84.48272	KU	Primary	35' 0"		Y	N	D: Pedestrian Only 9.5'
57W	NT		WS				37.96259	-84.48272	KU	Transformer	30' 2"		Y	N	
57W	NT		WS				37.96259	-84.48272	KU	Neutral	28' 5"		Y	N	
57W	NT		WS				37.96259	-84.48272	KU	Primary Riser	27' 0"		Y	N	
57W	NT		WS				37.96259	-84.48272	Metronet	Communication		23' 0"	Y	N	
57W	NT		WS	Lower Charter			37.96259	-84.48272	Charter	Communication	24' 8"	22' 0"	37	Y	N
57W	NT		WS	Lower Windstream			37.96259	-84.48272	Windstream	Communication	23' 9"	21' 0"	23' 2"	Y	N
58W	27774-4726	45/3	WS	2=Comms	30.80	4728 HARTLAND PKW	37.96132	-84.48108	KU	Primary	38' 2"		Y	N	B: Residential/Over Driveways
58W	27774-4726		WS				37.96132	-84.48108	KU	Primary	37' 6"		Y	N	
58W	27774-4726		WS				37.96132	-84.48108	KU	Primary Riser	27' 9"		Y	N	
58W	27774-4726		WS				37.96132	-84.48108	KU	Neutral	27' 6"		Y	N	
58W	27774-4726		WS				37.96132	-84.48108	KU	Secondary	26' 7"		Y	N	
58W	27774-4726		WS				37.96132	-84.48108	Metronet	Communication		22' 4"	Y	N	
58W	27774-4726		WS	Lower Charter			37.96132	-84.48108	Charter	Communication	23' 6"	21' 4"	36	Y	N
58W	27774-4726		WS	Lower Windstream			37.96132	-84.48108	Windstream	Communication	22' 4"	20' 4"	23' 10"	Y	N
59W	1867982	45/3	WS	2=Comms	42.90	4721 HARTLAND PKW	37.96118	-84.48123	KU	Primary	36' 11"		Y	N	D: Pedestrian Only 9.5'
59W	1867982		WS				37.96118	-84.48123	KU	Neutral	30' 6"		Y	N	
59W	1867982		WS				37.96118	-84.48123	KU	Secondary	29' 3"		Y	N	
59W	1867982		WS				37.96118	-84.48123	KU	Streetlight	28' 4"		Y	N	
59W	1867982		WS				37.96118	-84.48123	Metronet	Communication		25' 5"	Y	N	
59W	1867982		WS	Lower Charter			37.96118	-84.48123	Charter	Communication	25' 5"	24' 5"	60	Y	N
59W	1867982		WS	Lower Windstream			37.96118	-84.48123	Windstream	Communication	25' 3"	23' 5"	25' 3"	Y	N
60W	27774-1217	45/3	WS	2=Comms	26.40	1245 KENESAW VILLA	37.96069	-84.48182	KU	Primary	38' 4"		Y	N	D: Pedestrian Only 9.5'
60W	27774-1217		WS				37.96069	-84.48182	KU	Primary Riser	31' 2"		Y	N	
60W	27774-1217		WS				37.96069	-84.48182	KU	Neutral	30' 6"		Y	N	
60W	27774-1217		WS				37.96069	-84.48182	KU	Secondary Riser	29' 10"		Y	N	
60W	27774-1217		WS				37.96069	-84.48182	KU	Secondary	29' 9"		Y	N	
60W	27774-1217		WS				37.96069	-84.48182	KU	Secondary	29' 1"		Y	N	
60W	27774-1217		WS				37.96069	-84.48182	KU	Secondary Riser	28' 4"		Y	N	
60W	27774-1217		WS				37.96069	-84.48182	Metronet	Communication		24' 5"	Y	N	
60W	27774-1217		WS	Lower Charter			37.96069	-84.48182	Charter	Communication	25' 5"	23' 5"	51	Y	N
60W	27774-1217		WS	Lower Windstream			37.96069	-84.48182	Windstream	Communication	24' 5"	22' 5"	14' 0"	Y	N
61W	27774-1208	50/2	WS	2=Comms	61.30	1225 KENESAW VILLA	37.96020	-84.48258	KU	Primary	40' 0"		Y	N	D: Pedestrian Only 9.5'
61W	27774-1208		WS				37.96020	-84.48258	KU	Primary	39' 6"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	KU	Transformer	33' 0"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	KU	Primary Riser	32' 8"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	KU	Neutral	32' 4"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	KU	Secondary	31' 7"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	KU	Secondary	31' 0"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	KU	Secondary Riser	30' 3"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	KU	Secondary Riser	29' 4"		Y	N	
61W	27774-1208		WS				37.96020	-84.48258	Metronet	Communication		26' 0"	Y	N	
61W	27774-1208		WS	Lower Charter			37.96020	-84.48258	Charter	Communication	27' 3"	25' 0"	26	Y	N
61W	27774-1208		WS	Lower Windstream			37.96020	-84.48258	Windstream	Communication	26' 0"	24' 0"	18' 11"	Y	N
62W	27774-1209	45/3	WS	2=Comms	63.60	4809 LAUREL CREEK C	37.95982	-84.48329	KU	Primary	38' 5"		Y	N	D: Pedestrian Only 9.5'
62W	27774-1209		WS				37.95982	-84.48329	KU	Primary	34' 1"		Y	N	
62W	27774-1209		WS				37.95982	-84.48329	KU	Primary Riser	30' 11"		Y	N	
62W	27774-1209		WS				37.95982	-84.48329	KU	Neutral	30' 8"		Y	N	
62W	27774-1209		WS				37.95982	-84.48329	KU	Secondary	30' 1"		Y	N	
62W	27774-1209		WS				37.95982	-84.48329	KU	Secondary	29' 4"		Y	N	
62W	27774-1209		WS				37.95982	-84.48329	Metronet	Communication		26' 0"	Y	N	
62W	27774-1209		WS				37.95982	-84.48329	Metronet	Communication		25' 6"	Y	N	
62W	27774-1209		WS	Lower Charter			37.95982	-84.48329	Charter	Communication	25' 2"	24' 8"	49	Y	N
62W	27774-1209		WS	Lower Charter			37.95982	-84.48329	Charter	Communication	25' 0"	24' 4"	Y	N	
62W	27774-1209		WS	Lower Windstream			37.95982	-84.48329	Windstream	Communication	23' 11"	23' 4"	Y	N	
62W	27774-1209		WS	Lower Windstream			37.95982	-84.48329	Windstream	Communication	23' 4"	23' 0"	19' 11"	Y	N
63W	64450-95044	45/3	WS	2=Comms	30.60	1229 ROCKBRIDGE RE	37.96350	-84.48782	KU	Primary	34' 6"		Y	N	D: Pedestrian Only 9.5'
63W	64450-95044		WS				37.96350	-84.48782	KU	Transformer	28' 0"		Y	N	
63W	64450-95044		WS				37.96350	-84.48782	KU	Neutral	27' 3"		Y	N	
63W	64450-95044		WS				37.96350	-84.48782	KU	Primary Riser	26' 11"		Y	N	
63W	64450-95044		WS				37.96350	-84.48782	KU	Secondary Riser	24' 8"		Y	N	
63W	64450-95044		WS				37.96350	-84.48782	KU	Secondary Riser	24' 0"		Y	N	
63W	64450-95044		WS				37.96350	-84.48782	Metronet	Communication		20' 5"	Y	N	
63W	64450-95044		WS	Lower Charter			37.96350	-84.48782	Charter	Communication	22' 5"	19' 5"	34	Y	N
63W	64450-95044		WS	Lower Windstream			37.96350	-84.48782	Windstream	Communication	20' 5"	18' 5"	19' 1"	Y	N

64W	64367-95045	40/3	WS	2=Comms	15.00	4513 HARTLAND PKW	37.96351	-84.48814	KU	Primary	34' 3"		Y	N	D: Pedestrian Only 9.5'	
64W	64367-95045		WS				37.96351	-84.48814	KU	Transformer	28' 0"		Y	N		
64W	64367-95045		WS				37.96351	-84.48814	KU	Neutral	25' 9"		Y	N		
64W	64367-95045		WS				37.96351	-84.48814	KU	Secondary	25' 2"		Y	N		
64W	64367-95045		WS				37.96351	-84.48814	KU	Secondary	24' 5"		Y	N		
64W	64367-95045		WS				37.96351	-84.48814	KU	Secondary Riser	23' 10"		Y	N		
64W	64367-95045		WS				37.96351	-84.48814	KU	Secondary Riser	22' 8"		Y	N		
64W	64367-95045		WS				37.96351	-84.48814	Metronet	Communication		19' 4"	Y	N		
64W	64367-95045		WS	Lower Charter			37.96351	-84.48814	Charter	Communication	22' 6"	18' 4"	43	Y	N	
64W	64367-95045		WS	Lower Windstream			37.96351	-84.48814	Windstream	Communication	21' 6"	17' 4"	20'3"	Y	N	
65W	642279-95046	40/3	WS	2=Comms	15.50	4505 HARTLAND PKW	37.96352	-84.48844	KU	Primary	34' 4"		Y	N	D: Pedestrian Only 9.5'	
65W	642279-95046		WS				37.96352	-84.48844	KU	Transformer	29' 7"		Y	N		
65W	642279-95046		WS				37.96352	-84.48844	KU	Neutral	26' 0"		Y	N		
65W	642279-95046		WS				37.96352	-84.48844	KU	Secondary	25' 4"		Y	N		
65W	642279-95046		WS				37.96352	-84.48844	KU	Secondary	24' 7"		Y	N		
65W	642279-95046		WS				37.96352	-84.48844	KU	Secondary Riser	22' 6"		Y	N		
65W	642279-95046		WS				37.96352	-84.48844	Metronet	Communication		19' 2"	Y	N		
65W	642279-95046		WS	Lower Charter			37.96352	-84.48844	Charter	Communication	21' 7"	18' 2"	44	Y	N	
65W	642279-95046		WS	Lower Windstream			37.96352	-84.48844	Windstream	Communication	20' 8"	17' 2"	19'2"	Y	N	
66W	64139-95047	40/3	WS	2=Comms	22.30	4497 HARTLAND PKW	37.96351	-84.48871	KU	Primary	33' 9"		Y	N	D: Pedestrian Only 9.5'	
66W	64139-95047		WS				37.96351	-84.48871	KU	Transformer	26' 9"		Y	N		
66W	64139-95047		WS				37.96351	-84.48871	KU	Secondary Riser	26' 5"		Y	N		
66W	64139-95047		WS				37.96351	-84.48871	KU	Neutral	25' 9"		Y	N		
66W	64139-95047		WS				37.96351	-84.48871	KU	Secondary	25' 2"		Y	N		
66W	64139-95047		WS				37.96351	-84.48871	KU	Secondary	24' 5"		Y	N		
66W	64139-95047		WS				37.96351	-84.48871	KU	Secondary Riser	23' 4"		Y	N		
66W	64139-95047		WS				37.96351	-84.48871	KU	Secondary Riser	22' 11"		Y	N		
66W	64139-95047		WS				37.96351	-84.48871	Metronet	Communication		19' 7"	Y	N		
66W	64139-95047		WS	Lower Charter			37.96351	-84.48871	Charter	Communication	21' 9"	18' 7"	43	Y	N	
66W	64139-95047		WS	Lower Windstream			37.96351	-84.48871	Windstream	Communication	20' 10"	17' 7"	18'6"	Y	N	
67W	64094-95048	40/3	WS	2=Comms	19.30	4493 HARTLAND PKW	37.96353	-84.48907	KU	Primary	34' 3"		Y	N	D: Pedestrian Only 9.5'	
67W	64094-95048		WS				37.96353	-84.48907	KU	Transformer	29' 1"		Y	N		
67W	64094-95048		WS				37.96353	-84.48907	KU	Neutral	26' 10"		Y	N		
67W	64094-95048		WS				37.96353	-84.48907	KU	Secondary	25' 8"		Y	N		
67W	64094-95048		WS				37.96353	-84.48907	KU	Secondary	25' 0"		Y	N		
67W	64094-95048		WS				37.96353	-84.48907	KU	Secondary Riser	24' 3"		Y	N		
67W	64094-95048		WS				37.96353	-84.48907	KU	Secondary Riser	23' 4"		Y	N		
67W	64094-95048		WS				37.96353	-84.48907	Metronet	Communication		20' 0"	Y	N		
67W	64094-95048		WS	Lower Charter			37.96353	-84.48907	Charter	Communication	21' 6"	19' 0"	54	Y	N	
67W	64094-95048		WS	Lower Windstream			37.96353	-84.48907	Windstream	Communication	20' 6"	18' 0"	21'1"	Y	N	
68W	63996-95048	45/3	WS	2=Comms	49.60	4481 HARTLAND PKW	37.96354	-84.48941	KU	Primary	38' 2"		Y	N	D: Pedestrian Only 9.5'	
68W	63996-95048		WS				37.96354	-84.48941	KU	Transformer	32' 10"		Y	N		
68W	63996-95048		WS				37.96354	-84.48941	KU	Neutral	30' 7"		Y	N		
68W	63996-95048		WS				37.96354	-84.48941	KU	Secondary	29' 11"		Y	N		
68W	63996-95048		WS				37.96354	-84.48941	KU	Secondary	29' 2"		Y	N		
68W	63996-95048		WS				37.96354	-84.48941	KU	Secondary Riser	25' 9"		Y	N		
68W	63996-95048		WS				37.96354	-84.48941	Metronet	Communication		22' 5"	Y	N		
68W	63996-95048		WS	Lower Charter			37.96354	-84.48941	Charter	Communication	25' 5"	21' 5"	64	Y	N	
68W	63996-95048		WS	Lower Windstream			37.96354	-84.48941	Windstream	Communication	24' 5"	20' 5"	23'4"	Y	N	
69W	63907-95026	40/3	WS	2=Comms	27.70	4473 HARTLAND PKW	37.96350	-84.48975	KU	Primary	33' 7"		Y	N	D: Pedestrian Only 9.5'	
69W	63907-95026		WS				37.96350	-84.48975	KU	Primary	33' 5"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Primary	33' 4"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Transformer	28' 0"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Neutral	26' 11"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Neutral	26' 9"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Neutral	26' 6"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Secondary	25' 6"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Secondary	24' 9"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Secondary Riser	24' 4"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Secondary Riser	23' 11"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	KU	Secondary Drip Loop	23' 4"		Y	N		
69W	63907-95026		WS				37.96350	-84.48975	Metronet	Communication		20' 0"	Y	N		
69W	63907-95026		WS				37.96350	-84.48975	Metronet	Communication		19' 8"	Y	N		
69W	63907-95026		WS	Lower Charter			37.96350	-84.48975	Charter	Communication	22' 1"	19' 0"	47	Y	N	
69W	63907-95026		WS	Lower Charter			37.96350	-84.48975	Charter	Communication	21' 7"	18' 8"	Y	N		
69W	63907-95026		WS	Lower Windstream			37.96350	-84.48975	Windstream	Communication	20' 4"	18' 0"	Y	N		
69W	63907-95026		WS	Lower Windstream			37.96350	-84.48975	Windstream	Communication	20' 0"	17' 8"	19'4"	Y	N	

70W	63860-94937	40/3	WS	2=Comms	19.10	4012 JFD CT	37.96324	-84.48992	KU	Primary	33' 6"		Y	N	D: Pedestrian Only 9.5'	
70W	63860-94937		WS				37.96324	-84.48992	KU	Transformer	27' 6"		Y	N		
70W	63860-94937		WS				37.96324	-84.48992	KU	Primary Riser	27' 4"		Y	N		
70W	63860-94937		WS				37.96324	-84.48992	KU	Neutral	26' 11"		Y	N		
70W	63860-94937		WS				37.96324	-84.48992	KU	Secondary Riser	26' 8"		Y	N		
70W	63860-94937		WS				37.96324	-84.48992	Metronet	Communication		23' 3"		Y	N	
70W	63860-94937		WS	Lower Charter			37.96324	-84.48992	Charter	Communication	24' 2"	22' 3"	47	Y	N	
70W	63860-94937		WS	Lower Windstream			37.96324	-84.48992	Windstream	Communication	22' 3"	21' 3"	18' 2"	Y	N	
71W	63792-94849	45/4	WS	2=Comms	46.20	4020 JFD CT	37.96306	-84.49013	KU	Primary	34' 1"		Y	N	D: Pedestrian Only 9.5'	
71W	63792-94849		WS				37.96306	-84.49013	KU	Transformer	29' 7"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	KU	Secondary Riser	26' 11"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	KU	Neutral	26' 9"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	KU	Neutral	26' 8"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	KU	Secondary	26' 3"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	KU	Secondary	25' 7"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	KU	Secondary Riser	25' 0"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	KU	Secondary Riser	24' 9"		Y	N		
71W	63792-94849		WS				37.96306	-84.49013	Metronet	Communication		21' 5"		Y	N	
71W	63792-94849		WS				37.96306	-84.49013	Metronet	Communication		21' 0"		Y	N	
71W	63792-94849		WS	Lower Charter			37.96306	-84.49013	Charter	Communication	22' 1"	20' 4"	61	Y	N	
71W	63792-94849		WS	Lower Charter			37.96306	-84.49013	Charter	Communication	21' 9"	20' 0"		Y	N	
71W	63792-94849		WS	Lower Windstream			37.96306	-84.49013	Windstream	Communication	21' 0"	19' 4"		Y	N	
71W	63792-94849		WS	Lower Windstream			37.96306	-84.49013	Windstream	Communication	20' 4"	18' 8"		Y	N	
71W	63792-94849		WS	Lower Windstream			37.96306	-84.49013	Windstream	Communication	19' 8"	18' 0"	11' 2"	Y	N	
72W	63595-94895	40/3	WS	2=Comms	28.10	4017 JFD CT	37.96314	-84.49081	KU	Primary	33' 5"		N	N	D: Pedestrian Only 9.5'	
72W	63595-94895		WS				37.96314	-84.49081	KU	Transformer	27' 6"		N	N		
72W	63595-94895		WS				37.96314	-84.49081	KU	Neutral	25' 10"		N	N		
72W	63595-94895		WS				37.96314	-84.49081	KU	Secondary	25' 2"		N	N		
72W	63595-94895		WS				37.96314	-84.49081	KU	Secondary	24' 7"		N	N		
72W	63595-94895		WS				37.96314	-84.49081	KU	Secondary Riser	24' 2"		N	N		
72W	63595-94895		WS				37.96314	-84.49081	Metronet	Communication		20' 8"		N	N	
72W	63595-94895		WS	Lower Charter			37.96314	-84.49081	Charter	Communication	20' 8"	19' 8"	57	N	N	
72W	63595-94895		WS	Lower Windstream			37.96314	-84.49081	Windstream	Communication	19' 8"	18' 8"		N	N	
72W	63595-94895		WS	Lower Windstream			37.96314	-84.49081	Windstream	Communication	18' 8"	17' 8"	16' 5"	N	N	
73W	63429-94935	45/3	WS	2=Comms	29.90	1109 LEDGEBROOK C	37.96326	-84.49130	KU	Primary	37' 4"		N	N	D: Pedestrian Only 9.5'	
73W	63429-94935		WS				37.96326	-84.49130	KU	Neutral	30' 7"		N	N		
73W	63429-94935		WS				37.96326	-84.49130	Metronet	Communication		27' 3"		N	N	
73W	63429-94935		WS				37.96326	-84.49130	Metronet	Communication		26' 10"		N	N	
73W	63429-94935		WS	Lower Charter			37.96326	-84.49130	Charter	Communication	27' 3"	25' 11"	63	N	N	
73W	63429-94935		WS	Lower Charter			37.96326	-84.49130	Charter	Communication	26' 10"	25' 8"		N	N	
73W	63429-94935		WS	Lower Windstream			37.96326	-84.49130	Windstream	Communication	25' 11"	24' 8"		N	N	
73W	63429-94935		WS	Lower Windstream			37.96326	-84.49130	Windstream	Communication	25' 8"	23' 8"		N	N	
73W	63429-94935		WS	Lower Windstream			37.96326	-84.49130	Windstream	Communication	24' 8"	22' 8"	24' 0"	N	N	
74W	63391-94882	50/2	WS	1=None	37.60	1109 LEDGEBROOK C	37.96314	-84.49151	KU	Primary	44' 0"		N	N	D: Pedestrian Only 9.5'	
74W	63391-94882		WS				37.96314	-84.49151	KU	Transformer	38' 1"		N	N		
74W	63391-94882		WS				37.96314	-84.49151	KU	Neutral	36' 4"		N	N		
74W	63391-94882		WS				37.96314	-84.49151	KU	Secondary	35' 4"		N	N		
74W	63391-94882		WS				37.96314	-84.49151	KU	Secondary	34' 7"		N	N		
74W	63391-94882		WS				37.96314	-84.49151	KU	Secondary Riser	33' 8"		N	N		
74W	63391-94882		WS				37.96314	-84.49151	Metronet	Communication		30' 4"		N	N	
74W	63391-94882		WS				37.96314	-84.49151	Charter	Communication	29' 3"		76	N	N	
74W	63391-94882		WS				37.96314	-84.49151	Charter	Communication	28' 8"			N	N	
74W	63391-94882		WS				37.96314	-84.49151	Windstream	Communication	28' 1"	24' 6"		N	N	
75W	63255-94823	50/2	WS	2=Comms	44.50	1012 TANBARK RD	37.96299	-84.49201	KU	Primary	42' 9"		N	N	D: Pedestrian Only 9.5'	
75W	63255-94823		WS				37.96299	-84.49201	KU	Primary	40' 7"		N	N		
75W	63255-94823		WS				37.96299	-84.49201	KU	Neutral	35' 9"		N	N		
75W	63255-94823		WS				37.96299	-84.49201	KU	Neutral	35' 4"		N	N		
75W	63255-94823		WS				37.96299	-84.49201	Metronet	Communication		32' 0"		N	N	
75W	63255-94823		WS				37.96299	-84.49201	Metronet	Communication		31' 8"		N	N	
75W	63255-94823		WS	Lower Charter			37.96299	-84.49201	Charter	Communication	31' 9"	30' 9"	54	N	N	
75W	63255-94823		WS	Lower Charter			37.96299	-84.49201	Charter	Communication	31' 5"	30' 6"		N	N	
75W	63255-94823		WS	Lower Windstream			37.96299	-84.49201	Windstream	Communication	30' 9"	29' 5"		N	N	
75W	63255-94823		WS	Lower Windstream			37.96299	-84.49201	Windstream	Communication	30' 6"	29' 1"		N	N	
75W	63255-94823		WS	Lower Windstream			37.96299	-84.49201	Windstream	Communication	29' 5"	28' 5"		N	N	
75W	63255-94823		WS	Lower Windstream			37.96299	-84.49201	Windstream	Communication	29' 1"	28' 1"	23' 8"	N	N	
END																

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

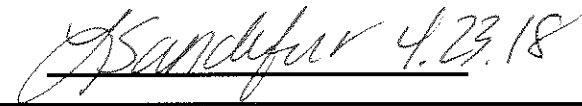
**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX049-03W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812.213.1328
 EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: _____



By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensior Work Description	Bill for Rent Y or N
1	NT	51W	4728 Hartland Pkwy, Lexington, Ky 40515	45, 3, WXM	16'4"	N/A	28'9"	(1)Fiber/Strand			
2	23933-4728	52W	4740 Hartland Pkwy, Lexington, Ky 40515	45, 3, WXM	N/A	N/A	23'9"	(1)Fiber/Strand			
3	NT	53W	1304 Hartland Woods Way, Lexington, Ky 4	45, 3, WXM	23'8"	23'8"	27'8"	(1)Fiber/Strand			
4	23933-4714	54W	4712 Hartland Pkwy, Lexington, Ky 40515	60, 2, WXM	30'10"	N/A	39'8"	(1)Fiber/Strand			
5	23933-4708	55W	4708 Hartland Pkwy, Lexington, Ky 40515	45, 3, WXM	24'3"	N/A	26'9"	(1)Fiber/Strand			
6	NT	56W	1316 The Kings Ct, Lexington, Ky 40515	45, 3, WXM	26'0"	26'0"	27'4"	(1)Fiber/Strand			
7	NT	57W	4692 Hartland Pkwy, Lexington, Ky 40515	45, 3, WXM	23'9"	N/A	27'0"	(1)Fiber/Strand			
8	27774-4726	58W	4728 Hartland Pkwy, Lexington, Ky 40515	45, 3, WXM	22'4"	22'4"	26'7"	(1)Fiber/Strand			
9	1867982	59W	4721 Hartland Pkwy, Lexington, Ky 40515	45, 3, WXM	25'3"	N/A	28'4"	(1)Fiber/Strand			
10	27774-1217	60W	1245 Kenesaw Village Dr, Lexington, Ky 40	45, 3, WXM	24'5"	24'5"	28'4"	(1)Fiber/Strand			
11	27774-1208	61W	1225 Kenesaw Village Dr, Lexington, Ky 40	50, 2, WXM	26'0"	26'0"	29'4"	(1)Fiber/Strand			
12	27774-1209	62W	4809 Laurel Creek Cir, Lexington, Ky 40515	45, 3, WXM	23'11"	N/A	29'4"	(2)Fiber/Strand			
13	64450-95044	63W	1229 Rockbridge Rd, Lexington, Ky 40515	45, 3, WXM	20'5"	N/A	24'0"	(1)Fiber/Strand			
14	64367-95045	64W	4513 Hartland Pkwy, Lexington, Ky 40515	40, 3, WXM	21'6"	N/A	22'8"	(1)Fiber/Strand			
15	642279-95046	65W	4505 Hartland Pkwy, Lexington, Ky 40515	40, 3, WXM	20'8"	20'9"	22'6"	(1)Fiber/Strand			
16	64139-95047	66W	4497 Hartland Pkwy, Lexington, Ky 40515	40, 3, WXM	20'10"	20'10"	22'11"	(1)Fiber/Strand			
17	64094-95048	67W	4493 Hartland Pkwy, Lexington, Ky 40515	40, 3, WXM	20'6"	19'10"	23'4"	(1)Fiber/Strand			
18	63996-95048	68W	4481 Hartland Pkwy, Lexington, Ky 40515	45, 3, WXM	24'5"	24'5"	25'9"	(1)Fiber/Strand			
19	63907-95026	69W	4473 Hartland Pkwy, Lexington, Ky 40515	40, 3, WXM	20'4"	N/A	23'4"	(2)Fiber/Strand			

20	63860-94937	70W	4012 Jfd Ct, Lexington, Ky 40515	40, 3, WXM	22'3"	N/A	26'8"		(1)Fiber/Strand			
21	63792-94849	71W	4020 Jfd Ct, Lexington, Ky 40515	45, 4, WXM	21'0"	N/A	24'9"		(2)Fiber/Strand			
22	63595-94895	72W	4017 Jfd Ct, Lexington, Ky 40515	40, 3, WXM	19'8"	19'0"	24'2"		(1)Fiber/Strand			
23	63429-94935	73W	1109 Ledgebrook Ct, Lexington, Ky 40515	45, 3, WXM	25'11"	26'3"	30'7"		(2)Fiber/Strand			
24	63391-94882	74W	1109 Ledgebrook Ct, Lexington, Ky 40515	50, 2, WXM	28'1"	28'1"	33'8"		(1)Fiber/Strand			
25	63255-94823	75W	1012 Tanbark Rd, Lexington, Ky 40515	50, 2, WXM	30'9"	N/A	35'4"		(2)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

37' 7" - 51W - NT

28' 9" - Lowest Power

19' 1" - Proposed Metronet

16' 4" - Highest Tel Cable

16' 4" - Base offset

Base

WIN3426

38' 1" - 52W - 23933-4728

23' 9" - Lowest Power

20' 5" - Proposed Metronet

4' - Base offset

Base

WIN3427



37' 4" - 53W - NT

27' 8" - Lowest Power

23' 8" - Proposed Metronet

23' 8" - Highest Tel Cable

23' 8" - Highest Tel Drop

23' 8" - Base offset

Base

WIN3428

50' - 54W - 23933-4714

39' 8" - Lowest Power

33' - Proposed Metronet

30' 10" - Highest Tel Cable

4' - Base offset

Base

WIN3429

38' 8" - 55W - 23933-4708

26' 9" - Lowest Power

24' 3" - Highest Tel Cable

23' 5" - Proposed Metronet

4' - Base offset

Base

37' 7" - 56W - NT

27' 4" - Lowest Power

26' - Highest Tel Cable

26' - Highest Tel Drop

24' - Proposed Metronet

4' - Base offset

Base

WIN3431

36' 3" - 57W - NT

27' - Lowest Power

23' 9" - Highest Tel Cable

23' - Proposed Metronet

4' - Base offset

Base

WIN3432

38' 7" - 58W - 27774-4726

26' 7" - Lowest Power

22' 4" - Proposed Metronet

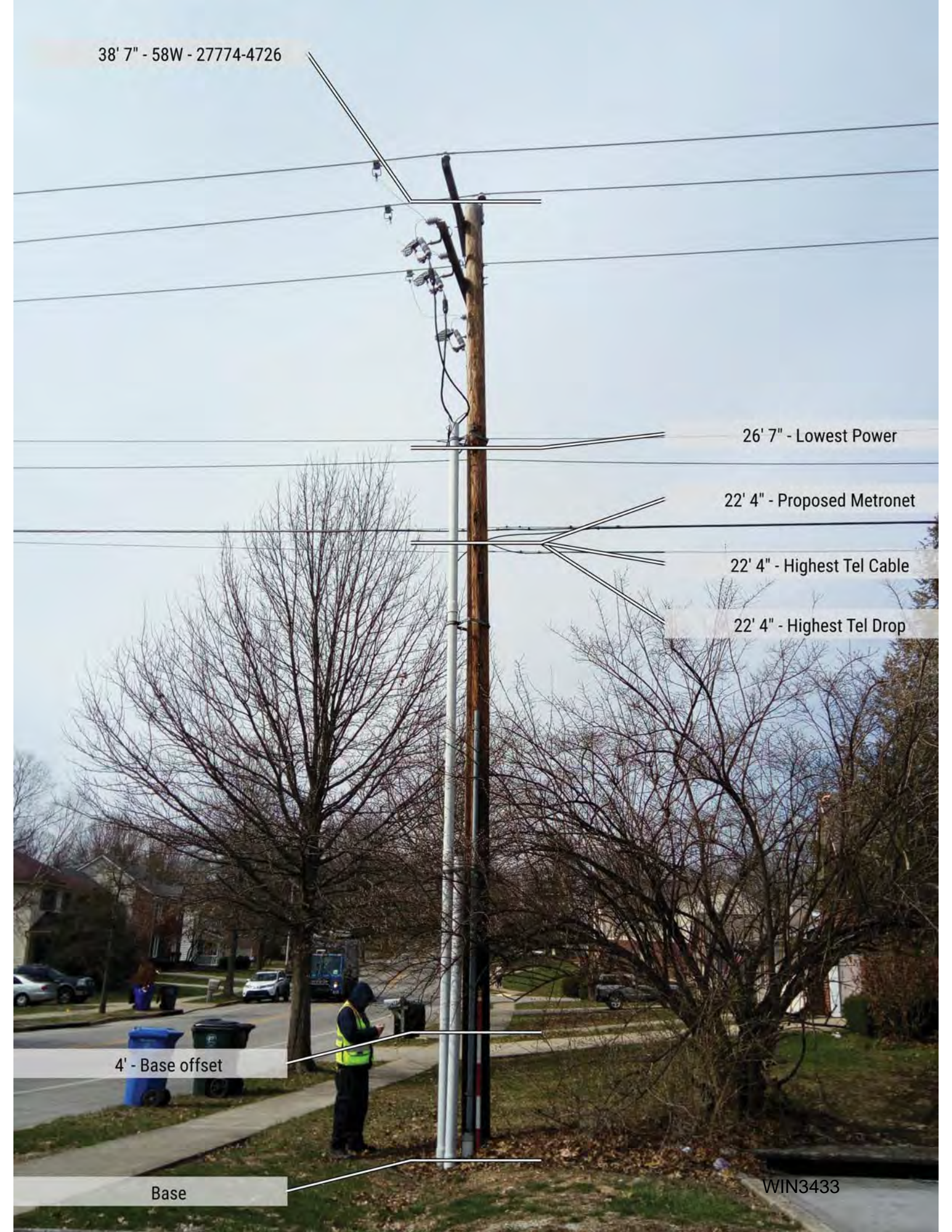
22' 4" - Highest Tel Cable

22' 4" - Highest Tel Drop

4' - Base offset

Base

WIN3433



38' 11" - 59W - 1867982

28' 4" - Lowest Power

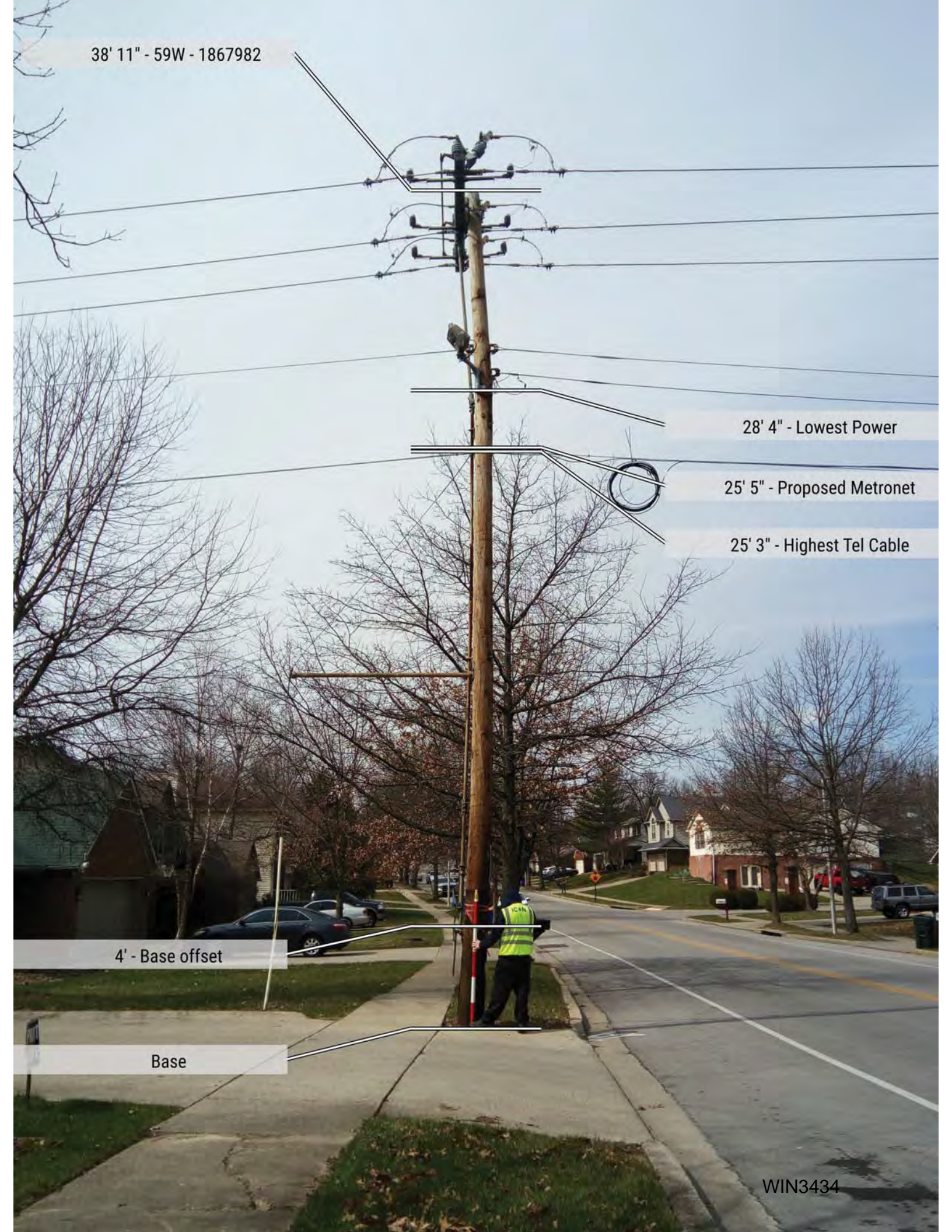
25' 5" - Proposed Metronet

25' 3" - Highest Tel Cable

4' - Base offset

Base

WIN3434



38' 8" - 60W - 27774-1217

28' 4" - Lowest Power

24' 5" - Proposed Metronet

24' 5" - Highest Tel Cable

24' 5" - Highest Tel Drop

4' - Base offset

Base

40' 5" - 61W - 27774-1208

29' 4" - Lowest Power

26' - Proposed Metronet

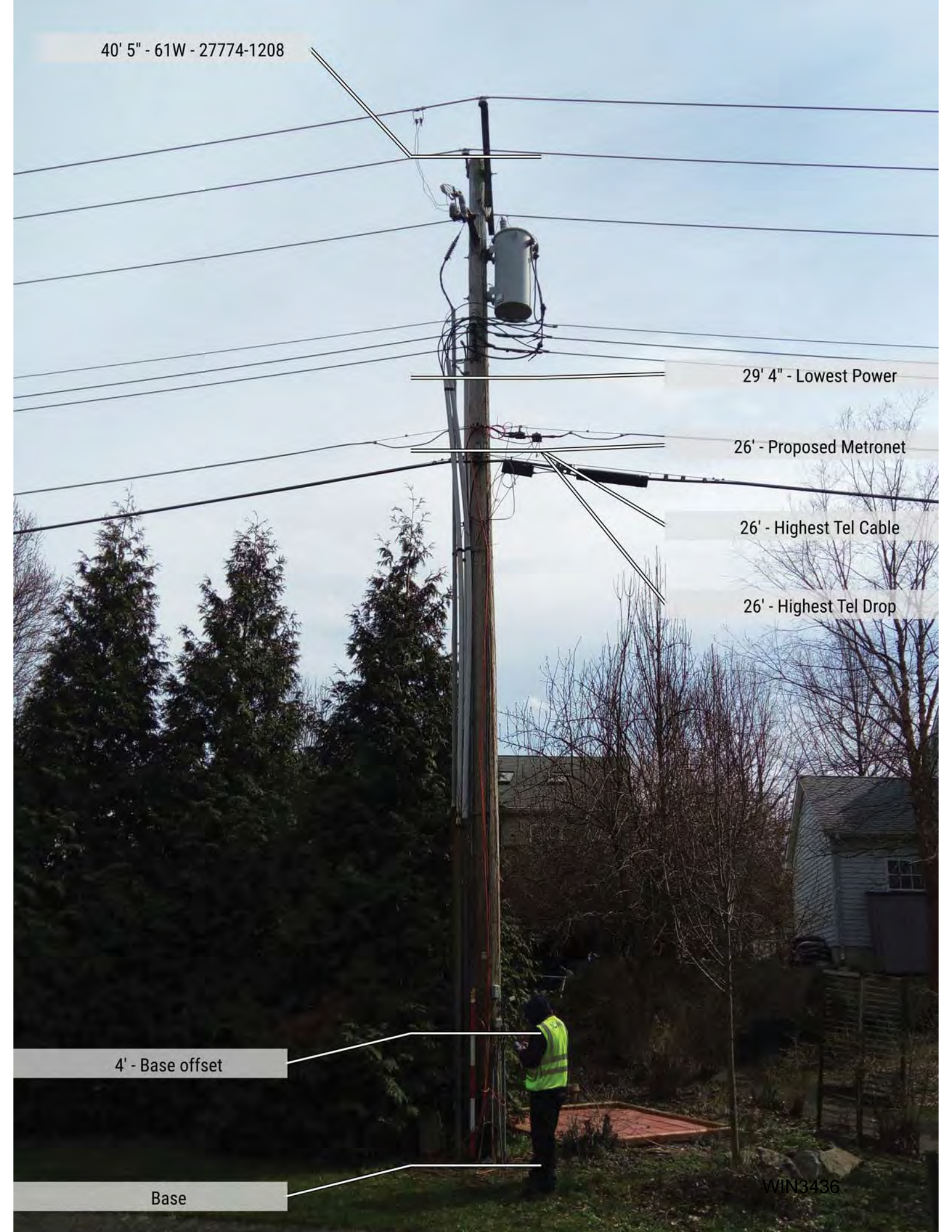
26' - Highest Tel Cable

26' - Highest Tel Drop

4' - Base offset

Base

WIN3436



38' 10" - 62W - 27774-1209

29' 4" - Lowest Power

26' - Proposed Metronet

25' 6" - Proposed Metronet

23' 11" - Highest Tel Cable

4' - Base offset

Base

WIN3437

35' - 63W - 64450-95044

24' - Lowest Power

20' 5" - Proposed Metronet

20' 5" - Highest Tel Cable

4' - Base offset

Base

WIN3438

34' 8" - 64W - 64367-95045

22' 8" - Lowest Power

21' 6" - Highest Tel Cable

19' 4" - Proposed Metronet

4' - Base offset

Base

34' 9" - 65W - 642279-95046

22' 6" - Lowest Power

20' 9" - Highest Tel Drop

20' 8" - Highest Tel Cable

19' 2" - Proposed Metronet

4' - Base offset

Base

34' 1" - 66W - 64139-95047

22' 11" - Lowest Power

20' 10" - Highest Tel Cable

20' 10" - Highest Tel Drop

19' 7" - Proposed Metronet

4' - Base offset

Base

WIN3441

34' 7" - 67W - 64094-95048

23' 4" - Lowest Power

20' 6" - Highest Tel Cable

20' - Proposed Metronet

19' 10" - Highest Tel Drop

4' - Base offset

Base

38' 5" - 68W - 63996-95048

25' 9" - Lowest Power

24' 5" - Highest Tel Cable

24' 5" - Highest Tel Drop

22' 5" - Proposed Metronet

4' - Base offset

Base

34' 3" - 69W - 63907-95026

23' 4" - Lowest Power

20' 4" - Highest Tel Cable

20' - Proposed Metronet

19' 8" - Proposed Metronet

4' - Base offset

Base

34' - 70W - 63860-94937

26' 8" - Lowest Power

23' 3" - Proposed Metronet

22' 3" - Highest Tel Cable

4' - Base offset
Base

WIN3445

34' 6" - 71W - 63792-94849

24' 9" - Lowest Power

21' 5" - Proposed Metronet

21' - Proposed Metronet

21' - Highest Tel Cable

4' - Base offset

Base

WIN3446

33' 9" - 72W - 63595-94895

24' 2" - Lowest Power

20' 8" - Proposed Metronet

19' 8" - Highest Tel Cable

19' - Highest Tel Drop

4' - Base offset

Base

38' 1" - 73W - 63429-94935

30' 7" - Lowest Power

27' 3" - Proposed Metronet

26' 10" - Proposed Metronet

26' 3" - Highest Tel Drop

25' 11" - Highest Tel Cable

4' - Base offset

Base

44' 7" - 74W - 63391-94882

33' 8" - Lowest Power

30' 4" - Proposed Metronet

28' 1" - Highest Tel Cable

28' 1" - Highest Tel Drop

4' - Base offset

Base

WIN3449

42' 11" - 75W - 63255-94823

35' 4" - Lowest Power

32' - Proposed Metronet

31' 8" - Proposed Metronet

30' 9" - Highest Tel Cable

4' - Base offset

Base

WIN3450

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND

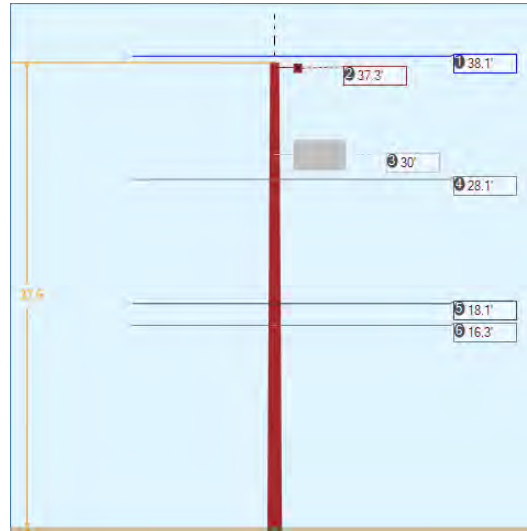
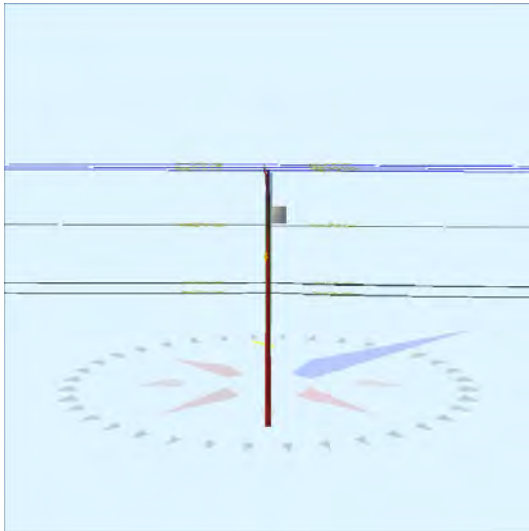
FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

MISCELLANEOUS	
ROADNAME	ROADS
WORK POINTS	
RAILROADS	

STRAND AND TRENCH	
Footage	AERIAL (TENSION SPAN)
Footage	AERIAL (SLACK SPAN)
Footage	NEW / PROPOSED TRENCH
Footage	EXISTING INHERITED TRENCH

Pole Num:	51W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.40	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.98	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.961765 Deg	Longitude:	-84.480666 Deg	Elevation:	871.40469135147		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.6	0.0
Groundline	27.6	0.0
Vertical	13.7	23.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,604	134.1
Groundline	24,604	134.1
GL Allowable	90,746	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 134.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	408	44.9	14,868	60.4	16.4	1,116	428	4	1,120	16.5
Comms	216	23.8	3,471	14.1	3.8	261	368	3	264	3.9
GenericEquipments	70	7.7	2,118	8.6	2.3	159	817	8	166	2.4
Pole	209	23.0	3,953	16.1	4.4	297	2,169	20	317	4.7
Crossarms	1	0.1	51	0.2	0.1	4	95	1	5	0.1
Insulators	4	0.5	144	0.6	0.2	11	57	1	11	0.2
Pole Load	908	100.0	24,604	100.0	27.1	1,846	3,934	36	1,883	27.7
Pole Reserve Capacity			66,142		72.9	4,954			4,917	72.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 134.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	412	45.3	15,023	61.1	16.6	1,127	466	4	1,132	16.6
Unknown, COMMUNICATION	216	23.8	3,459	14.1	3.8	260	387	4	263	3.9
<Undefined>	71	7.8	2,169	8.8	2.4	163	912	8	171	2.5
Pole	209	23.0	3,953	16.1	4.4	297	2,169	20	317	4.7
Totals:	908	100.0	24,604	100.0	27.1	1,846	3,934	36	1,883	27.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.12	5.43	0.7200	0.15	0.462	88.8	47.2	88.8	6,210	12,674	1	1,204	13,879
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.12	5.43	0.7200	0.12	0.462	81.9	226.7	81.9	6,210	-10,610	1	1,110	-9,498
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.12	45.33	0.7200	0.15	0.462	88.8	47.2	88.8	6,210	12,674	-240	1,204	13,638
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.12	45.33	0.7200	0.12	0.462	81.9	226.7	81.9	6,210	-10,610	-221	1,110	-9,721
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.12	45.33	0.7200	0.15	0.462	88.8	47.2	88.8	6,210	12,674	243	1,204	14,121
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.12	45.33	0.7200	0.12	0.462	81.9	226.7	81.9	6,210	-10,610	224	1,110	-9,276

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.14	6.72	0.3980	0.15	0.145	88.8	47.2	88.8	2,128	3,204	-16	654	3,841
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.14	6.72	0.3980	0.13	0.145	81.9	226.7	81.9	2,128	-2,682	-15	603	-2,094
Totals:											6,717	-25	8,198	14,890	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.10	7.31	1.3300	1.16	0.337	88.8	47.2	88.8	925	896	-43	857	1,710
CATV	CATV 1.0	Unknown, COMMUNICATION	18.10	7.31	1.3300	1.06	0.337	81.9	226.7	81.9	925	-750	-39	790	1
Telco	TELE 1.5	Unknown, COMMUNICATION	16.34	7.42	1.5000	1.33	0.900	88.8	47.2	88.8	2,000	1,749	-75	845	2,519
Telco	TELE 1.5	Unknown, COMMUNICATION	16.34	7.42	1.5000	1.21	0.900	81.9	226.7	81.9	2,000	-1,464	-69	780	-753
Totals:											431	-226	3,272	3,476	

GenericEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	Capacitor Bank	30.00	22.11	45.0	0.0	430.00	30.00	30.00	--	42.00	23	2,098	2,121
Totals:											23	2,098	2,121

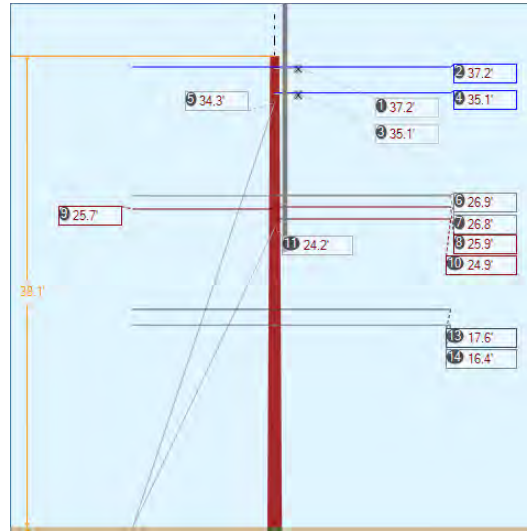
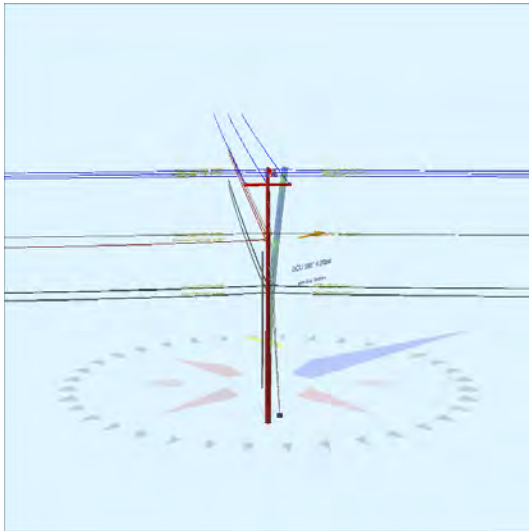
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	37.31	5.43	221.9	221.9	50.00	4.50	3.50	96.00	2	49	51	
Totals:											2	49	51

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.50	0.00	221.9	0.0	6.00	3.50	7.50	0	48	48
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.50	45.00	305.1	0.0	6.00	3.50	7.50	-43	48	5
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.50	-45.00	138.8	0.0	6.00	3.50	7.50	43	48	91
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.14	0.00	311.9	221.9	2.00	3.00	3.19	-2	13	11
Bolt	Three Bolt	Unknown, COMMUNICATION	18.10	0.00	311.9	221.9	5.00	3.00	0.00	-6	0	-6

Bolt	Three Bolt	Unknown, COMMUNICATION	16.34	0.00	311.9	221.9	5.00	3.00	0.00	-6	0	-6
Totals:										-13	157	144

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	23.47	33.54	10.84	15.67	7.32	11.78	1.60e+6	60.00	57.00	37.61	28,678	287.19	7.30

Pole Num:	52W - 23933-4728	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.89	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.17	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.961549 Deg	Longitude:	-84.480812 Deg	Elevation:	860.161894591486		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.0	355.6
Groundline	37.0	35.6
Vertical	28.6	309.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,792	355.6
Groundline	22,792	35.6
GL Allowable	92,146	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.2	129.0		84.2	355.6	85.3	310.0
? EHS 7/16 (Down)			34.3	73.4	355.6	81.8	310.0
? EHS 7/16 (Down)			24.2	73.2	355.6	81.5	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 350.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	10,421	535.8	154,958	679.9	168.2	23,189	972	9	23,198	341.1
Comms	2,028	104.3	17,105	75.1	18.6	2,560	736	7	2,566	37.7
GuyBraces	-10,792	-554.9	-152,462	-668.9	-165.5	-22,816	34,834	317	-22,499	-330.9
Pole	212	10.9	2,005	8.8	2.2	300	2,214	20	320	4.7
Crossarms	33	1.7	618	2.7	0.7	92	190	2	94	1.4
Risers	18	0.9	133	0.6	0.1	20	45	0	20	0.3
Insulators	24	1.2	436	1.9	0.5	65	93	1	66	1.0
Pole Load	1,945	100.0	22,792	100.0	24.7	3,411	39,084	355	3,766	55.4
Pole Reserve Capacity			69,354		75.3	3,389			3,034	44.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 350.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-328	-16.9	3,061	13.4	3.3	458	35,926	327	785	11.5
Unknown, COMMUNICATION	2,028	104.3	17,109	75.1	18.6	2,560	755	7	2,567	37.8
Pole	212	10.9	2,005	8.8	2.2	300	2,214	20	320	4.7
<Undefined>	33	1.7	618	2.7	0.7	92	190	2	94	1.4
Totals:	1,945	100.0	22,792	100.0	24.7	3,411	39,084	355	3,766	55.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.23	18.21	0.7200	0.12	0.462	81.9	46.7	81.9	6,210	168,615	11	698 169,324
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.23	49.19	0.7200	0.12	0.462	81.9	46.7	81.9	6,210	168,615	-9	698 169,304
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.23	47.89	0.7200	0.12	0.462	81.9	46.7	81.9	6,210	168,615	18	698 169,331
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.23	7.30	0.7200	0.24	0.462	118.7	220.4	118.7	6,210	-194,902	-18	843 -194,078
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.23	46.28	0.7200	0.24	0.462	118.7	220.4	118.7	6,210	-194,902	-23	843 -194,083

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.23	44.89	0.7200	0.24	0.462	118.7	220.4	118.7	6,210	-194,902	18	843	-194,041
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.14	18.34	0.7200	1.25	0.462	140.5	310.6	140.5	2,410	84,058	25	802	84,885
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.14	48.59	0.7200	1.25	0.462	140.5	310.6	140.5	2,410	84,058	29	802	84,889
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.14	48.59	0.7200	1.25	0.462	140.5	310.6	140.5	2,410	84,058	-10	802	84,850
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.89	6.83	0.3980	0.39	0.145	140.5	310.6	140.5	1,828	48,783	20	452	49,255
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.80	6.83	0.3980	0.11	0.145	81.9	46.7	81.9	2,128	41,595	9	370	41,974
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.80	6.83	0.3980	0.22	0.145	118.7	220.4	118.7	2,128	-48,073	-14	447	-47,641
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.91	6.88	0.3980	0.39	0.145	140.5	310.6	140.5	1,828	47,009	20	435	47,465
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	25.74	6.89	0.2570	0.16	0.067	118.7	220.4	118.7	150	-3,255	-9	362	-2,903
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.95	6.94	0.3980	0.39	0.145	140.5	310.6	140.5	1,828	45,266	20	419	45,705
Totals:											304,636	85	9,517	314,237	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.62	7.37	1.3300	1.05	0.337	81.9	46.7	81.9	925	11,887	31	496	12,415
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.62	7.37	1.3300	1.60	0.337	118.7	220.4	118.7	925	-13,741	46	599	-13,096
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.62	7.37	1.3300	1.96	0.337	140.5	310.6	140.5	925	16,180	54	604	16,838
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.36	7.45	1.5000	1.21	0.900	81.9	46.7	81.9	2,000	23,857	55	503	24,416
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.36	7.45	1.5000	1.87	0.900	118.7	220.4	118.7	2,000	-27,577	80	607	-26,889
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.36	7.45	1.5000	2.76	0.900	140.5	310.6	140.6	1,250	20,296	95	612	21,003
		COMMUNICATION													
Totals:											30,904	362	3,420	34,686	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	37.23	5.46	43.5	43.5	50.00	4.50	3.50	96.00	26	535	561	
Normal	Crossarm	35.14	5.59	310.6	310.6	50.00	4.50	3.50	96.00	34	658	691	
Totals:											60	1,193	1,253

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 195.0°	Riser	KU, UTILITY	23.79	6.09	195.0	195.0	23.79	285.43	4.00	4.00	285.43	-22	291	269
Totals:											-22	291	269	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.23	0.00	43.5	3.2	3.00	3.80	12.75	5	87	92
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.23	45.00	126.6	3.2	3.00	3.80	12.75	-12	87	75
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.23	-45.00	320.5	3.2	3.00	3.80	12.75	22	87	109
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.23	0.00	43.5	176.8	3.00	3.80	12.75	-2	87	85
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.23	45.00	126.6	176.8	3.00	3.80	12.75	-19	87	68
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.23	-45.00	320.5	176.8	3.00	3.80	12.75	15	87	102
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.14	0.00	310.6	0.0	3.00	3.80	12.75	7	82	89
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.14	45.00	33.6	0.0	3.00	3.80	12.75	20	82	103
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.14	-45.00	227.7	0.0	3.00	3.80	12.75	-7	82	75
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.89	0.00	310.4	220.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.80	0.00	46.7	46.7	2.00	3.00	3.19	1	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.80	0.00	220.4	220.4	2.00	3.00	3.19	-1	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.91	0.00	310.6	310.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.74	0.00	220.4	220.4	2.00	3.00	3.19	-1	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.95	0.00	310.6	310.6	2.00	3.00	3.19	2	12	13
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	313.5	43.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.36	0.00	313.5	43.5	5.00	3.00	0.00	5	0	5
Totals:										41	845	885

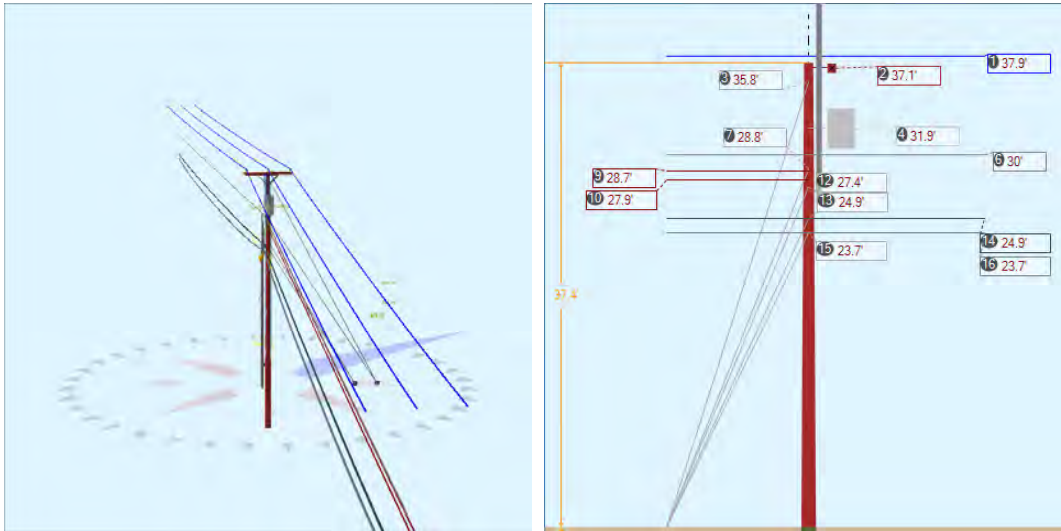
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 7/16	Down	KU, UTILITY	34.34	0.00	18.24	0.438	75.00	129.0	61.8	0.399	37.23	2.37
EHS 7/16	Down	KU, UTILITY	24.21	0.00	18.24	0.438	75.00	129.0	52.8	0.399	28.59	1.81

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	15,310	13,919	13,731	12,102	6,488	-4,835	-162,397
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	15,265	13,877	13,708	10,923	8,283	-6,173	-146,779
Totals:										23,025	14,771	-11,008	-309,176

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	18.24	129.0	32,500	1.00	32,500	27,711	27,355	85.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.29	34.39	10.64	31.67	7.32	11.84	1.60e+6	60.00	57.00	38.11	136,683	1366.58	3.50

Pole Num:	53W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.64	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.89	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.961779 Deg	Longitude:	-84.481194 Deg	Elevation:	856.719378551332		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.7	140.0
Groundline	11.4	128.6
Vertical	15.5	194.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	6,328	149.0
Groundline	10,244	130.0
GL Allowable	90,077	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.5	313.0		54.3	140.0	54.3	134.4
? EHS 3/8 (Down)			27.4	78.3	140.0	86.2	134.4
? Single Helix Anchor	19.2	41.0		12.0	140.0	17.1	220.0
? EHS 3/8 (Down)			28.8	5.1	140.0	9.3	220.0
? EHS 3/8 (Down)			35.8	12.3	140.0	18.0	220.0
? Single Helix Anchor	15.3	41.0		1.3	140.0	3.4	220.0
? EHS 1/4 (Down)			24.9	2.3	140.0	6.4	220.0
? EHS 1/4 (Down)			23.7	1.9	140.0	6.0	220.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 130.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,792	646.2	59,025	576.2	65.5	10,267	796	7	10,275	151.1
Comms	12	1.6	121	1.2	0.1	21	606	6	27	0.4
GuyBraces	-4,624	-623.6	-54,883	-535.8	-60.9	-9,547	18,196	168	-9,379	-137.9
PowerEquipments	41	5.5	1,095	10.7	1.2	191	694	6	197	2.9
Pole	205	27.6	1,669	16.3	1.9	290	2,148	20	310	4.6
Crossarms	65	8.7	1,044	10.2	1.2	182	190	2	183	2.7
Risers	242	32.7	2,031	19.8	2.3	353	219	2	355	5.2
Insulators	9	1.2	141	1.4	0.2	25	99	1	26	0.4
Pole Load	742	100.0	10,244	100.0	11.4	1,782	22,949	212	1,994	29.3
Pole Reserve Capacity			79,833		88.6	5,018			4,806	70.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 130.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	446	60.1	7,255	70.8	8.1	1,262	19,654	181	1,443	21.2
Unknown, COMMUNICATION	26	3.6	276	2.7	0.3	48	957	9	57	0.8
Pole	205	27.6	1,669	16.3	1.9	290	2,148	20	310	4.6
<Undefined>	65	8.7	1,044	10.2	1.2	182	190	2	183	2.7
Totals:	742	100.0	10,244	100.0	11.4	1,782	22,949	212	1,994	29.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.90	0.00	0.7200	1.24	0.462	140.5	305.4	140.5	2,410	-118,465	0	38 -118,427
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.90	0.00	0.7200	1.24	0.462	140.5	130.6	140.5	2,410	118,835	0	-3 118,832
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.90	45.00	0.7200	1.24	0.462	140.5	305.4	140.5	2,410	-118,465	-30	38 -118,458
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.90	45.00	0.7200	1.24	0.462	140.5	130.6	140.5	2,410	118,835	-30	-3 118,801
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.90	45.00	0.7200	1.24	0.462	140.5	305.4	140.5	2,410	-118,465	30	38 -118,397
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.90	45.00	0.7200	1.24	0.462	140.5	130.6	140.5	2,410	118,835	30	-3 118,862
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.96	6.60	0.3980	0.35	0.145	140.5	130.6	140.5	1,828	71,197	1	-2 71,195
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.96	6.60	0.3980	0.35	0.145	140.5	305.4	140.5	1,828	-70,975	1	22 -70,952
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.66	6.68	0.3980	0.35	0.145	140.5	130.6	140.5	1,828	68,101	26	-2 68,125
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.94	6.72	0.3980	0.35	0.145	140.5	130.6	140.5	1,828	66,402	26	-2 66,426
										Totals:	135,835	53	120	136,008

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, COMMUNICATION	24.85	6.90	1.3300	1.95	0.337	140.5	130.6	140.5	925	29,885	-1	-3 29,881
CATV	CATV 1.0	Unknown, COMMUNICATION	24.85	6.90	1.3300	1.95	0.337	140.5	305.4	140.5	925	-29,792	-1	37 -29,756

Telco	TELE 1.5	Unknown, COMMUNICATION	23.69	6.97	1.5000	2.75	0.900	140.5	130.6	140.6	1,250	38,495	-1	-4	38,490
Telco	TELE 1.5	Unknown, COMMUNICATION	23.69	6.97	1.5000	2.76	0.900	140.5	305.4	140.6	1,250	-38,375	-1	39	-38,338
Totals:												213	-4	69	278

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA KU, UTILITY	31.94	20.98	130.0	130.0	365.00	39.00	--	22.00	--	1,213	1,312	2,524	
Totals:												1,213	1,312	2,524

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	37.09	5.43	305.4	305.4	50.00	4.50	3.50	96.00	0	2,406	2,406		
Totals:												0	2,406	2,406

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 230.0°	Riser KU, UTILITY	30.21	6.09	230.0	230.0	30.21	362.47	4.00	4.00	362.47	-5	1,398	1,392	
Riser 250.0°	Riser KU, UTILITY	28.76	6.09	250.0	250.0	28.76	345.15	4.00	4.00	345.15	-14	1,191	1,177	
Riser 210.0°	Riser KU, UTILITY	28.76	6.09	210.0	210.0	28.76	345.15	4.00	4.00	345.15	5	1,191	1,196	
Riser 190.0°	Riser KU, UTILITY	27.71	6.09	190.0	190.0	27.71	332.49	4.00	4.00	332.49	14	901	915	
Totals:												-1	4,680	4,679

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 5 kV KU, UTILITY	37.28	0.00	305.4	0.0	6.00	3.50	7.50	0	94	94
Pin	Pin Insulator - 5 kV KU, UTILITY	37.28	45.00	28.5	0.0	6.00	3.50	7.50	-7	94	87
Pin	Pin Insulator - 5 kV KU, UTILITY	37.28	-45.00	222.3	0.0	6.00	3.50	7.50	7	94	101
Spool	Spool Insulator - 25 kV KU, UTILITY	29.96	0.00	218.0	128.0	2.00	3.00	3.19	0	14	14
Spool	Spool Insulator - 25 kV KU, UTILITY	28.66	0.00	130.6	130.6	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV KU, UTILITY	27.94	0.00	130.6	130.6	2.00	3.00	3.19	2	13	15
Bolt	Single Bolt Unknown, COMMUNICATION	24.85	0.00	220.6	220.6	5.00	3.00	0.00	0	0	0

Bolt	Single Bolt	Unknown, COMMUNICATION	23.69	0.00	220.6	220.6	5.00	3.00	0.00	0	0	0
Totals:										4	322	326

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	27.39	0.00	13.46	0.375	75.00	313.0	63.6	0.273	28.86	1.97
EHS 3/8	Down	KU, UTILITY	28.82	0.00	19.17	0.375	75.00	41.0	56.2	0.273	32.93	0.15
EHS 3/8	Down	KU, UTILITY	35.83	0.00	19.17	0.375	75.00	41.0	61.6	0.273	38.99	0.42
EHS 1/4	Down	Unknown, COMMUNICATION	24.85	0.00	15.28	0.25	75.00	41.0	58.2	0.121	27.49	0.05
EHS 1/4	Down	Unknown, COMMUNICATION	23.69	0.00	15.28	0.25	75.00	41.0	57.0	0.121	26.49	0.04

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,944	10,858	10,853	9,721	4,825	-4,819	-128,152
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,284	1,167	700	582	390	7	450
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,492	2,265	1,709	1,504	812	15	881
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	380	346	139	118	73	1	188
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	359	327	112	94	61	1	169
Totals:										12,018	6,161	-4,795	-126,463

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	13.46	313.0	20,000	1.00	20,000	10,858	10,853	54.3
Single Helix Anchor			18.00	19.17	41.0	20,000	1.00	20,000	3,429	2,406	17.1
Single Helix Anchor			18.00	15.28	41.0	20,000	1.00	20,000	673	251	3.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	27.99	34.23	10.61	23.77	7.32	11.75	1.60e+6	60.00	57.00	37.36	147,927	1480.59	6.45

Pole Num:	54W - 23933-4714	Pole Length / Class:	60 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	10.00	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.52	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.961979 Deg	Longitude:	-84.481613 Deg	Elevation:	860.332282760508		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.8	0.0
Groundline	35.8	0.0
Vertical	19.8	30.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	52,023	214.5
Groundline	52,023	214.5
GL Allowable	147,889	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 214.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	574	41.3	27,985	53.8	18.9	1,282	665	4	1,286	18.9
Comms	349	25.2	11,357	21.8	7.7	520	573	4	524	7.7
PowerEquipments	42	3.0	2,029	3.9	1.4	93	694	5	98	1.4
Pole	318	22.9	7,754	14.9	5.2	355	3,787	25	380	5.6
Crossarms	1	0.1	62	0.1	0.0	3	95	1	3	0.1
Risers	97	7.0	2,445	4.7	1.7	112	226	2	113	1.7
Insulators	8	0.5	392	0.8	0.3	18	70	0	18	0.3
Pole Load	1,387	100.0	52,023	100.0	35.2	2,383	6,110	41	2,423	35.6
Pole Reserve Capacity			95,866		64.8	4,417			4,377	64.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 214.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	719	51.9	32,838	63.1	22.2	1,504	1,636	11	1,515	22.3
Unknown, COMMUNICATION	349	25.2	11,369	21.9	7.7	521	592	4	525	7.7
Pole	318	22.9	7,754	14.9	5.2	355	3,787	25	380	5.6
<Undefined>	1	0.1	62	0.1	0.0	3	95	1	3	0.1
Totals:	1,387	100.0	52,023	100.0	35.2	2,383	6,110	41	2,423	35.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	50.88	0.00	0.7200	1.09	0.462	124.9	304.0	124.9	2,410	1,131	0	2,258	3,389
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	50.88	0.00	0.7200	1.27	0.462	140.5	125.4	140.5	2,410	1,867	0	2,543	4,409
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.82	45.37	0.7200	1.09	0.462	124.9	304.0	124.9	2,410	1,108	-339	2,211	2,979
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.82	45.37	0.7200	1.27	0.462	140.5	125.4	140.5	2,410	1,828	-382	2,490	3,936
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.82	45.37	0.7200	1.09	0.462	124.9	304.0	124.9	2,410	1,108	340	2,211	3,659

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.82	45.37	0.7200	1.27	0.462	140.5	125.4	140.5	2,410	1,828	383	2,490	4,701
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.68	6.97	0.3980	0.47	0.145	140.5	125.4	140.5	1,828	1,159	27	1,532	2,718
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.68	6.97	0.3980	0.37	0.145	124.9	304.0	124.9	1,828	702	24	1,361	2,087
Totals:											10,731	52	17,094	27,878	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	32.01	7.54	1.3300	1.98	0.337	140.5	125.4	140.5	925	451	69	2,398	2,918
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	32.01	7.54	1.3300	1.72	0.337	124.9	304.0	124.9	925	273	62	2,130	2,464
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	30.79	7.61	1.5000	2.77	0.900	140.5	125.4	140.6	1,250	586	122	2,521	3,229
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	30.79	7.61	1.5000	2.35	0.900	124.9	304.0	125.0	1,250	355	109	2,239	2,702
		COMMUNICATION													
Totals:											1,664	362	9,288	11,314	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	45.72	21.23	130.0	130.0	365.00	39.00	--	22.00	--	117	1,904	2,021
Totals:											117	1,904	2,021	

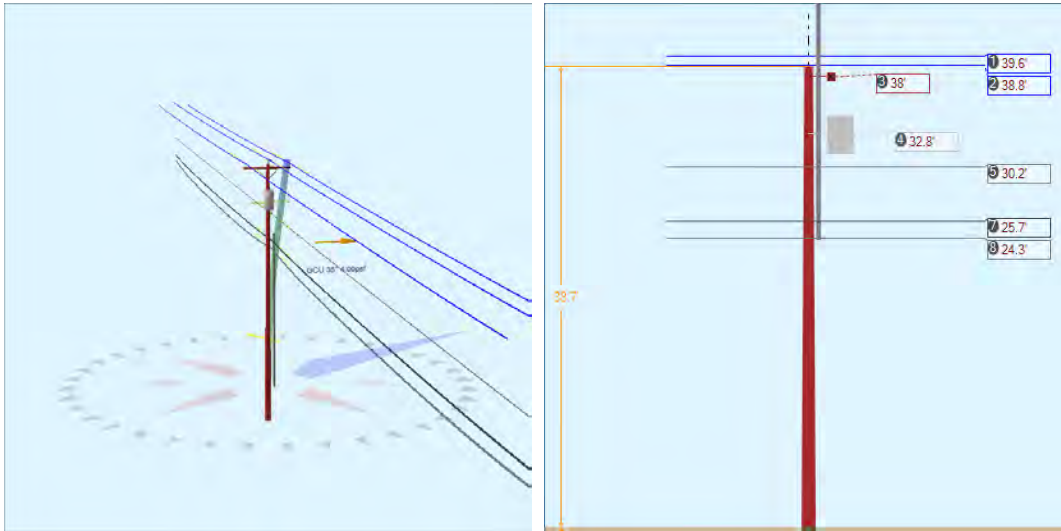
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	49.01	5.79	304.0	304.0	50.00	4.50	3.50	96.00	0	61	61	
Totals:											0	61	61

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 25.0°	Riser	KU, UTILITY	39.67	7.28	25.0	25.0	39.67	476.06	4.00	4.00	476.06	-42	539	497
Riser 50.0°	Riser	KU, UTILITY	39.67	7.28	50.0	50.0	39.67	476.06	4.00	4.00	476.06	-41	519	478
Riser 360.0°	Riser	KU, UTILITY	39.67	7.28	360.0	360.0	39.67	476.06	4.00	4.00	476.06	-35	1,496	1,461
Totals:											-119	2,554	2,436	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	KU, UTILITY	50.00	0.00	0.0	0.0	13.00	9.00	10.50	0	231	231
Pin	Pin Insulator - 5 kV	KU, UTILITY	49.20	45.00	26.7	0.0	6.00	3.50	7.50	-43	63	20
Pin	Pin Insulator - 5 kV	KU, UTILITY	49.20	-45.00	221.3	0.0	6.00	3.50	7.50	43	63	106
Spool	Spool Insulator - 25 kV	KU, UTILITY	41.68	0.00	214.7	124.7	2.00	3.00	3.19	2	19	22
Bolt	Three Bolt	Unknown, COMMUNICATION	32.01	0.00	214.7	124.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	30.79	0.00	214.7	124.7	5.00	3.00	0.00	6	0	6
Totals:										14	376	391

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	30.69	33.92	12.63	22.36	7.96	13.86	1.60e+6	60.00	57.00	50.00	30,865	308.60	5.05

Pole Num:	55W - 23933-4708	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.32	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.38	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.962199 Deg	Longitude:	-84.481963 Deg	Elevation:	887.278326551506		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.8	34.8
Groundline	29.8	34.8
Vertical	17.9	34.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,419	36.3
Groundline	27,419	36.3
GL Allowable	93,711	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 36.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	355	37.6	13,355	48.7	14.3	965	640	6	971	14.3
Comms	289	30.6	7,559	27.6	8.1	546	551	5	551	8.1
PowerEquipments	42	4.4	1,294	4.7	1.4	94	694	6	100	1.5
Pole	217	23.0	4,229	15.4	4.5	306	2,263	20	326	4.8
Crossarms	1	0.1	46	0.2	0.1	3	95	1	4	0.1
Risers	32	3.4	631	2.3	0.7	46	102	1	47	0.7
Insulators	8	0.8	305	1.1	0.3	22	70	1	23	0.3
Pole Load	944	100.0	27,419	100.0	29.3	1,981	4,415	40	2,021	29.7
Pole Reserve Capacity			66,292		70.7	4,819			4,779	70.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 36.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	437	46.3	15,574	56.8	16.6	1,125	1,487	13	1,139	16.7
Unknown, COMMUNICATION	289	30.6	7,570	27.6	8.1	547	570	5	552	8.1
Pole	217	23.0	4,229	15.4	4.5	306	2,263	20	326	4.8
<Undefined>	1	0.1	46	0.2	0.1	3	95	1	4	0.1
Totals:	944	100.0	27,419	100.0	29.3	1,981	4,415	40	2,021	29.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.55	0.00	0.7200	1.09	0.462	124.9	124.0	124.9	2,410	3,857	0	1,758	5,615
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.55	0.00	0.7200	1.15	0.462	130.6	304.1	130.6	2,410	-3,691	0	1,837	-1,854
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.78	45.33	0.7200	1.09	0.462	124.9	124.0	124.9	2,410	3,782	338	1,723	5,844
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.78	45.33	0.7200	1.15	0.462	130.6	304.1	130.6	2,410	-3,619	353	1,802	-1,464
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.78	45.33	0.7200	1.09	0.462	124.9	124.0	124.9	2,410	3,782	-341	1,723	5,165

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.78	45.33	0.7200	1.15	0.462	130.6	304.1	130.6	2,410	-3,619	-357	1,802	-2,174
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.24	6.66	0.3980	0.37	0.145	124.9	124.0	124.9	1,828	2,235	23	988	3,247
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.24	6.66	0.3980	0.41	0.145	130.6	304.1	130.6	1,828	-2,139	24	1,033	-1,082
Totals:											589	40	12,667	13,296	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.68	6.93	1.3300	1.72	0.337	124.9	124.0	124.9	925	961	57	1,711	2,728
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.68	6.93	1.3300	1.81	0.337	130.6	304.1	130.6	925	-919	59	1,788	928
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	24.26	7.01	1.5000	2.35	0.900	124.9	124.0	125.0	1,250	1,226	100	1,766	3,092
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	24.26	7.01	1.5000	2.49	0.900	130.6	304.1	130.6	1,250	-1,173	105	1,846	777
		COMMUNICATION													
Totals:											94	321	7,111	7,526	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	32.77	21.01	130.0	130.0	365.00	39.00	--	22.00	--	-78	1,366	1,288
Totals:											-78	1,366	1,288	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		37.97	5.45	304.1	304.1	50.00	4.50	3.50	96.00	-2	47	45
Totals:											-2	47	45

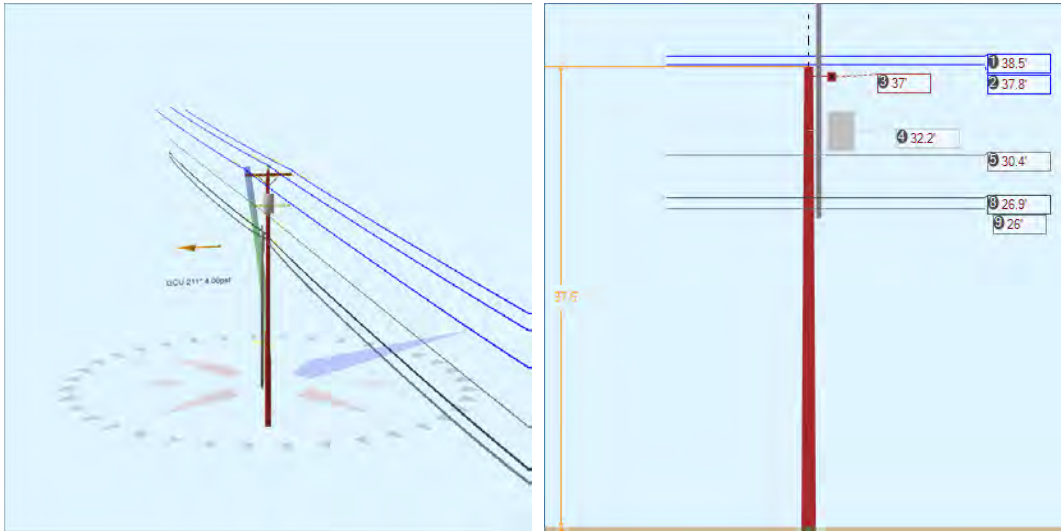
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 20.0°	Riser	KU, UTILITY	26.77	6.09	20.0	20.0	26.77	321.28	4.00	4.00	321.28	26	284	310
Riser 50.0°	Riser	KU, UTILITY	26.77	6.09	50.0	50.0	26.77	321.28	4.00	4.00	321.28	26	293	319
Totals:											51	577	628	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	38.68	0.00	0.0	0.0	13.00	9.00	10.50	0	180	180
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.16	45.00	27.2	0.0	6.00	3.50	7.50	43	49	91
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.16	-45.00	221.0	0.0	6.00	3.50	7.50	-43	49	6
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.24	0.00	34.1	304.1	2.00	3.00	3.19	2	14	16
Bolt	Three Bolt	Unknown, COMMUNICATION	25.68	0.00	34.1	304.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	24.26	0.00	34.1	304.1	5.00	3.00	0.00	6	0	6
Totals:										13	291	304

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.49	33.80	10.88	17.19	7.32	11.90	1.60e+6	60.00	57.00	38.68	24,661	246.64	5.59

Pole Num:	56W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.38	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.99	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.962392 Deg	Longitude:	-84.482331 Deg	Elevation:	869.566534678261		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.7	0.0
Groundline	34.7	0.0
Vertical	18.4	25.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,926	210.4
Groundline	30,926	210.4
GL Allowable	90,784	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 210.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	420	40.2	15,449	50.0	17.0	1,154	646	6	1,160	17.1
Comms	306	29.2	8,424	27.2	9.3	629	556	5	635	9.3
PowerEquipments	42	4.0	1,550	5.0	1.7	116	694	6	122	1.8
Pole	210	20.0	3,975	12.9	4.4	297	2,171	20	317	4.7
Crossarms	1	0.1	52	0.2	0.1	4	95	1	5	0.1
Risers	59	5.7	1,178	3.8	1.3	88	157	1	89	1.3
Insulators	8	0.7	298	1.0	0.3	22	70	1	23	0.3
Pole Load	1,046	100.0	30,926	100.0	34.1	2,311	4,388	40	2,351	34.6
Pole Reserve Capacity			59,858		65.9	4,489			4,449	65.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 210.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	529	50.6	18,465	59.7	20.3	1,380	1,548	14	1,394	20.5
Unknown, COMMUNICATION	306	29.2	8,434	27.3	9.3	630	575	5	636	9.3
Pole	210	20.0	3,975	12.9	4.4	297	2,171	20	317	4.7
<Undefined>	1	0.1	52	0.2	0.1	4	95	1	5	0.1
Totals:	1,046	100.0	30,926	100.0	34.1	2,311	4,388	40	2,351	34.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.49	0.00	0.7200	1.15	0.462	130.6	124.1	130.6	2,410	6,007	0	1,783	7,790
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.49	0.00	0.7200	1.11	0.462	127.1	303.6	127.1	2,410	-5,199	0	1,737	-3,461
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.78	45.33	0.7200	1.15	0.462	130.6	124.1	130.6	2,410	5,896	357	1,750	8,003
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.78	45.33	0.7200	1.11	0.462	127.1	303.6	127.1	2,410	-5,102	348	1,705	-3,049
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.78	45.33	0.7200	1.15	0.462	130.6	124.1	130.6	2,410	5,896	-352	1,750	7,294

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.78	45.33	0.7200	1.11	0.462	127.1	303.6	127.1	2,410	-5,102	-343	1,705	-3,740
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.40	6.59	0.3980	0.40	0.145	130.6	124.1	130.6	1,828	3,596	24	1,036	4,655
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.40	6.59	0.3980	0.38	0.145	127.1	303.6	127.1	1,828	-3,112	23	1,009	-2,080
Totals:											2,880	57	12,475	15,412	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	26.93	6.79	1.3300	1.81	0.337	130.6	124.1	130.6	925	1,612	58	1,869	3,539
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	26.93	6.79	1.3300	1.75	0.337	127.1	303.6	127.1	925	-1,395	57	1,821	483
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	26.01	6.85	1.5000	2.50	0.900	130.6	124.1	130.6	1,250	2,104	102	1,973	4,179
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	26.01	6.85	1.5000	2.40	0.900	127.1	303.6	127.2	1,250	-1,821	99	1,923	202
		COMMUNICATION													
Totals:											500	316	7,587	8,403	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	32.21	20.98	130.0	130.0	365.00	39.00	--	22.00	--	202	1,343	1,546
Totals:											202	1,343	1,546	

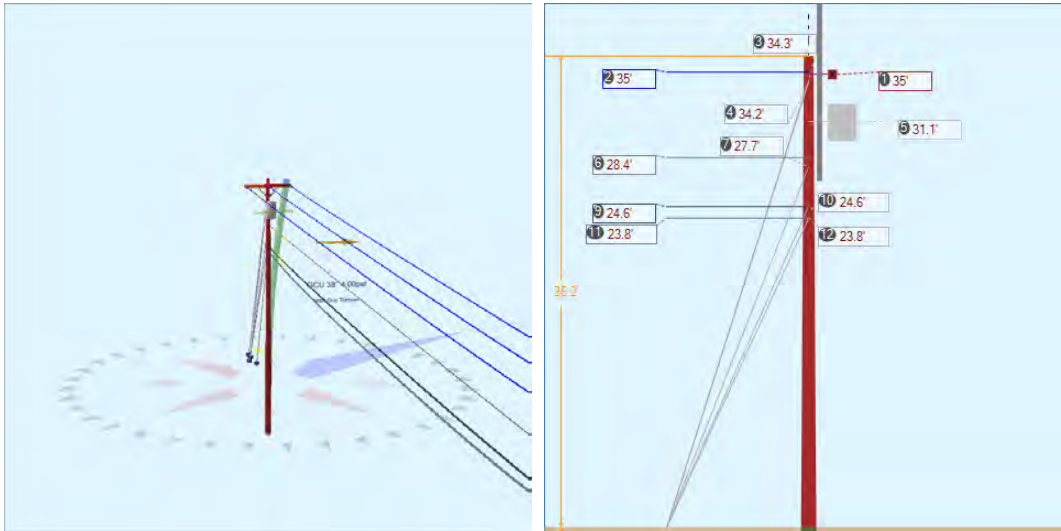
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		36.97	5.45	123.9	123.9	50.00	4.50	3.50	96.00	3	49	52
Totals:											3	49	52

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 190.0°	Riser	KU, UTILITY	27.31	6.09	190.0	190.0	27.31	327.72	4.00	4.00	327.72	25	410	436
Riser 215.0°	Riser	KU, UTILITY	27.31	6.09	215.0	215.0	27.31	327.72	4.00	4.00	327.72	27	87	114
Riser 240.0°	Riser	KU, UTILITY	28.12	6.09	240.0	240.0	28.12	337.44	4.00	4.00	337.44	24	602	626
Totals:											77	1,099	1,176	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	KU, UTILITY	37.62	0.00	0.0	0.0	13.00	9.00	10.50	0	175	175
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.15	45.00	207.0	0.0	6.00	3.50	7.50	43	48	91
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.15	-45.00	40.8	0.0	6.00	3.50	7.50	-42	48	5
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.40	0.00	213.9	123.9	2.00	3.00	3.19	2	14	16
Bolt	Three Bolt	Unknown, COMMUNICATION	26.93	0.00	213.9	123.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	26.01	0.00	213.9	123.9	5.00	3.00	0.00	5	0	5
Totals:										13	284	298

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.33	33.82	10.76	17.05	7.32	11.78	1.60e+6	60.00	57.00	37.62	23,904	238.50	5.43

Pole Num:	57W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Deadend
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.79	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.46	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.962590 Deg	Longitude:	-84.482717 Deg	Elevation:	872.976008841089		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	36.9	0.0
Groundline	36.9	0.0
Vertical	34.7	31.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,564	40.4
Groundline	27,564	40.4
GL Allowable	86,981	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.3	305.1	34.3	43.4	37.9	44.0	140.0
? Single Helix Anchor ? EHS 3/8 (Down)	19.3	305.1	34.2	62.7	37.9	69.9	140.0
? Single Helix Anchor ? EHS 3/8 (Down)			27.7	69.6	37.9	70.8	135.0
? Single Helix Anchor ? EHS 1/4 (Down)	16.5	302.8	24.7	60.0	37.9	66.7	130.0
? Single Helix Anchor ? EHS 1/4 (Down)	14.6	306.7	23.8	40.4	37.9	45.7	140.0
				12.7	37.9	12.7	50.0
				42.3	37.9	46.7	50.0
				7.3	37.9	9.6	200.0
				24.4	37.9	35.3	200.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 40.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,560	148.9	47,514	172.4	54.6	4,106	318	3	4,109	60.4
Comms	475	45.3	10,396	37.7	12.0	898	274	3	901	13.2
GuyBraces	-1,273	-121.5	-35,824	-130.0	-41.2	-3,096	34,080	322	-2,773	-40.8
PowerEquipments	36	3.5	1,203	4.4	1.4	104	636	6	110	1.6
Pole	200	19.1	3,299	12.0	3.8	285	2,051	19	304	4.5
Crossarms	3	0.3	95	0.4	0.1	8	190	2	10	0.1
Risers	39	3.7	640	2.3	0.7	55	51	0	56	0.8
Insulators	8	0.7	239	0.9	0.3	21	40	0	21	0.3
Pole Load	1,048	100.0	27,564	100.0	31.7	2,382	37,642	356	2,738	40.3
Pole Reserve Capacity			59,417		68.3	4,418			4,062	59.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 40.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	589	56.2	18,619	67.6	21.4	1,609	30,039	284	1,893	27.8
Unknown, COMMUNICATION	256	24.4	5,551	20.1	6.4	480	5,362	51	530	7.8
Pole	200	19.1	3,299	12.0	3.8	285	2,051	19	304	4.5
<Undefined>	3	0.3	95	0.4	0.1	8	190	2	10	0.1
Totals:	1,048	100.0	27,564	100.0	31.7	2,382	37,642	356	2,738	40.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.98	48.55	0.7200	1.11	0.462	127.1	123.6	127.1	2,410	12,962	28	1,566	14,556
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.98	18.23	0.7200	1.11	0.462	127.1	123.6	127.1	2,410	12,962	3	1,566	14,531
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.98	48.55	0.7200	1.11	0.462	127.1	123.6	127.1	2,410	12,962	-25	1,566	14,503
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.42	6.62	0.3980	0.38	0.145	127.1	123.6	127.1	1,828	7,988	3	937	8,928
Totals:											46,873	9	5,636	52,518	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	24.65	6.84	1.3300	1.75	0.337	127.1	123.6	127.1	925	3,505	7	1,656	5,168
Telco	TELE 1.5	Unknown, COMMUNICATION	23.76	6.90	1.5000	2.40	0.900	127.1	123.6	127.2	1,250	4,567	12	1,744	6,323
Totals:											8,073	19	3,400	11,491	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	31.09	20.96	120.0	120.0	335.00	34.00	--	22.00	--	201	1,130	1,330
Totals:											201	1,130	1,330	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		34.98	5.48	123.6	123.6	50.00	4.50	3.50	96.00	0	106	106
Totals:										0	106	106

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	KU, UTILITY	27.04	6.09	360.0	360.0	27.04	324.42	4.00	4.00	324.42	10	698	708
Totals:										10	698	708	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	KU, UTILITY	34.98	-45.00	40.6	0.0	3.00	3.80	12.75	22	82	105	
Deadend	KU, UTILITY	34.98	0.00	123.6	0.0	3.00	3.80	12.75	1	82	83	
Deadend	KU, UTILITY	34.98	45.00	206.7	0.0	3.00	3.80	12.75	-20	82	62	
Spool	KU, UTILITY	28.42	0.00	123.6	123.6	2.00	3.00	3.19	0	13	13	
Bolt	Unknown, COMMUNICATION	24.65	0.00	123.6	123.6	5.00	3.00	0.00	1	0	1	
Bolt	Unknown, COMMUNICATION	23.76	0.00	123.6	123.6	5.00	3.00	0.00	1	0	1	
Totals:										5	260	265

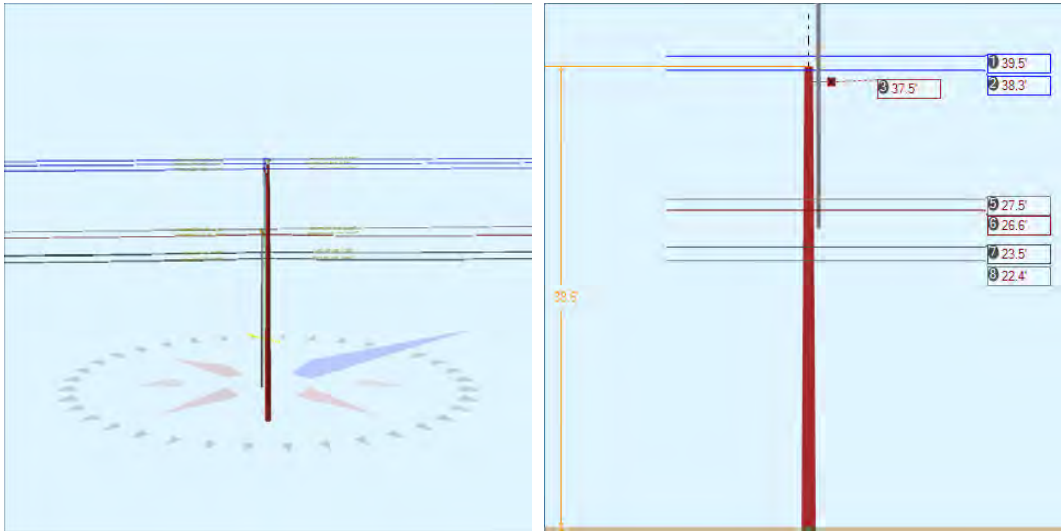
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	KU, UTILITY	34.33	0.00	21.29	0.375	75.00	305.1	58.0	0.273	38.74	2.12
EHS 3/8	KU, UTILITY	34.21	0.00	19.27	0.375	75.00	305.1	60.4	0.273	37.61	1.97
EHS 3/8	KU, UTILITY	27.69	0.00	19.27	0.375	75.00	305.1	55.0	0.273	32.04	1.13
EHS 1/4	Unknown, COMMUNICATION	24.65	0.00	16.49	0.25	75.00	302.8	56.0	0.121	27.95	1.00
EHS 1/4	Unknown, COMMUNICATION	23.76	0.00	14.62	0.25	75.00	306.7	58.2	0.121	26.21	0.54

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,684	8,804	8,686	7,365	4,604	-421	-13,886
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,248	8,407	8,322	7,235	4,111	-381	-12,463
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,340	5,763	5,604	4,589	3,216	-298	-7,889
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,793	2,539	2,533	2,101	1,416	-186	-4,340
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,112	1,920	1,461	1,241	770	-50	-1,017
Totals:										22,531	14,117	-1,337	-39,596

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.29	305.1	20,000	1.00	20,000	8,804	8,686	44.0
Single Helix Anchor		18.00	19.27	305.1	20,000	1.00	20,000	14,154	13,910	70.8
Single Helix Anchor		18.00	16.49	302.8	20,000	1.00	20,000	2,539	2,533	12.7
Single Helix Anchor		18.00	14.62	306.7	20,000	1.00	20,000	1,920	1,461	9.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.99	34.74	10.33	31.95	7.32	11.61	1.60e+6	60.00	57.00	36.21	108,566	1084.78	2.88

Pole Num:	58W - 27774-4726	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.39	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.36	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.961317 Deg	Longitude:	-84.481079 Deg	Elevation:	848.18157983208		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.8	0.0
Groundline	30.8	0.0
Vertical	10.1	22.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,422	310.1
Groundline	28,422	310.1
GL Allowable	93,538	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 310.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	467	46.5	16,765	59.0	17.9	1,216	491	4	1,220	17.9
Comms	248	24.7	5,906	20.8	6.3	428	390	4	432	6.4
Pole	216	21.5	4,207	14.8	4.5	305	2,257	20	325	4.8
Crossarms	1	0.1	47	0.2	0.1	3	95	1	4	0.1
Risers	64	6.4	1,178	4.2	1.3	86	53	0	86	1.3
Insulators	8	0.8	318	1.1	0.3	23	74	1	24	0.3
Pole Load	1,004	100.0	28,422	100.0	30.4	2,061	3,360	30	2,092	30.8
Pole Reserve Capacity			65,116		69.6	4,739			4,708	69.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 310.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	539	53.7	18,250	64.2	19.5	1,324	599	5	1,329	19.5
Unknown, COMMUNICATION	248	24.7	5,918	20.8	6.3	429	409	4	433	6.4
Pole	216	21.5	4,207	14.8	4.5	305	2,257	20	325	4.8
<Undefined>	1	0.1	47	0.2	0.1	3	95	1	4	0.1
Totals:	1,004	100.0	28,422	100.0	30.4	2,061	3,360	30	2,092	30.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.49	0.00	0.7200	0.29	0.462	62.0	221.3	62.0	3,210	2,559	0	872	3,431
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.49	0.00	0.7200	0.77	0.462	118.7	40.4	118.7	3,210	-567	0	1,669	1,102
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.30	45.33	0.7200	0.29	0.462	62.0	221.3	62.0	3,210	2,482	169	845	3,496
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.30	45.33	0.7200	0.77	0.462	118.7	40.4	118.7	3,210	-550	324	1,618	1,392
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.30	45.33	0.7200	0.29	0.462	62.0	221.3	62.0	3,210	2,482	-168	845	3,159
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.30	45.33	0.7200	0.77	0.462	118.7	40.4	118.7	3,210	-550	-322	1,618	747

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.49	6.82	0.3980	0.26	0.145	118.7	40.4	118.7	2,128	-261	22	854	615
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.49	6.82	0.3980	0.07	0.145	62.0	221.3	62.0	2,128	1,180	12	446	1,638
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	26.59	6.87	0.2570	0.22	0.067	118.7	40.4	118.7	150	-18	14	697	693
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	26.59	6.87	0.2570	0.06	0.067	62.0	221.3	62.0	150	80	8	364	452
Totals:											6,839	58	9,829	16,726	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	23.47	7.06	1.3300	1.61	0.337	118.7	40.4	118.7	925	-97	55	1,487	1,445
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.47	7.06	1.3300	0.78	0.337	62.0	221.3	62.0	925	438	29	777	1,243
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.35	7.12	1.5000	1.88	0.900	118.7	40.4	118.7	2,000	-200	97	1,547	1,444
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.35	7.12	1.5000	0.89	0.900	62.0	221.3	62.0	2,000	902	50	808	1,760
		COMMUNICATION													
Totals:											1,043	231	4,619	5,893	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	37.49	5.48	221.3	221.3	50.00	4.50	3.50	96.00	1	46	47	
Totals:											1	46	47

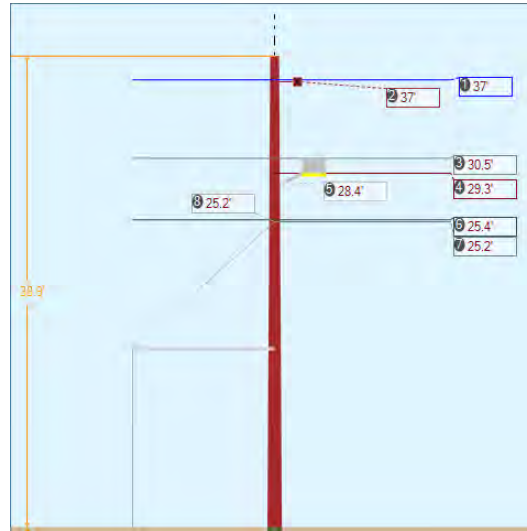
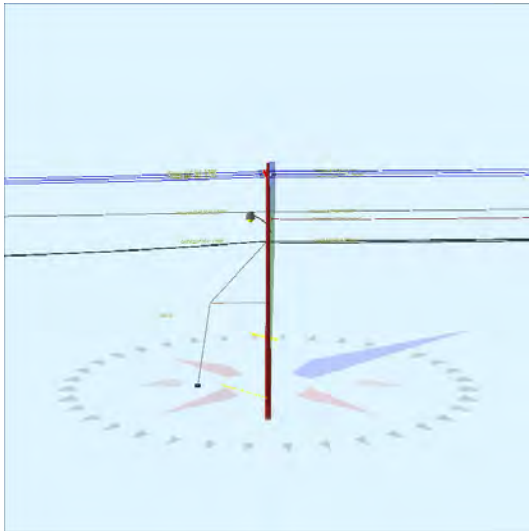
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 210.0°	Riser	KU, UTILITY	27.76	6.09	210.0	210.0	27.76	333.10	4.00	4.00	333.10	-5	1,180	1,176
Totals:											-5	1,180	1,176	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.62	0.00	0.0	0.0	13.00	9.00	10.50	0	179	179
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.67	45.00	304.4	0.0	6.00	3.50	7.50	43	48	91
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.67	-45.00	138.3	0.0	6.00	3.50	7.50	-43	48	6

Spool	Spool Insulator - 25 kV	KU, UTILITY	27.49	0.00	310.8	220.8	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.59	0.00	310.8	220.8	2.00	3.00	3.19	2	12	15
Bolt	Three Bolt	Unknown, COMMUNICATION	23.47	0.00	310.8	220.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.35	0.00	310.8	220.8	5.00	3.00	0.00	6	0	6
Totals:										16	301	317

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.50	33.36	11.00	14.37	7.32	11.90	1.60e+6	60.00	57.00	38.62	33,111	332.71	9.90

Pole Num:	59W - 1867982	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.07	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.47	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.961182 Deg	Longitude:	-84.481233 Deg	Elevation:	855.396387264003		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	316.3
Groundline	0.0	316.3
Vertical	24.7	42.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	354.5	316.3
Groundline	354.5	316.3
GL Allowable	94,418	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	12.3	222.0		17.2	316.3	18.8	40.0
? EHS 1/4 (Sidewalk)			25.3	57.4	316.3	69.0	40.0
? Sidewalk Strut	10.0	222.0	14.8	38.9	316.3	42.5	40.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 354.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	493	19.9	13,011	32.9	13.8	1,202	798	7	1,209	17.8
Comms	1,931	77.9	38,141	96.5	40.4	3,523	332	3	3,525	51.8
GuyBraces	-148	-6.0	-14,786	-37.4	-15.7	-1,366	3,761	34	-1,332	-19.6
Pole	172	6.9	2,619	6.6	2.8	242	2,285	20	262	3.9
Crossarms	3	0.1	58	0.2	0.1	5	95	1	6	0.1
Streetlights	16	0.6	159	0.4	0.2	15	86	1	15	0.2
Insulators	12	0.5	340	0.9	0.4	31	61	1	32	0.5
Pole Load	2,478	100.0	39,541	100.0	41.9	3,652	7,417	66	3,718	54.7
Pole Reserve Capacity			54,877		58.1	3,148			3,082	45.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 354.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	521	21.0	13,504	34.2	14.3	1,247	925	8	1,255	18.5
Unknown, COMMUNICATION	1,783	72.0	23,361	59.1	24.7	2,158	4,112	37	2,194	32.3
Pole	172	6.9	2,619	6.6	2.8	242	2,285	20	262	3.9
<Undefined>	3	0.1	58	0.2	0.1	5	95	1	6	0.1
Totals:	2,478	100.0	39,541	100.0	41.9	3,652	7,417	66	3,718	54.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.96	16.53	0.7200	0.29	0.462	62.0	41.2	62.0	3,210	105,864	10	591	106,465
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.96	45.58	0.7200	0.29	0.462	62.0	41.3	62.0	3,210	105,580	-9	592	106,164
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.96	45.58	0.7200	0.29	0.462	62.0	41.3	62.0	3,210	105,580	12	592	106,184
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.96	18.28	0.7200	2.35	0.462	251.3	221.5	251.3	3,210	-105,187	-39	2,408	-102,818
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.96	48.57	0.7200	2.35	0.462	251.3	221.5	251.3	3,210	-105,187	24	2,408	-102,755

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.96	48.57	0.7200	2.35	0.462	251.3	221.5	251.3	3,210	-105,187	-54	2,408	-102,833
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.47	6.66	0.3980	0.07	0.145	62.0	41.3	62.0	2,128	57,704	8	359	58,072
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.47	6.66	0.3980	1.12	0.145	251.3	221.5	251.3	2,128	-57,489	34	1,461	-55,994
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	29.25	6.73	0.2570	0.06	0.067	62.0	41.3	62.0	150	3,905	5	291	4,201
Totals:											5,583	-9	11,110	16,684	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.41	6.96	1.3300	0.78	0.337	62.0	41.3	62.0	925	20,915	21	611	21,546
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.41	6.96	1.3300	4.31	0.337	251.3	221.5	251.4	925	-20,837	84	2,483	-18,270
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	25.25	6.97	1.5000	0.89	0.900	62.0	41.3	62.0	2,000	44,937	34	663	45,634
		COMMUNICATION													
Totals:											45,015	138	3,757	48,910	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	36.96	5.53	221.5	221.5	50.00	4.50	3.50	96.00	-30	104	74
Totals:										-30	104	74

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	28.35	4.29	180.0	180.0	45.00	24.00	20.00	3.00	36.00	-238	442	204
Totals:											-238	442	204	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.96	0.00	41.4	41.4	3.00	3.80	12.75	5	68	74
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.96	-45.00	138.5	180.0	3.00	3.80	12.75	-13	68	55
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.96	45.00	304.5	180.0	3.00	3.80	12.75	18	68	86
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.96	0.00	221.5	0.0	3.00	3.80	12.75	-6	68	63
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.96	45.00	304.5	0.0	3.00	3.80	12.75	10	68	78

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.96	-45.00	138.5	0.0	3.00	3.80	12.75	-22	68	47
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.47	0.00	311.4	221.4	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.25	0.00	41.3	41.3	2.00	3.00	3.19	1	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	25.41	0.00	311.4	221.4	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	25.25	0.00	41.3	41.3	5.00	3.00	0.00	4	0	4
Totals:										3	432	435

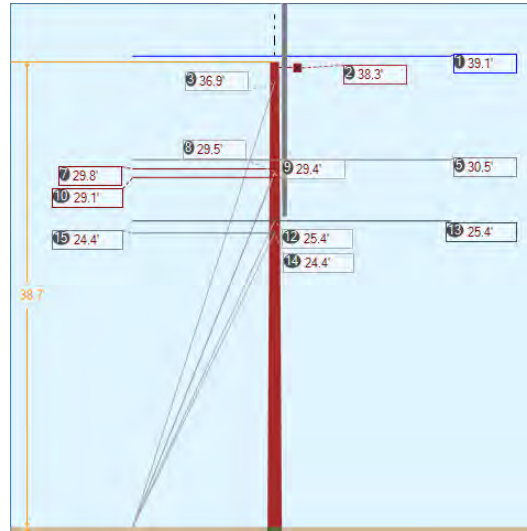
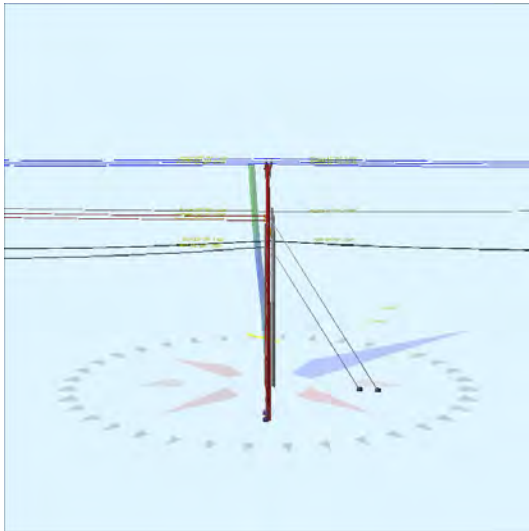
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Sidewalk	Unknown, COMMUNICATION	25.25	0.00	12.26	0.25	75.00	222.0	46.0	0.121	27.67	1.29

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)	
EHS 1/4	Sidewalk	2.30e+7	6,650	0.90	5,985	700	4,130	3,755	3,437	2,474	2,386	-1,612	-18,961
Totals:										2,474	2,386	-1,612	-18,961

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load² (lbs)	Load at Pole MCU³ (lbs)	Max Required Capacity² (%)
Single Helix Anchor		18.00	12.26	222.0	20,000	1.00	20,000	3,755	3,437	18.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.68	33.67	10.94	12.90	7.32	11.93	1.60e+6	60.00	57.00	38.93	215,499	2181.50	29.41

Pole Num:	60W - 27774-1217	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.34	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.37	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.960694 Deg	Longitude:	-84.481824 Deg	Elevation:	846.518629025528		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.4	37.0
Groundline	14.8	167.0
Vertical	25.2	275.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	5,252	316.3
Groundline	11,526	229.5
GL Allowable	93,664	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.4	136.0		40.1	317.0	40.1	318.1
? EHS 3/8 (Down)			36.9	40.3	317.0	44.4	318.4
? EHS 3/8 (Down)			29.5	17.6	317.0	19.3	317.7
? Single Helix Anchor	19.2	55.0		45.6	317.0	48.5	220.0
? EHS 3/8 (Down)			29.4	65.8	317.0	77.0	220.0
? Single Helix Anchor	16.7	136.0		3.1	317.0	3.1	315.6
? EHS 1/4 (Down)			25.4	10.5	317.0	11.6	315.6
? Single Helix Anchor	16.1	55.0		19.9	317.0	21.0	240.0
? EHS 1/4 (Down)			24.5	66.3	317.0	77.1	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,678	568.3	70,749	613.8	75.5	12,228	1,519	14	12,242	180.0
Comms	2,610	261.3	26,909	233.5	28.7	4,651	805	7	4,658	68.5
GuyBraces	-7,309	-731.6	-86,274	-748.5	-92.1	-14,912	27,740	250	-14,662	-215.6
Pole	10	0.9	77	0.7	0.1	13	2,261	20	34	0.5
Crossarms	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Risers	10	1.0	54	0.5	0.1	9	283	3	12	0.2
Insulators	0	0.0	10	0.1	0.0	2	99	1	3	0.0
Pole Load	999	100.0	11,526	100.0	12.3	1,992	32,897	296	2,288	33.6
Pole Reserve Capacity			82,138		87.7	4,808			4,512	66.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	536	53.7	6,695	58.1	7.2	1,157	23,805	214	1,371	20.2
Unknown, COMMUNICATION	453	45.4	4,754	41.2	5.1	822	6,641	60	881	13.0
Pole	10	0.9	77	0.7	0.1	13	2,261	20	34	0.5
<Undefined>	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Totals:	999	100.0	11,526	100.0	12.3	1,992	32,897	296	2,288	33.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.15	0.00	0.7200	2.35	0.462	251.3	41.5	251.3	3,210	-161,874	0	488	-161,387
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.15	0.00	0.7200	2.79	0.462	281.2	232.4	281.3	3,210	163,277	0	-195	163,082
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.15	45.00	0.7200	2.35	0.462	251.3	41.5	251.3	3,210	-161,874	31	488	-161,356
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.15	45.00	0.7200	2.79	0.462	281.2	232.4	281.3	3,210	163,277	34	-195	163,117
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.15	45.00	0.7200	2.35	0.462	251.3	41.5	251.3	3,210	-161,874	-31	488	-161,417
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.15	45.00	0.7200	2.79	0.462	281.2	232.4	281.3	3,210	163,277	-34	-195	163,048
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.54	6.64	0.3980	1.12	0.145	251.3	41.5	251.3	2,128	-83,651	2	280	-83,369
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.54	6.64	0.3980	1.39	0.145	281.2	232.4	281.2	2,128	84,376	2	-112	84,266
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.78	6.69	0.3980	1.39	0.145	281.2	232.4	281.2	2,128	82,269	52	-109	82,212
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.06	6.73	0.3980	1.39	0.145	281.2	232.4	281.2	2,128	80,294	52	-106	80,239
Totals:											167,496	108	831	168,435	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	25.44	6.94	1.3300	4.31	0.337	251.3	41.5	251.4	925	-30,296	5	475	-29,816
CATV	CATV 1.0	Unknown, COMMUNICATION	25.44	6.94	1.3300	5.10	0.337	281.2	232.4	281.4	925	30,558	6	-190	30,374

Telco	TELE 1.5	Unknown,	24.45	7.00	1.5000	6.15	0.900	281.2	232.4	281.5	2,000	63,478	225	-199	63,503	
COMMUNICATION												Totals:	63,740	236	86	64,062

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	38.33	5.43	227.0	227.0	50.00	4.50	3.50	96.00	0	1	1
Totals:										0	1	1

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 0.0°	Riser	KU, UTILITY	31.18	6.09	0.0	0.0	31.18	374.14	4.00	4.00	374.14	-20	45	25
Riser 330.0°	Riser	KU, UTILITY	31.18	6.09	330.0	330.0	31.18	374.14	4.00	4.00	374.14	-6	15	9
Riser 20.0°	Riser	KU, UTILITY	29.84	6.09	20.0	20.0	29.84	358.10	4.00	4.00	358.10	-26	54	28
Riser 50.0°	Riser	KU, UTILITY	28.36	6.09	50.0	50.0	28.36	340.37	4.00	4.00	340.37	-28	55	26
Riser 290.0°	Riser	KU, UTILITY	28.36	6.09	290.0	290.0	28.36	340.37	4.00	4.00	340.37	14	25	39
Totals:											-66	194	128	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.52	0.00	227.0	0.0	6.00	3.50	7.50	0	4	4
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.52	45.00	310.1	0.0	6.00	3.50	7.50	4	4	8
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.52	-45.00	143.8	0.0	6.00	3.50	7.50	-4	4	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.54	0.00	317.0	227.0	2.00	3.00	3.19	0	1	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.78	0.00	232.4	232.4	2.00	3.00	3.19	2	1	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.06	0.00	232.4	232.4	2.00	3.00	3.19	2	1	3
Bolt	Three Bolt	Unknown, COMMUNICATION	25.44	0.00	317.0	227.0	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	24.45	0.00	232.4	322.4	5.00	3.00	0.00	6	0	6
Totals:										10	15	25

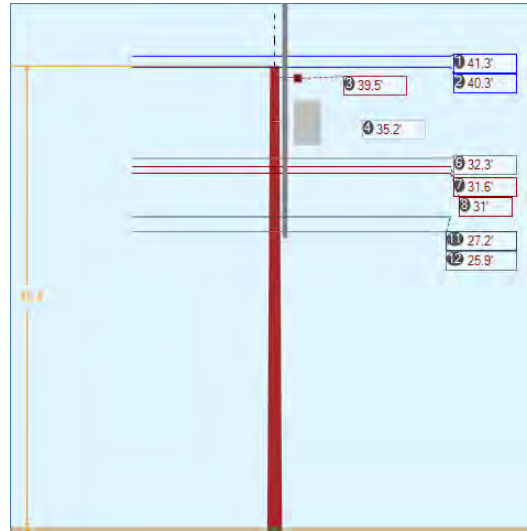
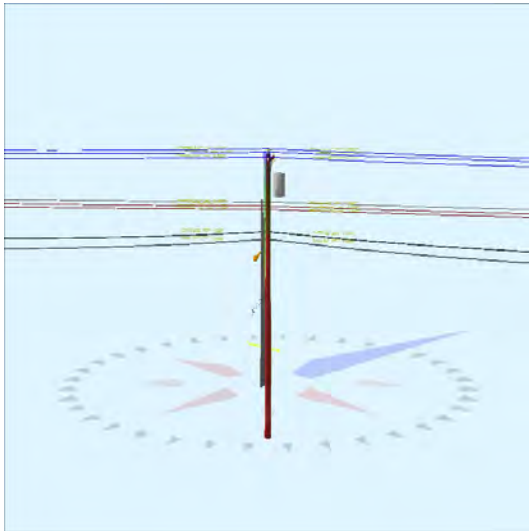
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	36.92	0.00	20.41	0.375	75.00	136.0	60.9	0.273	40.54	1.43
EHS 3/8	Down	KU, UTILITY	29.51	0.00	20.41	0.375	75.00	136.0	55.1	0.273	34.19	0.52
EHS 3/8	Down	KU, UTILITY	29.39	0.00	19.21	0.375	75.00	55.0	56.6	0.273	33.42	1.92
EHS 1/4	Down	Unknown, COMMUNICATION	25.44	0.00	16.66	0.25	75.00	136.0	56.6	0.121	28.71	0.26
EHS 1/4	Down	Unknown, COMMUNICATION	24.45	0.00	16.06	0.25	75.00	55.0	56.5	0.121	27.54	1.55

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,147	5,588	5,588	4,880	2,722	-168	-6,098
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,679	2,435	2,435	1,998	1,392	-86	-2,501
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,667	9,698	9,113	7,611	5,013	-4,990	-144,044
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	692	629	629	525	346	-21	-537
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,614	4,195	3,970	3,311	2,191	-2,181	-52,214
Totals:										18,325	11,664	-7,446	-205,394

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	20.41	136.0	20,000	1.00	20,000	8,014	8,013	40.1
Single Helix Anchor			18.00	19.21	55.0	20,000	1.00	20,000	9,698	9,113	48.5
Single Helix Anchor			18.00	16.66	136.0	20,000	1.00	20,000	629	629	3.1
Single Helix Anchor			18.00	16.06	55.0	20,000	1.00	20,000	4,195	3,970	21.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.14	34.50	10.67	29.48	7.32	11.90	1.60e+6	60.00	57.00	38.66	130,411	1305.44	3.97

Pole Num:	61W - 27774-1208	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.58	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.62	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.960199 Deg	Longitude:	-84.482580 Deg	Elevation:	845.990670191562		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	61.3	0.0
Groundline	61.3	0.0
Vertical	27.3	28.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	72,758	140.3
Groundline	72,758	140.3
GL Allowable	120,222	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,156	49.3	43,094	59.2	35.8	2,430	1,689	13	2,443	35.9
Comms	627	26.7	17,378	23.9	14.5	980	1,153	9	989	14.5
PowerEquipments	55	2.3	1,720	2.4	1.4	97	1,216	9	106	1.6
Pole	246	10.5	4,974	6.8	4.1	281	2,793	21	302	4.4
Crossarms	1	0.1	49	0.1	0.0	3	95	1	3	0.1
Risers	254	10.8	5,190	7.1	4.3	293	233	2	294	4.3
Insulators	9	0.4	353	0.5	0.3	20	78	1	20	0.3
Pole Load	2,347	100.0	72,758	100.0	60.5	4,103	7,256	55	4,158	61.2
Pole Reserve Capacity			47,464		39.5	2,697			2,642	38.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,474	62.8	50,345	69.2	41.9	2,839	3,197	24	2,864	42.1
Unknown, COMMUNICATION	627	26.7	17,389	23.9	14.5	981	1,172	9	990	14.6
Pole	246	10.5	4,974	6.8	4.1	281	2,793	21	302	4.4
<Undefined>	1	0.1	49	0.1	0.0	3	95	1	3	0.1
Totals:	2,347	100.0	72,758	100.0	60.5	4,103	7,256	55	4,158	61.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.29	0.00	0.7200	2.79	0.462	281.2	52.4	281.3	3,210	4,774	0	4,132	8,906
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.29	0.00	0.7200	2.38	0.462	252.7	231.8	252.7	3,210	-3,386	0	3,713	327
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.31	45.37	0.7200	2.79	0.462	281.2	52.4	281.3	3,210	4,660	768	4,034	9,462
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.31	45.37	0.7200	2.38	0.462	252.7	231.8	252.7	3,210	-3,305	690	3,624	1,009
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.31	45.37	0.7200	2.79	0.462	281.2	52.4	281.3	3,210	4,660	-762	4,034	7,932

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.31	45.37	0.7200	2.38	0.462	252.7	231.8	252.7	3,210	-3,305	-684	3,624	-365
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.33	6.98	0.3980	1.39	0.145	281.2	52.4	281.2	2,128	2,476	54	2,379	4,909
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.33	6.98	0.3980	1.14	0.145	252.7	231.8	252.7	2,128	-1,756	48	2,138	431
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.61	7.02	0.3980	1.39	0.145	281.2	52.4	281.2	2,128	2,421	54	2,326	4,801
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.61	7.02	0.3980	1.14	0.145	252.7	231.8	252.7	2,128	-1,717	49	2,090	422
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.04	7.06	0.3980	1.39	0.145	281.2	52.4	281.2	2,128	2,377	54	2,284	4,716
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.04	7.06	0.3980	1.14	0.145	252.7	231.8	252.7	2,128	-1,686	49	2,053	416
Totals:											6,215	320	36,432	42,966	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	27.22	7.29	1.3300	5.10	0.337	281.2	52.4	281.4	925	906	134	4,082	5,123
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	27.22	7.29	1.3300	4.35	0.337	252.7	231.8	252.8	925	-643	121	3,668	3,146
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	25.91	7.37	1.5000	6.15	0.900	281.2	52.4	281.5	2,000	1,865	237	4,248	6,350
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	25.91	7.37	1.5000	5.23	0.900	252.7	231.8	252.9	2,000	-1,323	213	3,817	2,707
		COMMUNICATION													
Totals:											806	705	15,816	17,326	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	35.16	22.30	45.0	45.0	640.00	47.00	--	24.00	--	-210	1,925	1,715
Totals:											-210	1,925	1,715	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		39.50	5.79	52.1	52.1	50.00	4.50	3.50	96.00	1	47	49
Totals:											1	47	49

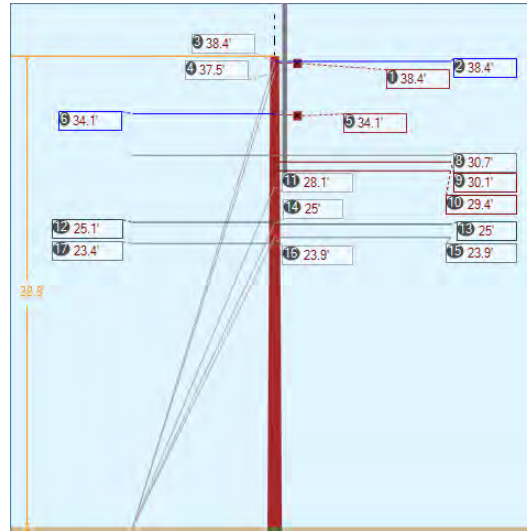
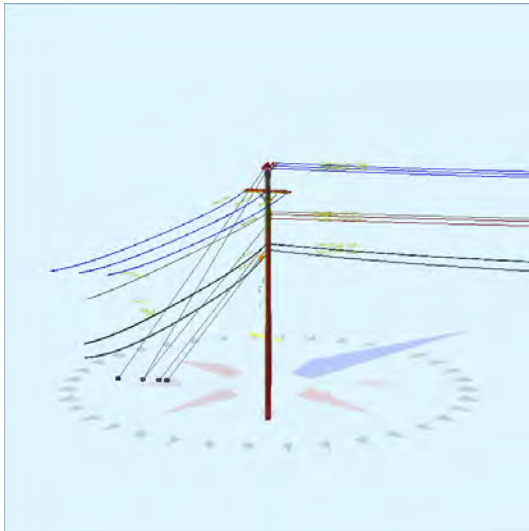
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 220.0°	Riser	KU, UTILITY	32.69	6.81	220.0	220.0	32.69	392.29	4.00	4.00	392.29	6	1,615	1,621
Riser 240.0°	Riser	KU, UTILITY	30.23	6.81	240.0	240.0	30.23	362.72	4.00	4.00	362.72	-5	1,410	1,404
Riser 260.0°	Riser	KU, UTILITY	30.23	6.81	260.0	260.0	30.23	362.72	4.00	4.00	362.72	-16	1,269	1,253
Riser 280.0°	Riser	KU, UTILITY	29.36	6.81	280.0	280.0	29.36	352.34	4.00	4.00	352.34	-23	919	896
Totals:											-38	5,213	5,175	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	40.42	0.00	0.0	0.0	13.00	9.00	10.50	0	187	187
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.68	45.00	134.8	0.0	6.00	3.50	7.50	43	51	94
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.68	-45.00	329.4	0.0	6.00	3.50	7.50	-43	51	8
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.33	0.00	142.1	52.1	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.61	0.00	142.1	52.1	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.04	0.00	142.1	52.1	2.00	3.00	3.19	2	14	17
Bolt	Three Bolt	Unknown, COMMUNICATION	27.22	0.00	142.1	52.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.91	0.00	142.1	52.1	5.00	3.00	0.00	6	0	6
Totals:										19	333	352

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.56	34.07	11.73	23.07	7.96	12.94	1.60e+6	60.00	57.00	40.42	26,569	265.79	3.66

Pole Num:	62W - 27774-1209	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.16	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.44	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.959821 Deg	Longitude:	-84.483286 Deg	Elevation:	829.76664745729		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	63.6	0.0
Groundline	63.6	0.0
Vertical	53.6	33.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	53,119	137.9
Groundline	53,119	137.9
GL Allowable	94,175	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	27.0	234.0		37.5	140.0	37.9	60.0
? EHS 7/16 (Down)			38.4	65.2	140.0	72.3	60.0
? Single Helix Anchor	22.4	234.0		69.1	140.0	70.0	60.0
? EHS 7/16 (Down)			37.5	61.4	140.0	68.1	60.0
? EHS 7/16 (Down)			28.1	58.8	140.0	65.9	60.0
? Single Helix Anchor	19.5	234.0		15.5	140.0	15.9	70.0
? EHS 1/4 (Down)			25.0	51.7	140.0	58.4	70.0
? Single Helix Anchor	18.1	234.0		14.7	140.0	15.1	70.0
? EHS 1/4 (Down)			23.9	49.0	140.0	55.5	70.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 137.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,035	152.3	96,200	181.1	102.2	7,558	983	9	7,566	111.3
Comms	1,050	52.7	23,456	44.2	24.9	1,843	704	6	1,849	27.2
GuyBraces	-2,438	-122.3	-73,937	-139.2	-78.5	-5,809	50,148	450	-5,359	-78.8
Pole	218	10.9	3,904	7.4	4.2	307	2,277	20	327	4.8
Crossarms	66	3.3	2,083	3.9	2.2	164	380	3	167	2.5
Risers	46	2.3	867	1.6	0.9	68	59	1	69	1.0
Insulators	16	0.8	546	1.0	0.6	43	84	1	44	0.6
Pole Load	1,993	100.0	53,119	100.0	56.4	4,173	54,635	490	4,663	68.6
Pole Reserve Capacity			41,056		43.6	2,627			2,137	31.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 137.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	839	42.1	27,627	52.0	29.3	2,170	47,698	428	2,598	38.2
Unknown, COMMUNICATION	870	43.6	19,505	36.7	20.7	1,532	4,279	38	1,571	23.1
Pole	218	10.9	3,904	7.4	4.2	307	2,277	20	327	4.8
<Undefined>	66	3.3	2,083	3.9	2.2	164	380	3	167	2.5
Totals:	1,993	100.0	53,119	100.0	56.4	4,173	54,635	490	4,663	68.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.40	48.54	0.7200	2.38	0.462	252.7	51.8	252.7	3,210	11,015	-51	3,443	14,407
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.40	18.19	0.7200	2.38	0.462	252.7	51.8	252.7	3,210	11,015	4	3,443	14,461
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.40	48.54	0.7200	2.38	0.462	252.7	51.8	252.7	3,210	11,015	54	3,443	14,511
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.09	18.44	0.7200	0.09	0.462	73.3	152.6	73.4	250	10,714	17	49	10,781
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.09	48.63	0.7200	0.09	0.462	73.3	152.6	73.4	250	10,714	2	49	10,766
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.09	48.63	0.7200	0.09	0.462	73.3	152.6	73.4	250	10,714	11	49	10,774
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.67	6.64	0.3980	1.14	0.145	252.7	51.8	252.7	2,128	5,832	37	2,024	7,893
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.67	6.64	0.3980	0.08	0.145	73.3	152.6	73.4	150	5,784	11	33	5,827
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.12	6.68	0.3980	1.14	0.145	252.7	51.8	252.7	2,128	5,727	3	1,988	7,718
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.38	6.72	0.3980	1.14	0.145	252.7	51.8	252.7	2,128	5,587	3	1,939	7,530
Totals:											88,117	91	16,460	104,668	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	25.14	6.97	1.3300	0.93	0.337	73.3	152.6	73.4	150	4,741	32	55	4,828
CATV	CATV 1.0	Unknown, COMMUNICATION	24.97	6.98	1.3300	4.35	0.337	252.7	51.8	252.8	925	2,064	8	3,359	5,431

Telco	TELE 1.5	Unknown, COMMUNICATION	23.89	7.05	1.5000	5.23	0.900	252.7	51.8	252.9	2,000	4,269	14	3,511	7,794
Telco	TELE 1.5	Unknown, COMMUNICATION	23.40	7.07	1.5000	1.07	0.900	73.3	152.6	73.6	250	7,354	57	56	7,467
Totals:											18,429	112	6,980	25,520	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.40	5.44	51.8	51.8	50.00	4.50	3.50	96.00	0	99	99	
Normal	Crossarm	34.09	5.69	152.6	152.6	50.00	4.50	3.50	96.00	0	2,166	2,166	
Totals:											0	2,266	2,266

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser KU, UTILITY	30.91	6.09	360.0	360.0	30.91	370.86	4.00	4.00	370.86	-11	954	943
Totals:											-11	954	943

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend 12.75" KU, UTILITY	38.40	-45.00	328.7	0.0	3.00	3.80	12.75	-21	90	70
Deadend	Deadend 12.75" KU, UTILITY	38.40	0.00	51.8	0.0	3.00	3.80	12.75	1	90	91
Deadend	Deadend 12.75" KU, UTILITY	38.40	45.00	134.9	0.0	3.00	3.80	12.75	22	90	112
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.09	0.00	152.6	0.0	3.00	3.80	12.75	8	80	89
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.09	45.00	235.4	0.0	3.00	3.80	12.75	3	80	83
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.09	-45.00	69.8	0.0	3.00	3.80	12.75	14	80	94
Spool	Spool Insulator - 25 kV KU, UTILITY	30.67	0.00	102.2	12.2	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV KU, UTILITY	30.12	0.00	51.8	51.8	2.00	3.00	3.19	0	14	14
Spool	Spool Insulator - 25 kV KU, UTILITY	29.38	0.00	51.8	51.8	2.00	3.00	3.19	0	14	14
Bolt	Single Bolt Unknown, COMMUNICATION	25.14	0.00	152.6	242.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt Unknown, COMMUNICATION	24.97	0.00	51.8	51.8	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt Unknown, COMMUNICATION	23.89	0.00	51.8	51.8	5.00	3.00	0.00	0	0	0

Bolt	Single Bolt	Unknown, COMMUNICATION	23.40	0.00	152.6	242.6	5.00	3.00	0.00	5	0	5
Totals:										41	554	594

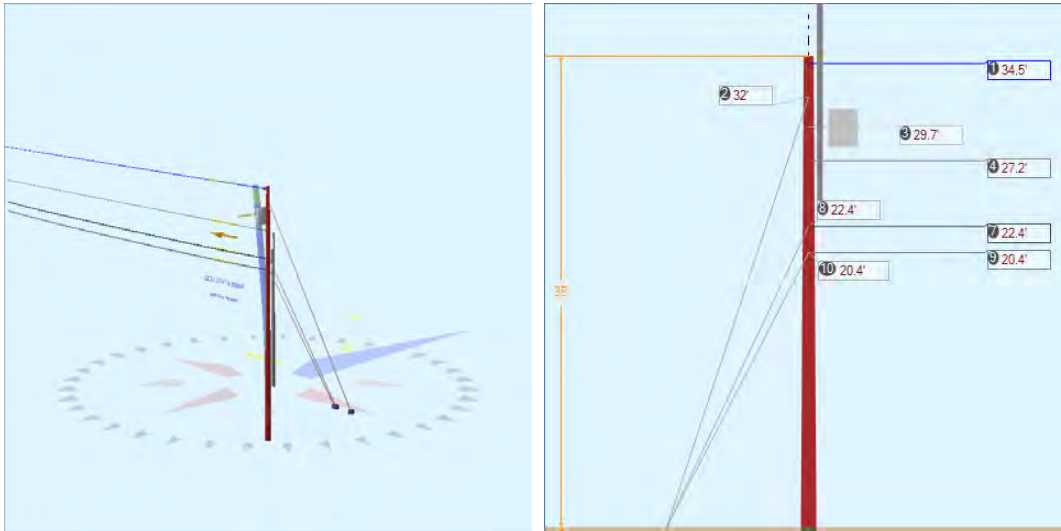
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 7/16	Down	KU, UTILITY	38.40	0.00	26.98	0.438	75.00	234.0	54.7	0.399	45.26	2.55
EHS 7/16	Down	KU, UTILITY	37.51	0.00	22.43	0.438	75.00	234.0	58.9	0.399	42.04	2.24
EHS 7/16	Down	KU, UTILITY	28.11	0.00	22.43	0.438	75.00	234.0	51.2	0.399	34.24	1.75
EHS 1/4	Down	KU, UTILITY	24.97	0.00	19.51	0.25	75.00	234.0	51.8	0.121	29.96	1.31
EHS 1/4	Down	Unknown, COMMUNICATION	23.89	0.00	18.09	0.25	75.00	234.0	52.7	0.121	28.24	1.17

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	13,531	12,301	12,198	9,958	7,045	-754	-28,105
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	12,756	11,596	11,489	9,839	5,932	-635	-22,980
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	12,339	11,217	11,016	8,590	6,897	-738	-20,189
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,493	3,175	3,094	2,433	1,912	-205	-4,861
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,321	3,019	2,931	2,331	1,777	-190	-4,310
Totals:										33,151	23,564	-2,521	-80,445

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	26.98	234.0	32,500	1.00	32,500	12,301	12,198	37.8
Single Helix Anchor		18.00	22.43	234.0	32,500	1.00	32,500	22,762	22,455	70.0
Single Helix Anchor		18.00	19.51	234.0	20,000	1.00	20,000	3,175	3,094	15.9
Single Helix Anchor		18.00	18.09	234.0	20,000	1.00	20,000	3,019	2,931	15.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	33.30	34.96	10.54	39.87	7.32	11.92	1.60e+6	60.00	57.00	38.84	101,886	1019.31	1.87

Pole Num:	63W - 64450-95044	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Deadend
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.03	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963502 Deg	Longitude:	-84.487819 Deg	Elevation:	839.131909175656		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.6	32.3
Groundline	16.3	0.0
Vertical	14.5	26.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	5,962	274.7
Groundline	9,435	265.8
GL Allowable	83,901	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.1	95.0	32.0	40.8	274.1	40.8	275.5
? Single Helix Anchor ? EHS 1/4 (Down)	17.6	95.0	22.4	17.3	274.1	17.3	274.8
? Single Helix Anchor ? EHS 1/4 (Down)	17.2	95.0	20.4	16.8	274.1	16.8	274.8
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 265.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,466	533.5	61,353	650.3	73.1	13,674	57	1	13,674	201.1
Comms	3,757	366.7	28,788	305.1	34.3	6,416	188	2	6,418	94.4
GuyBraces	-8,584	-837.9	-83,718	-887.3	-99.8	-18,658	18,283	177	-18,481	-271.8
PowerEquipments	36	3.5	792	8.4	0.9	177	636	6	183	2.7
Pole	190	18.5	1,232	13.1	1.5	275	1,954	19	294	4.3
Risers	157	15.3	947	10.0	1.1	211	142	1	212	3.1
Insulators	3	0.3	41	0.4	0.1	9	28	0	9	0.1
Pole Load	1,025	100.0	9,435	100.0	11.3	2,103	21,290	206	2,309	34.0
Pole Reserve Capacity			74,466		88.8	4,697			4,491	66.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 265.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,273	124.3	12,055	127.8	14.4	2,687	11,105	108	2,794	41.1
Unknown, COMMUNICATION	-439	-42.8	-3,853	-40.8	-4.6	-859	8,231	80	-779	-11.5
Pole	190	18.5	1,232	13.1	1.5	275	1,954	19	294	4.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,025	100.0	9,435	100.0	11.3	2,103	21,290	206	2,309	34.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.47	16.44	0.3980	0.11	0.145	87.3	274.7	87.3	2,128	94,210	9	1	94,220
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.25	6.62	0.3980	0.11	0.145	87.3	274.7	87.3	2,128	74,472	16	1	74,489
Totals:											168,682	24	2	168,709	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.38	6.91	1.3300	1.12	0.337	87.3	274.7	87.3	925	26,589	39	2	26,630
Telco	TELE 1.5	Unknown, COMMUNICATION	20.42	7.03	1.5000	1.30	0.900	87.3	274.7	87.3	2,000	52,459	69	2	52,530
Totals:											79,048	108	4	79,160	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	29.71	20.98	270.0	270.0	335.00	34.00	--	22.00	--	1,110	1,069	2,179
Totals:											1,110	1,069	2,179	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 30.0°	Riser	KU, UTILITY	26.93	6.09	30.0	30.0	26.93	323.11	4.00	4.00	323.11	-15	1,004	989

Riser 330.0°	Riser	KU, UTILITY	23.90	6.09	330.0	330.0	23.90	286.80	4.00	4.00	286.80	10	728	739
Riser 360.0°	Riser	KU, UTILITY	23.90	6.09	360.0	360.0	23.90	286.80	4.00	4.00	286.80	-2	877	875
Totals:												-6	2,609	2,603

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.47	0.00	274.7	274.7	3.00	3.80	12.75	8	80	88
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.25	0.00	274.7	274.7	2.00	3.00	3.19	2	13	15
Bolt	Single Bolt	Unknown, COMMUNICATION	22.38	0.00	274.7	364.7	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	20.42	0.00	274.7	364.7	5.00	3.00	0.00	5	0	5
Totals:										21	93	114

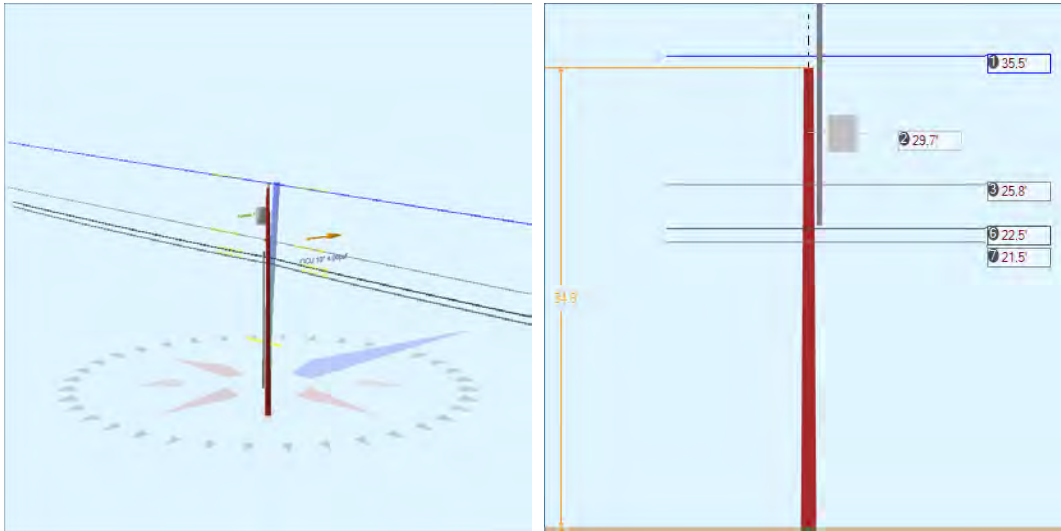
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	32.00	0.00	21.14	0.375	75.00	95.0	56.4	0.273	36.68	1.88
EHS 1/4	Down	Unknown, COMMUNICATION	22.38	0.00	17.58	0.25	75.00	95.0	51.7	0.121	26.73	1.31
EHS 1/4	Down	Unknown, COMMUNICATION	20.42	0.00	17.18	0.25	75.00	95.0	49.8	0.121	24.95	1.19

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,966	8,151	8,150	6,785	4,516	-4,458	-140,443
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,809	3,463	3,463	2,717	2,147	-2,120	-46,665
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,700	3,363	3,363	2,567	2,172	-2,145	-43,100
Totals:										12,069	8,836	-8,722	-230,208

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.14	95.0	20,000	1.00	20,000	8,151	8,150	40.8
Single Helix Anchor		18.00	17.58	95.0	20,000	1.00	20,000	3,463	3,463	17.3
Single Helix Anchor		18.00	17.18	95.0	20,000	1.00	20,000	3,363	3,363	16.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.89	34.16	10.38	22.44	7.32	11.47	1.60e+6	60.00	57.00	35.04	146,922	1468.27	6.90

Pole Num:	64W - 64367-95045	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.24	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963510 Deg	Longitude:	-84.488137 Deg	Elevation:	832.519555448825		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	15.0	0.0
Groundline	15.0	0.0
Vertical	8.9	20.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,454	1.9
Groundline	12,454	1.9
GL Allowable	85,392	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 1.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	91	16.3	2,768	22.2	3.2	219	115	1	220	3.2
Comms	193	34.7	4,498	36.1	5.3	356	376	4	359	5.3
PowerEquipments	36	6.5	1,038	8.3	1.2	82	636	6	88	1.3
Pole	189	33.9	3,345	26.9	3.9	264	1,946	19	283	4.2
Risers	43	7.8	623	5.0	0.7	49	88	1	50	0.7
Insulators	5	0.9	182	1.5	0.2	14	48	0	15	0.2
Pole Load	557	100.0	12,454	100.0	14.6	984	3,208	31	1,015	14.9
Pole Reserve Capacity			72,938		85.4	5,816			5,785	85.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 1.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	175	31.4	4,600	36.9	5.4	364	868	8	372	5.5
Unknown, COMMUNICATION	193	34.7	4,509	36.2	5.3	356	395	4	360	5.3
Pole	189	33.9	3,345	26.9	3.9	264	1,946	19	283	4.2
Totals:	557	100.0	12,454	100.0	14.6	984	3,208	31	1,015	14.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.50	0.00	0.3980	0.14	0.145	87.3	94.7	87.3	2,128	-3,629	0	808	-2,821
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.50	0.00	0.3980	0.14	0.145	86.8	274.7	86.8	2,128	3,629	0	803	4,431
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.79	6.70	0.3980	0.14	0.145	87.3	94.7	87.3	2,128	-2,635	-16	587	-2,064
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.79	6.70	0.3980	0.14	0.145	86.8	274.7	86.8	2,128	2,635	-16	583	3,202
Totals:											0	-32	2,780	2,748	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.49	6.90	1.3300	1.13	0.337	86.8	274.7	86.8	925	999	39	1,036	2,074
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.49	6.90	1.3300	1.13	0.337	87.3	94.7	87.3	925	-999	39	1,042	83
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.49	6.96	1.5000	1.30	0.900	86.8	274.7	86.8	2,000	2,063	69	1,081	3,213
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.49	6.96	1.5000	1.31	0.900	87.3	94.7	87.3	2,000	-2,063	69	1,088	-905
		COMMUNICATION													
Totals:											0	217	4,248	4,465	

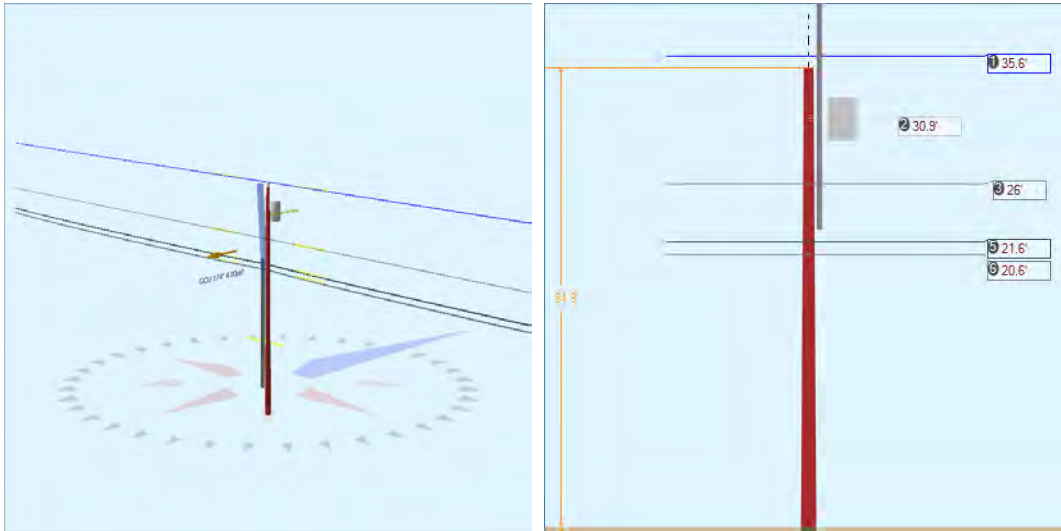
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	29.66	20.96	270.0	270.0	335.00	34.00	--	22.00	--	-38	1,068	1,030
Totals:											-38	1,068	1,030	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 180.0°	Riser	KU, UTILITY	23.83	5.85	180.0	180.0	23.83	285.93	4.00	4.00	285.93	-23	152	128
Riser 150.0°	Riser	KU, UTILITY	22.67	5.85	150.0	150.0	22.67	271.99	4.00	4.00	271.99	-19	509	490
Totals:											-42	660	618	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.63	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.79	0.00	184.7	94.7	2.00	3.00	3.19	-2	12	10	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.49	0.00	4.7	274.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.49	0.00	4.7	274.7	5.00	3.00	0.00	6	0	6	
Totals:											9	171	180

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.42	33.23	10.71	13.32	7.32	11.54	1.60e+6	60.00	57.00	34.63	36,077	360.48	11.24

Pole Num:	65W - 642279-95046	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.24	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.29	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963520 Deg	Longitude:	-84.488436 Deg	Elevation:	834.034014371227		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	15.5	0.0
Groundline	15.5	0.0
Vertical	9.5	20.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,874	174.7
Groundline	12,874	174.7
GL Allowable	85,769	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 174.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	94	16.6	2,943	22.9	3.4	232	112	1	233	3.4
Comms	189	33.5	4,235	32.9	4.9	333	368	4	337	5.0
PowerEquipments	42	7.4	1,409	10.9	1.6	111	694	7	117	1.7
Pole	191	33.9	3,408	26.5	4.0	268	1,957	19	287	4.2
Risers	43	7.7	691	5.4	0.8	54	86	1	55	0.8
Insulators	5	0.9	188	1.5	0.2	15	48	0	15	0.2
Pole Load	564	100.0	12,874	100.0	15.0	1,013	3,264	31	1,044	15.4
Pole Reserve Capacity			72,895		85.0	5,787			5,756	84.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 174.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	184	32.5	5,220	40.5	6.1	411	920	9	419	6.2
Unknown, COMMUNICATION	189	33.5	4,246	33.0	5.0	334	387	4	338	5.0
Pole	191	33.9	3,408	26.5	4.0	268	1,957	19	287	4.2
Totals:	564	100.0	12,874	100.0	15.0	1,013	3,264	31	1,044	15.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.64	0.00	0.3980	0.14	0.145	86.8	94.7	86.8	2,128	13,149	0	784	13,933
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.64	0.00	0.3980	0.13	0.145	83.6	274.6	83.6	2,128	-13,018	0	756	-12,262
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.00	6.69	0.3980	0.14	0.145	86.8	94.7	86.8	2,128	9,586	16	572	10,173
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.00	6.69	0.3980	0.13	0.145	83.6	274.6	83.6	2,128	-9,491	15	551	-8,924
Totals:											226	31	2,664	2,920	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.59	6.96	1.3300	1.13	0.337	86.8	94.7	86.8	925	3,461	39	968	4,467
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.59	6.96	1.3300	1.08	0.337	83.6	274.6	83.6	925	-3,426	38	933	-2,455
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.63	7.02	1.5000	1.30	0.900	86.8	94.7	86.8	2,000	7,150	69	1,011	8,230
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.63	7.02	1.5000	1.24	0.900	83.6	274.6	83.6	2,000	-7,080	66	975	-6,039
		COMMUNICATION													
Totals:											105	211	3,886	4,203	

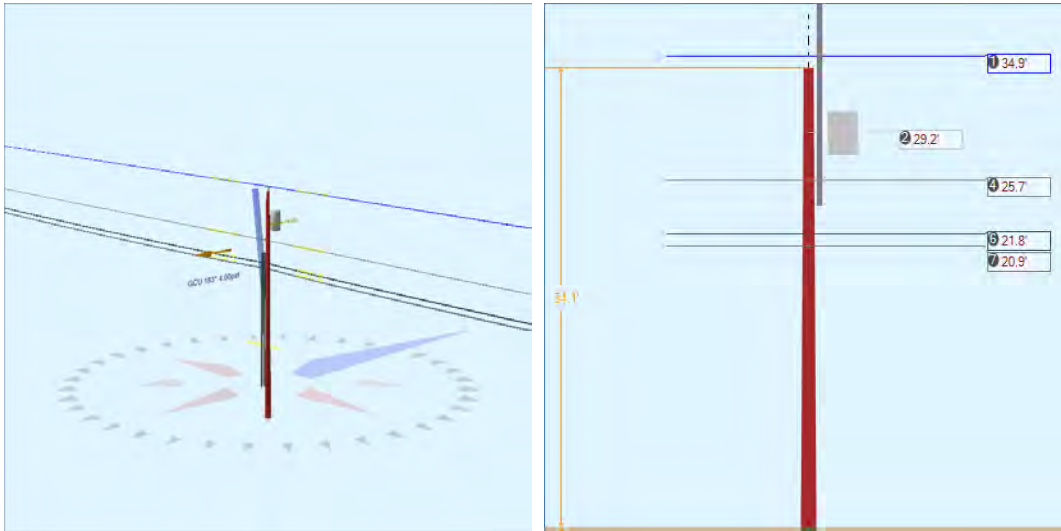
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	30.86	20.90	90.0	90.0	365.00	39.00	--	22.00	--	111	1,287	1,398
Totals:											111	1,287	1,398	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 220.0°	Riser	KU, UTILITY	22.51	5.85	220.0	220.0	22.51	270.16	4.00	4.00	270.16	16	567	582
Riser 180.0°	Riser	KU, UTILITY	22.51	5.85	180.0	180.0	22.51	270.16	4.00	4.00	270.16	22	82	104
Totals:											38	648	686	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.77	0.00	0.0	0.0	13.00	9.00	10.50	0	162	162	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.00	0.00	184.6	94.6	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.59	0.00	184.6	94.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.63	0.00	184.6	94.6	5.00	3.00	0.00	5	0	5	
Totals:											13	174	187

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.88	33.30	10.71	13.56	7.32	11.56	1.60e+6	60.00	57.00	34.77	34,476	343.55	10.53

Pole Num:	66W - 64139-95047	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963505 Deg	Longitude:	-84.488712 Deg	Elevation:	825.919661682884		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.3	0.0
Groundline	22.3	0.0
Vertical	9.4	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,298	180.0
Groundline	18,298	180.0
GL Allowable	83,849	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 180.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	162	19.2	4,956	27.1	5.9	402	120	1	403	5.9
Comms	250	29.5	5,535	30.3	6.6	449	395	4	453	6.7
PowerEquipments	42	4.9	1,220	6.7	1.5	99	694	7	106	1.6
Pole	186	22.0	3,232	17.7	3.9	262	1,898	18	280	4.1
Risers	201	23.8	3,172	17.3	3.8	257	228	2	259	3.8
Insulators	5	0.6	183	1.0	0.2	15	48	0	15	0.2
Pole Load	846	100.0	18,298	100.0	21.8	1,483	3,382	33	1,516	22.3
Pole Reserve Capacity			65,551		78.2	5,317			5,284	77.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 180.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	410	48.5	9,520	52.0	11.4	772	1,070	10	782	11.5
Unknown, COMMUNICATION	250	29.5	5,546	30.3	6.6	450	414	4	454	6.7
Pole	186	22.0	3,232	17.7	3.9	262	1,898	18	280	4.1
Totals:	846	100.0	18,298	100.0	21.8	1,483	3,382	33	1,516	22.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.93	0.00	0.3980	0.13	0.145	83.6	94.6	83.6	2,128	6,003	0	762	6,765
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.93	0.00	0.3980	0.19	0.145	99.3	273.7	99.3	2,128	-4,838	0	907	-3,931
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.73	6.67	0.3980	0.13	0.145	83.6	94.6	83.6	2,128	4,421	15	562	4,997
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.73	6.67	0.3980	0.19	0.145	99.3	273.7	99.3	2,128	-3,563	18	668	-2,877
										Totals:	2,023	33	2,898	4,954	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.76	6.91	1.3300	1.08	0.337	83.6	94.6	83.6	925	1,625	38	968	2,630
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.76	6.91	1.3300	1.31	0.337	99.3	273.7	99.3	925	-1,309	45	1,150	-114
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.86	6.96	1.5000	1.24	0.900	83.6	94.6	83.6	2,000	3,367	66	1,014	4,447
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.86	6.96	1.5000	1.52	0.900	99.3	273.7	99.3	2,000	-2,714	79	1,205	-1,430
		COMMUNICATION													
Totals:											969	228	4,337	5,533	

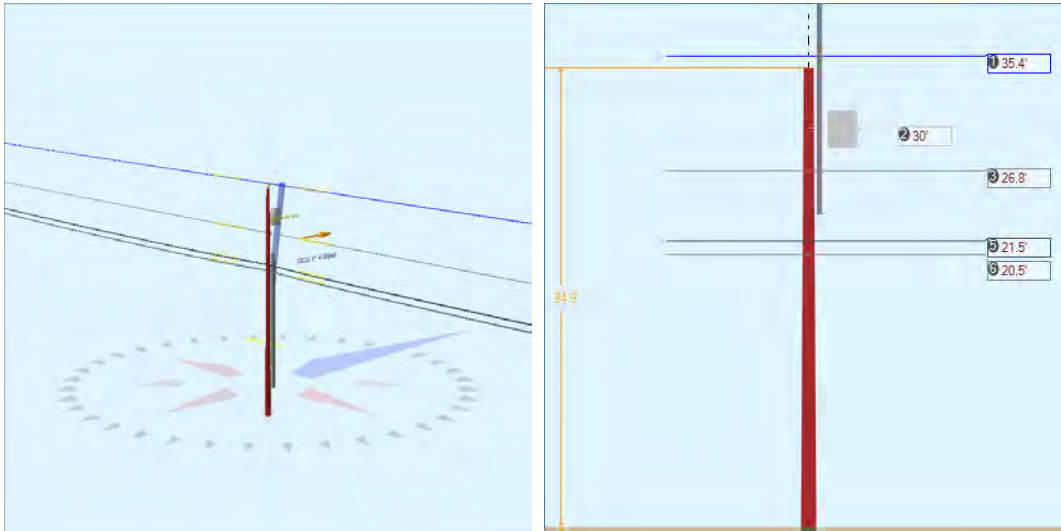
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.25	20.95	90.0	90.0	365.00	39.00	--	22.00	--	1	1,218	1,219
Totals:											1	1,218	1,219	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 330.0°	Riser	KU, UTILITY	26.42	5.85	330.0	330.0	26.42	317.06	2.50	2.50	317.06	-11	366	355
Riser 310.0°	Riser	KU, UTILITY	23.35	5.85	310.0	310.0	23.35	280.18	4.00	4.00	280.18	-15	673	659
Riser 280.0°	Riser	KU, UTILITY	23.35	5.85	280.0	280.0	23.35	280.18	4.00	4.00	280.18	-4	840	836
Riser 250.0°	Riser	KU, UTILITY	23.35	5.85	250.0	250.0	23.35	280.18	4.00	4.00	280.18	8	782	790
Riser 220.0°	Riser	KU, UTILITY	23.35	5.85	220.0	220.0	23.35	280.18	4.00	4.00	280.18	17	514	531
Totals:											-4	3,175	3,171	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.05	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.73	0.00	184.1	94.1	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.76	0.00	184.1	94.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.86	0.00	184.1	94.1	5.00	3.00	0.00	5	0	5
Totals:										13	170	183

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.24	33.22	10.65	13.57	7.32	11.47	1.60e+6	60.00	57.00	34.05	35,886	359.82	10.64

Pole Num:	67W - 64094-95048	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.21	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963532 Deg	Longitude:	-84.489066 Deg	Elevation:	824.526381828556		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.3	1.3
Groundline	19.3	1.3
Vertical	9.2	1.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,012	1.3
Groundline	16,012	1.3
GL Allowable	85,207	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 6.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	135	18.0	4,238	26.5	5.0	337	132	1	339	5.0
Comms	244	32.7	4,886	30.5	5.7	389	434	4	393	5.8
PowerEquipments	36	4.8	1,221	7.6	1.4	97	636	6	103	1.5
Pole	189	25.3	3,330	20.8	3.9	265	1,940	19	284	4.2
Risers	137	18.3	2,173	13.6	2.6	173	133	1	174	2.6
Insulators	5	0.7	164	1.0	0.2	13	48	0	13	0.2
Pole Load	746	100.0	16,012	100.0	18.8	1,275	3,323	32	1,307	19.2
Pole Reserve Capacity			69,195		81.2	5,525			5,493	80.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 6.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	313	41.9	7,807	48.8	9.2	622	931	9	630	9.3
Unknown, COMMUNICATION	244	32.7	4,875	30.5	5.7	388	453	4	392	5.8
Pole	189	25.3	3,330	20.8	3.9	265	1,940	19	284	4.2
Totals:	746	100.0	16,012	100.0	18.8	1,275	3,323	32	1,307	19.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.43	0.00	0.3980	0.19	0.145	99.3	93.7	99.3	2,128	4,274	0	919	5,193
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.43	0.00	0.3980	0.19	0.145	101.7	274.1	101.7	2,128	-3,748	0	942	-2,806
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.80	6.63	0.3980	0.19	0.145	99.3	93.7	99.3	2,128	3,231	18	695	3,944
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.80	6.63	0.3980	0.19	0.145	101.7	274.1	101.7	2,128	-2,834	18	712	-2,103
Totals:											924	37	3,268	4,228	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.54	6.95	1.3300	1.31	0.337	99.3	93.7	99.3	925	1,129	-45	1,138	2,222
CATV	CATV 1.0	Unknown, COMMUNICATION	21.54	6.95	1.3300	1.35	0.337	101.7	274.1	101.7	925	-990	-46	1,166	130
Telco	TELE 1.5	Unknown, COMMUNICATION	20.51	7.02	1.5000	1.52	0.900	99.3	93.7	99.3	2,000	2,324	-80	1,185	3,429
Telco	TELE 1.5	Unknown, COMMUNICATION	20.51	7.02	1.5000	1.56	0.900	101.7	274.1	101.7	2,000	-2,038	-81	1,213	-906
Totals:											425	-252	4,702	4,874	

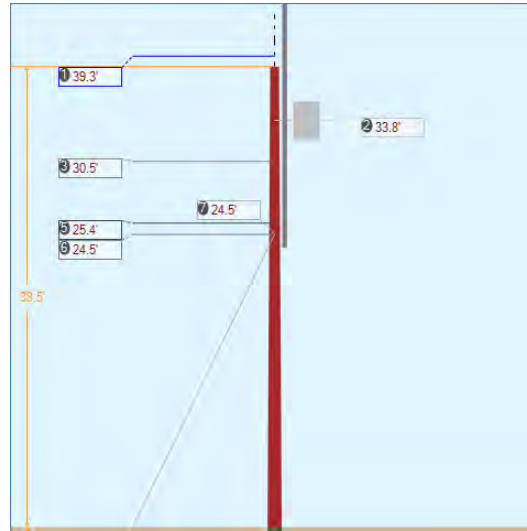
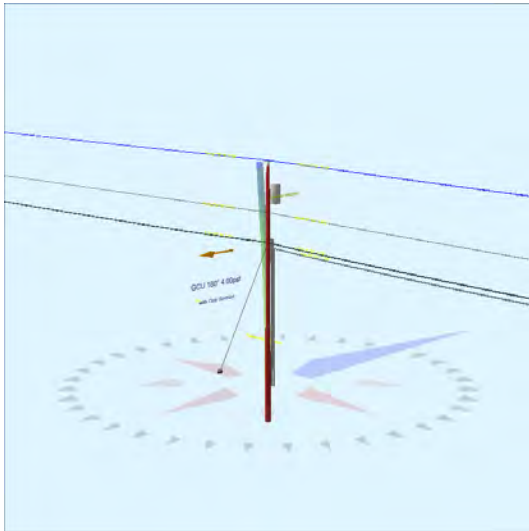
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	29.95	20.94	90.0	90.0	335.00	34.00	--	22.00	--	134	1,084	1,218
Totals:											134	1,084	1,218	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 90.0°	Riser	KU, UTILITY	23.38	5.85	90.0	90.0	23.38	280.50	4.00	4.00	280.50	3	846	848
Riser 65.0°	Riser	KU, UTILITY	23.38	5.85	65.0	65.0	23.38	280.50	4.00	4.00	280.50	12	759	771
Riser 40.0°	Riser	KU, UTILITY	23.38	5.85	40.0	40.0	23.38	280.50	4.00	4.00	280.50	19	529	549
Totals:											34	2,133	2,168	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.56	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.80	0.00	3.9	273.9	2.00	3.00	3.19	2	12	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.54	0.00	183.9	273.9	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.51	0.00	183.9	273.9	5.00	3.00	0.00	-6	0	-6	
Totals:											-9	172	163

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.43	33.24	10.70	13.54	7.32	11.53	1.60e+6	60.00	57.00	34.56	35,941	361.23	10.87

Pole Num:	68W - 63996-95048	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.54	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963539 Deg	Longitude:	-84.489414 Deg	Elevation:	817.877253420965		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	49.6	180.0
Groundline	49.6	180.0
Vertical	4.1	90.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	45,027	180.0
Groundline	45,027	180.0
GL Allowable	93,097	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	12.3	270.0		21.8	180.0	24.4	90.0
? EHS 1/4 (Down)			24.5	72.7	180.0	89.8	90.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 164.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	683	42.4	23,213	51.6	24.9	1,745	130	1	1,746	25.7
Comms	1,152	71.6	27,681	61.5	29.7	2,081	295	3	2,083	30.6
GuyBraces	-503	-31.3	-11,958	-26.6	-12.9	-899	5,866	53	-846	-12.4
PowerEquipments	40	2.5	1,632	3.6	1.8	123	694	6	129	1.9
Pole	208	12.9	3,897	8.7	4.2	293	2,243	20	313	4.6
Risers	25	1.6	372	0.8	0.4	28	98	1	29	0.4
Insulators	5	0.3	190	0.4	0.2	14	48	0	15	0.2
Pole Load	1,609	100.0	45,027	100.0	48.4	3,384	9,374	85	3,469	51.0
Pole Reserve Capacity			48,070		51.6	3,416			3,331	49.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 164.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	753	46.8	25,400	56.4	27.3	1,909	950	9	1,918	28.2
Unknown, COMMUNICATION	648	40.3	15,730	34.9	16.9	1,182	6,180	56	1,238	18.2
Pole	208	12.9	3,897	8.7	4.2	293	2,243	20	313	4.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,609	100.0	45,027	100.0	48.4	3,384	9,374	85	3,469	51.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.33	0.00	0.3980	0.19	0.145	101.7	94.1	101.7	2,128	36,340	0	985	37,325
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.33	0.00	0.3980	0.17	0.145	96.2	267.8	96.2	2,128	-24,861	0	964	-23,896
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.54	6.63	0.3980	0.19	0.145	101.7	94.1	101.7	2,128	28,208	18	765	28,991
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.54	6.63	0.3980	0.17	0.145	96.2	267.8	96.2	2,128	-19,297	17	748	-18,532
Totals:											20,389	35	3,462	23,887	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.38	6.93	1.3300	1.35	0.337	101.7	94.1	101.7	925	10,189	45	1,295	11,529
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.38	6.93	1.3300	1.26	0.337	96.2	267.8	96.2	925	-6,970	43	1,267	-5,660
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	24.45	6.99	1.5000	1.56	0.900	101.7	94.1	101.7	2,000	21,225	27	1,364	22,616
		COMMUNICATION													
Totals:											24,444	115	3,926	28,485	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	33.77	20.94	90.0	90.0	365.00	39.00	--	22.00	--	321	1,358	1,679
Totals:											321	1,358	1,679	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 350.0°	Riser	KU, UTILITY	25.75	6.09	350.0	350.0	25.75	309.05	4.00	4.00	309.05	-26	173	147
Riser 15.0°	Riser	KU, UTILITY	25.75	6.09	15.0	15.0	25.75	309.05	4.00	4.00	309.05	-22	257	235
Totals:											-48	430	383	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.46	0.00	0.0	0.0	13.00	9.00	10.50	0	172	172
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.54	0.00	176.0	86.0	2.00	3.00	3.19	2	14	16
Bolt	Three Bolt	Unknown, COMMUNICATION	25.38	0.00	176.0	86.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	24.45	0.00	94.1	94.1	5.00	3.00	0.00	2	0	2
Totals:										9	186	195

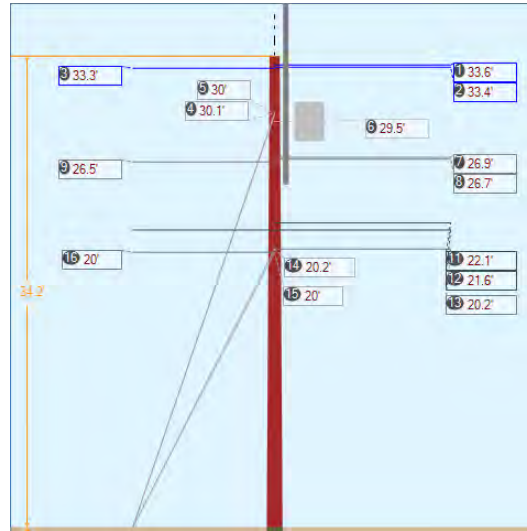
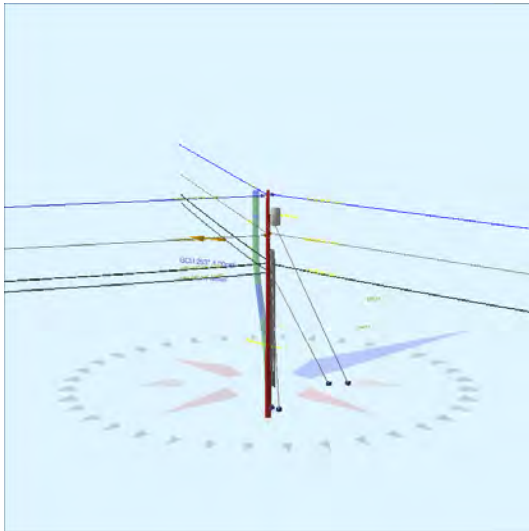
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	24.45	0.00	12.33	0.25	75.00	270.0	63.0	0.121	25.72	1.59

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	5,372	4,884	4,349	3,876	1,973	-525	-12,305
Totals:									3,876	1,973	-525	-12,305

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	12.33	270.0	20,000	1.00	20,000	4,884	4,349	24.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.82	33.56	10.93	14.19	7.32	11.88	1.60e+6	60.00	57.00	38.46	229,917	2286.26	24.39

Pole Num:	69W - 63907-95026	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.78	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.09	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963498 Deg	Longitude:	-84.489749 Deg	Elevation:	822.014455261135		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.7	0.0
Groundline	27.7	0.0
Vertical	13.8	25.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,637	244.8
Groundline	20,637	244.8
GL Allowable	84,313	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	14.1	40.4	30.1	32.5	252.7	33.0	210.0
? Single Helix Anchor ? EHS 3/8 (Down)	14.8	127.9	30.0	8.7	252.7	9.9	310.0
? Single Helix Anchor ? EHS 1/4 (Down)	10.6	40.7	20.2	22.8	252.7	23.0	220.0
? Single Helix Anchor ? EHS 1/4 (Down)	13.9	132.5	20.0	8.7	252.7	9.6	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 244.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,474	126.5	43,465	210.6	51.6	5,885	187	2	5,887	86.6
Comms	4,167	213.0	50,638	245.4	60.1	6,856	480	5	6,861	100.9
GuyBraces	-5,044	-257.9	-77,122	-373.7	-91.5	-10,442	19,498	188	-10,254	-150.8
PowerEquipments	36	1.8	351	1.7	0.4	48	636	6	54	0.8
Pole	186	9.5	1,929	9.4	2.3	261	1,913	18	280	4.1
Risers	129	6.6	1,206	5.8	1.4	163	136	1	165	2.4
Insulators	8	0.4	170	0.8	0.2	23	76	1	24	0.3
Pole Load	1,956	100.0	20,637	100.0	24.5	2,794	22,925	221	3,015	44.3
Pole Reserve Capacity			63,676		75.5	4,006			3,785	55.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 244.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-149	-7.6	-4,909	-23.8	-5.8	-665	12,222	118	-547	-8.0
Unknown, COMMUNICATION	1,919	98.1	23,617	114.4	28.0	3,198	8,791	85	3,282	48.3
Pole	186	9.5	1,929	9.4	2.3	261	1,913	18	280	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,956	100.0	20,637	100.0	24.5	2,794	22,925	221	3,015	44.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.58	16.45	0.3980	0.13	0.145	96.2	87.8	96.2	2,128	-85,524	-9	86	-85,447
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.43	16.46	0.3980	0.11	0.145	82.4	301.1	82.4	2,128	51,315	5	449	51,769
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.34	16.46	0.3980	0.17	0.145	104.8	208.2	104.8	2,128	74,030	9	382	74,421
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.88	6.61	0.3980	0.13	0.145	96.2	87.8	96.2	2,128	-68,453	-17	69	-68,401
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.73	6.62	0.3980	0.11	0.145	82.4	301.1	82.4	2,128	41,033	8	359	41,400
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.53	6.63	0.3980	0.17	0.145	104.8	208.2	104.8	2,128	58,908	15	304	59,227
Totals:											71,308	11	1,649	72,968	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.11	6.90	1.3300	1.06	0.337	82.4	301.1	82.4	925	14,755	21	605	15,380
CATV	CATV 1.0	Unknown, COMMUNICATION	21.60	6.93	1.3300	1.25	0.337	96.2	87.8	96.2	925	-23,911	-43	113	-23,841
CATV	CATV 1.0	Unknown, COMMUNICATION	21.60	6.93	1.3300	1.38	0.337	104.8	208.2	104.8	925	20,851	38	505	21,394
Telco	TELE 1.5	Unknown, COMMUNICATION	20.22	7.01	1.5000	1.22	0.900	82.4	301.1	82.4	2,000	29,174	37	605	29,815

Telco	TELE 1.5	Unknown,	19.97	7.03	1.5000	1.61	0.900	104.8	208.2	104.8	2,000	41,685	68	510	42,262	
COMMUNICATION												Totals:	82,553	121	2,337	85,011

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	29.51	20.95	360.0	360.0	335.00	34.00	--	22.00	--	-473	1,063	590
Totals:												-473	1,063	590

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 340.0°	Riser	KU, UTILITY	23.90	5.85	340.0	340.0	23.90	286.85	4.00	4.00	286.85	-2	880	877
Riser 50.0°	Riser	KU, UTILITY	23.90	5.85	50.0	50.0	23.90	286.85	4.00	4.00	286.85	-23	339	317
Riser 360.0°	Riser	KU, UTILITY	23.90	5.85	360.0	360.0	23.90	286.85	4.00	4.00	286.85	-10	840	831
Totals:												-35	2,059	2,025

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	33.58	0.00	87.8	87.8	3.00	3.80	12.75	-7	78	71
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.43	0.00	301.1	301.1	3.00	3.80	12.75	4	78	82
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.34	0.00	208.2	208.2	3.00	3.80	12.75	6	78	84
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.88	0.00	77.8	77.8	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.73	0.00	301.1	301.1	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.53	0.00	208.2	208.2	2.00	3.00	3.19	2	12	14
Bolt	Single Bolt	Unknown, COMMUNICATION	22.11	0.00	301.1	391.1	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	21.60	0.00	77.8	77.8	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	21.60	0.00	208.2	298.2	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.22	0.00	301.1	391.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	19.97	0.00	208.2	298.2	5.00	3.00	0.00	4	0	4
Totals:										14	271	285

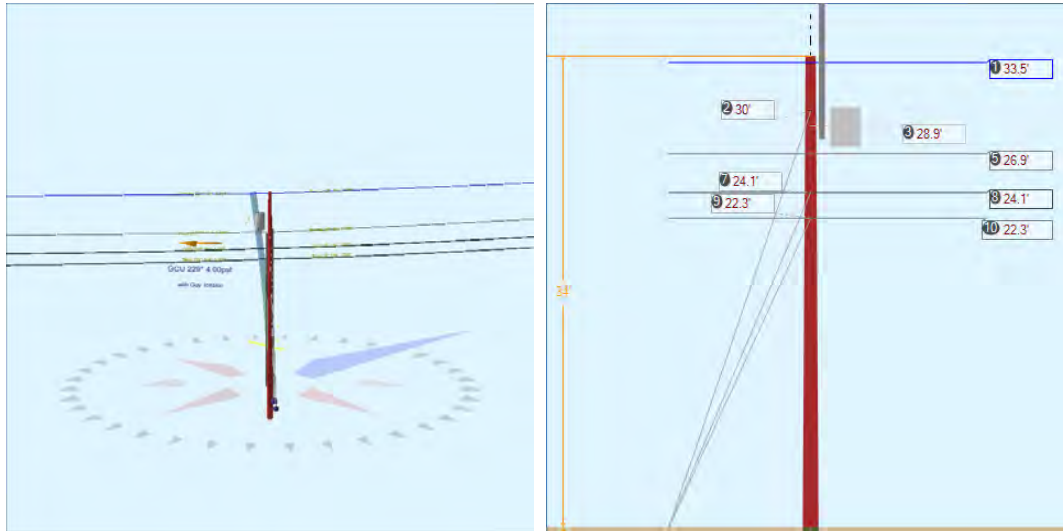
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	30.09	0.00	14.09	0.375	75.00	40.4	64.7	0.273	31.59	1.29
EHS 3/8	Down	KU, UTILITY	29.99	0.00	14.81	0.375	75.00	127.9	63.5	0.273	31.80	0.35
EHS 1/4	Down	Unknown, COMMUNICATION	20.22	0.00	10.64	0.25	75.00	40.7	62.0	0.121	21.18	1.37
EHS 1/4	Down	Unknown, COMMUNICATION	19.97	0.00	13.85	0.25	75.00	132.5	55.1	0.121	22.59	0.56

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,249	6,590	6,491	5,867	2,777	-2,528	-73,950
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,181	1,983	1,747	1,563	780	-353	-10,149
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,057	4,597	4,557	4,025	2,138	-1,952	-38,076
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,109	1,917	1,737	1,424	995	-378	-7,297
Totals:										12,878	6,689	-5,212	-129,473

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	14.09	40.4	20,000	1.00	20,000	6,590	6,491	33.0
Single Helix Anchor			18.00	14.81	127.9	20,000	1.00	20,000	1,983	1,747	9.9
Single Helix Anchor			18.00	10.64	40.7	20,000	1.00	20,000	4,597	4,557	23.0
Single Helix Anchor			18.00	13.85	132.5	20,000	1.00	20,000	1,917	1,737	9.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.53	34.06	10.43	22.68	7.32	11.49	1.60e+6	60.00	57.00	34.23	166,048	1661.27	7.25

Pole Num:	70W - 63860-94937	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.02	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.99	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963243 Deg	Longitude:	-84.489916 Deg	Elevation:	805.518823536998		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.1	0.0
Groundline	19.1	0.0
Vertical	5.8	25.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	14,836	233.7
Groundline	14,836	233.7
GL Allowable	83,658	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	14.4	131.0	30.0	13.6	229.3	15.5	310.0
? Single Helix Anchor ? EHS 1/4 (Down)	10.6	131.0	24.1	5.3	229.3	6.4	310.0
? Single Helix Anchor ? EHS 1/4 (Down)	9.4	131.0	22.3	17.8	229.3	23.4	310.0
				5.1	229.3	6.2	310.0
				16.9	229.3	22.7	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 233.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	424	65.0	11,803	79.6	14.1	1,043	137	1	1,044	15.4
Comms	306	46.9	6,490	43.8	7.8	573	451	4	578	8.5
GuyBraces	-410	-62.9	-10,294	-69.4	-12.3	-909	6,587	64	-845	-12.4
PowerEquipments	36	5.6	1,986	13.4	2.4	176	636	6	182	2.7
Pole	186	28.5	2,954	19.9	3.5	261	1,893	18	279	4.1
Risers	108	16.5	1,796	12.1	2.2	159	103	1	160	2.3
Insulators	3	0.5	101	0.7	0.1	9	44	0	9	0.1
Pole Load	652	100.0	14,836	100.0	17.7	1,311	9,850	96	1,406	20.7
Pole Reserve Capacity			68,822		82.3	5,490			5,394	79.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 233.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	326	49.9	8,918	60.1	10.7	788	4,601	45	832	12.2
Unknown, COMMUNICATION	141	21.6	2,964	20.0	3.5	262	3,356	33	294	4.3
Pole	186	28.5	2,954	19.9	3.5	261	1,893	18	279	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	652	100.0	14,836	100.0	17.7	1,311	9,850	96	1,406	20.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.52	15.19	0.3980	0.15	0.145	104.0	221.5	104.0	2,128	90,635	2	26	90,663
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.52	15.19	0.3980	0.15	0.145	104.8	28.2	104.8	2,128	-83,702	2	142	-83,558
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.95	6.59	0.3980	0.15	0.145	104.8	28.2	104.8	2,128	-67,293	6	115	-67,172
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.95	6.59	0.3980	0.15	0.145	104.0	221.5	104.0	2,128	72,866	6	21	72,894
Totals:											12,506	17	304	12,826	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	24.14	6.76	1.3300	1.38	0.337	104.8	28.2	104.8	925	-26,205	10	209	-25,986
CATV	CATV 1.0	Unknown, COMMUNICATION	24.14	6.76	1.3300	1.37	0.337	104.0	221.5	104.0	925	28,376	10	38	28,424
Telco	TELE 1.5	Unknown, COMMUNICATION	22.28	6.87	1.5000	1.61	0.900	104.8	28.2	104.8	2,000	-52,298	17	211	-52,070
Telco	TELE 1.5	Unknown, COMMUNICATION	22.28	6.87	1.5000	1.59	0.900	104.0	221.5	104.0	2,000	56,630	17	39	56,686
Totals:											6,502	54	497	7,053	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Transformer	1PH-15KVA	KU, UTILITY	28.92	20.97	230.0	230.0	335.00	34.00	--	22.00	--	1,110	1,049	2,159	
												Totals:	1,110	1,049	2,159

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Riser 340.0°	Riser	KU, UTILITY	27.37	5.85	340.0	340.0	27.37	328.44	4.00	4.00	328.44	-8	1,087	1,079	
Riser 280.0°	Riser	KU, UTILITY	26.68	5.85	280.0	280.0	26.68	320.17	4.00	4.00	320.17	18	854	872	
												Totals:	10	1,941	1,952

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension Insulator - 15 kV	KU, UTILITY	33.52	0.00	311.5	311.5	11.00	4.75	11.50	6	89	94	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.95	0.00	304.9	214.9	2.00	3.00	3.19	1	12	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.14	0.00	311.5	221.5	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.28	0.00	311.5	221.5	5.00	3.00	0.00	1	0	1	
										Totals:	9	101	110

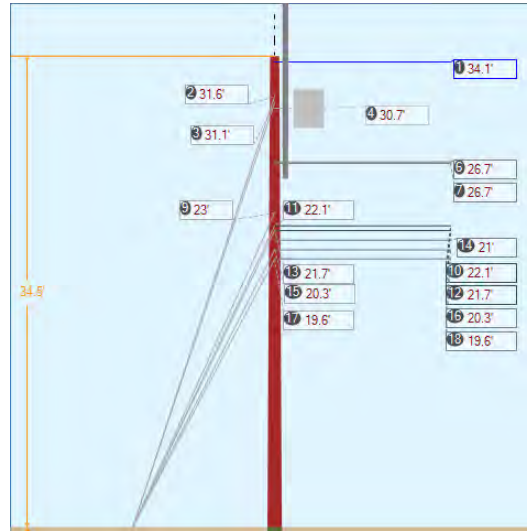
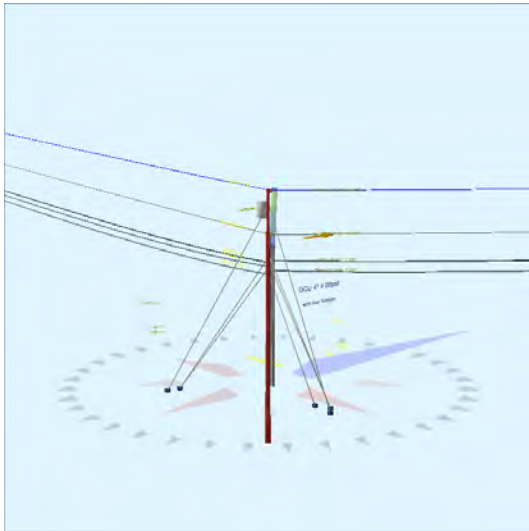
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	29.99	0.00	14.38	0.375	75.00	131.0	64.2	0.273	31.62	0.54
EHS 1/4	Down	Unknown, COMMUNICATION	24.14	0.00	10.61	0.25	75.00	131.0	66.0	0.121	24.73	0.37
EHS 1/4	Down	Unknown, COMMUNICATION	22.28	0.00	9.41	0.25	75.00	131.0	66.9	0.121	22.55	0.32

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)		
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,399	3,090	2,717	2,445	1,185	-260	-7,353	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,400	1,272	1,063	971	432	-95	-2,075	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,359	1,235	1,014	933	399	-88	-1,759	
										Totals:	4,349	2,015	-442	-11,187

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	14.38	131.0	20,000	1.00	20,000	3,090	2,717	15.4
Single Helix Anchor		18.00	10.61	131.0	20,000	1.00	20,000	1,272	1,063	6.4
Single Helix Anchor		18.00	9.41	131.0	20,000	1.00	20,000	1,235	1,014	6.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.20	34.02	10.41	14.86	7.32	11.46	1.60e+6	60.00	57.00	33.98	169,448	1698.34	17.24

Pole Num:	71W - 63792-94849	Pole Length / Class:	45 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	10.50	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.38	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963062 Deg	Longitude:	-84.490131 Deg	Elevation:	816.320586611476		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	46.2	31.7
Groundline	22.7	0.0
Vertical	41.2	26.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	6,988	342.7
Groundline	15,047	335.0
GL Allowable	66,758	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.5	103.6		36.4	4.1	36.7	330.0
? EHS 3/8 (Down)			31.6	52.5	4.1	58.2	330.0
? Single Helix Anchor	17.7	213.4		45.1	4.1	45.1	5.5
? EHS 3/8 (Down)			31.1	65.1	4.1	71.6	5.5
? Single Helix Anchor	15.4	216.9		36.7	4.1	36.7	10.0
? EHS 1/4 (Down)			22.1	61.9	4.1	68.2	10.0
? EHS 1/4 (Down)			20.3	60.6	4.1	66.7	10.0
? Single Helix Anchor	17.5	98.9		31.9	4.1	32.4	310.0
? EHS 1/4 (Down)			21.7	54.0	4.1	60.4	310.0
? EHS 1/4 (Down)			23.0	52.5	4.1	58.6	310.0
? Single Helix Anchor	14.9	103.3		18.6	4.1	18.9	310.0
? EHS 1/4 (Down)			19.6	62.1	4.1	69.4	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 335.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,716	369.9	73,696	489.8	110.4	17,699	200	2	17,701	260.3
Comms	5,779	373.9	50,804	337.6	76.1	12,201	928	10	12,212	179.6
GuyBraces	-10,185	-659.0	-111,703	-742.4	-167.3	-26,827	42,208	476	-26,351	-387.5
PowerEquipments	32	2.1	679	4.5	1.0	163	636	7	170	2.5
Pole	152	9.8	1,131	7.5	1.7	272	1,635	18	290	4.3
Risers	48	3.1	379	2.5	0.6	91	145	2	93	1.4
Insulators	3	0.2	60	0.4	0.1	15	76	1	15	0.2
Pole Load	1,546	100.0	15,047	100.0	22.5	3,614	45,829	517	4,130	60.7
Pole Reserve Capacity			51,711		77.5	3,186			2,670	39.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 335.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,138	73.7	12,906	85.8	19.3	3,100	22,172	250	3,349	49.3
Unknown, COMMUNICATION	255	16.5	1,010	6.7	1.5	243	22,022	248	491	7.2
Pole	152	9.8	1,131	7.5	1.7	272	1,635	18	290	4.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,546	100.0	15,047	100.0	22.5	3,614	45,829	517	4,130	60.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.06	14.87	0.3980	0.16	0.145	104.0	41.5	104.0	2,128	37,540	10	517	38,066
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.06	14.87	0.3980	0.72	0.145	199.4	282.9	199.4	2,128	57,908	18	1,386	59,312
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.75	6.29	0.3980	0.72	0.145	199.4	282.9	199.4	2,128	45,478	21	1,089	46,588
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.66	6.29	0.3980	0.16	0.145	104.0	41.5	104.0	2,128	29,379	7	405	29,791
Totals:											170,304	56	3,397	173,757	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.07	6.55	1.3300	1.37	0.337	104.0	41.5	104.0	925	10,573	18	683	11,274
CATV	CATV 1.0	Unknown, COMMUNICATION	21.73	6.57	1.3300	3.11	0.337	199.4	282.9	199.4	925	16,055	53	1,802	17,910
Telco	TELE 1.5	Unknown, COMMUNICATION	21.01	6.61	1.5000	3.70	0.900	199.4	282.9	199.4	2,000	33,577	93	1,905	35,575
Telco	TELE 1.5	Unknown, COMMUNICATION	20.32	6.65	1.5000	1.59	0.900	104.0	41.5	104.0	2,000	21,052	31	687	21,771
Telco	TELE 1.5	Unknown, COMMUNICATION	19.64	6.69	1.5000	3.70	0.900	199.4	282.9	199.4	2,000	31,380	94	1,780	33,254
Totals:											112,638	288	6,857	119,784	

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-15KVA	KU, UTILITY	30.71	20.56	280.0	280.0	335.00	34.00	--	22.00	--	626	976	1,602
Totals:												626	976	1,602

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 335.0°	Riser	KU, UTILITY	26.89	5.68	335.0	335.0	26.89	322.71	4.00	4.00	322.71	25	478	503
Riser 25.0°	Riser	KU, UTILITY	24.71	5.68	25.0	25.0	24.71	296.56	4.00	4.00	296.56	15	297	312
Riser 360.0°	Riser	KU, UTILITY	24.71	5.68	360.0	360.0	24.71	296.56	4.00	4.00	296.56	21	59	80
Totals:												61	833	895

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension Insulator - 15 kV	KU, UTILITY	34.06	0.00	342.2	342.2	11.00	4.75	11.50	26	79	105	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.75	0.00	282.9	282.9	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.66	0.00	41.5	41.5	2.00	3.00	3.19	1	11	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.07	0.00	41.5	41.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt	Unknown, COMMUNICATION	21.73	0.00	282.9	372.9	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	Unknown, COMMUNICATION	21.01	0.00	282.9	372.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.32	0.00	41.5	41.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.64	0.00	282.9	372.9	5.00	3.00	0.00	3	0	3	
Totals:											42	101	142

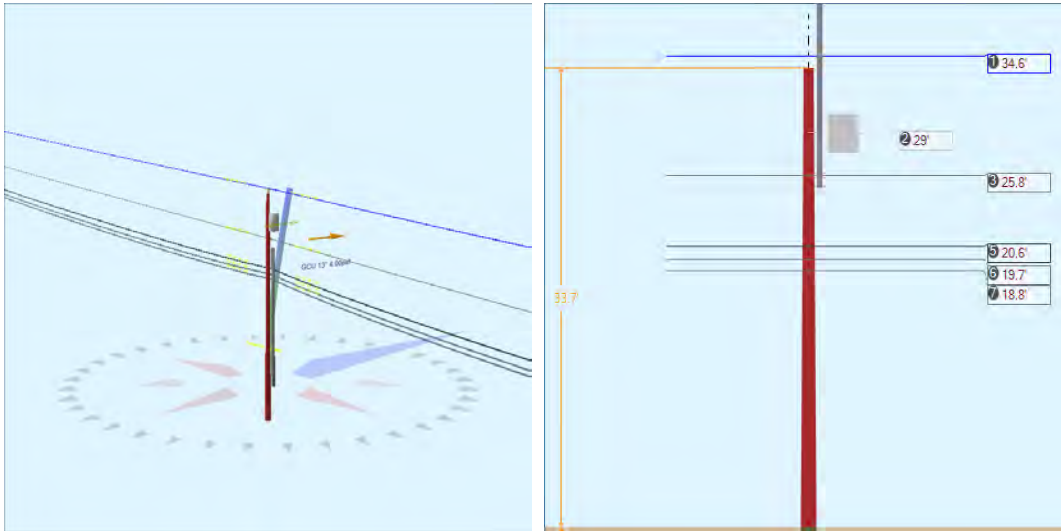
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	31.55	0.00	19.53	0.375	75.00	103.6	58.1	0.273	35.45	1.63
EHS 3/8	Down	KU, UTILITY	31.07	0.00	17.65	0.375	75.00	213.4	60.2	0.273	34.09	1.94
EHS 1/4	Down	Unknown, COMMUNICATION	22.07	0.00	15.41	0.25	75.00	216.9	54.9	0.121	25.23	1.33
EHS 1/4	Down	Unknown, COMMUNICATION	20.32	0.00	15.41	0.25	75.00	216.9	52.7	0.121	23.80	1.22
EHS 1/4	Down	Unknown, COMMUNICATION	21.72	0.00	17.50	0.25	75.00	98.9	51.0	0.121	26.19	1.20
EHS 1/4	Down	Unknown, COMMUNICATION	23.01	0.00	17.50	0.25	75.00	98.9	52.6	0.121	27.21	1.21
EHS 1/4	Down	Unknown, COMMUNICATION	19.64	0.00	14.90	0.25	75.00	103.3	52.6	0.121	22.94	1.21

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,066	7,333	7,276	6,173	3,851	-2,403	-74,367
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,930	9,027	9,027	7,833	4,487	-2,352	-71,587
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,080	3,710	3,707	3,033	2,132	-1,003	-21,667
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,990	3,628	3,624	2,881	2,198	-1,035	-20,600
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,618	3,289	3,234	2,513	2,036	-1,137	-24,223
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,509	3,190	3,144	2,497	1,910	-1,067	-24,046
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,152	3,774	3,714	2,952	2,254	-1,399	-26,880
Totals:										27,881	18,868	-10,395	-263,369

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	19.53	103.6	20,000	1.00	20,000	7,333	7,276	36.7
Single Helix Anchor			18.00	17.65	213.4	20,000	1.00	20,000	9,027	9,027	45.1
Single Helix Anchor			18.00	15.41	216.9	20,000	1.00	20,000	7,336	7,330	36.7
Single Helix Anchor			18.00	17.50	98.9	20,000	1.00	20,000	6,478	6,377	32.4
Single Helix Anchor			18.00	14.90	103.3	20,000	1.00	20,000	3,774	3,714	18.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.39	34.26	9.59	32.52	6.69	10.63	1.60e+6	60.00	57.00	34.50	111,306	1112.35	2.43

Pole Num:	72W - 63595-94895	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.28	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.89	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963137 Deg	Longitude:	-84.490807 Deg	Elevation:	804.790602372264		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.1	13.4
Groundline	28.1	13.4
Vertical	11.5	13.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,810	13.4
Groundline	22,810	13.4
GL Allowable	82,978	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 15.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	181	17.8	5,542	24.3	6.7	453	228	2	455	6.7
Comms	587	57.7	12,299	53.9	14.8	1,005	1,220	12	1,017	15.0
PowerEquipments	36	3.6	1,167	5.1	1.4	95	636	6	102	1.5
Pole	184	18.1	3,173	13.9	3.8	259	1,872	18	278	4.1
Risers	24	2.4	441	1.9	0.5	36	92	1	37	0.5
Insulators	5	0.5	188	0.8	0.2	15	57	1	16	0.2
Pole Load	1,018	100.0	22,810	100.0	27.5	1,864	4,105	40	1,904	28.0
Pole Reserve Capacity			60,168		72.5	4,936			4,896	72.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 15.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	247	24.2	7,322	32.1	8.8	598	984	10	608	8.9
Unknown, COMMUNICATION	587	57.7	12,315	54.0	14.8	1,006	1,248	12	1,019	15.0
Pole	184	18.1	3,173	13.9	3.8	259	1,872	18	278	4.1
Totals:	1,018	100.0	22,810	100.0	27.5	1,864	4,105	40	1,904	28.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.60	0.00	0.3980	0.40	0.145	146.2	282.9	146.2	2,128	-3,708	0	1,324	-2,385
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.60	0.00	0.3980	0.72	0.145	199.4	102.9	199.4	2,128	3,708	0	1,805	5,514
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.83	6.64	0.3980	0.72	0.145	199.4	102.9	199.4	2,128	2,768	36	1,347	4,151
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.83	6.64	0.3980	0.40	0.145	146.2	282.9	146.2	2,128	-2,768	27	988	-1,753
Totals:											0	63	5,464	5,526	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.64	6.96	1.3300	2.08	0.337	146.2	282.9	146.2	925	-961	67	1,608	714
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.64	6.96	1.3300	3.11	0.337	199.4	102.9	199.4	925	961	91	2,193	3,245
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.66	7.02	1.5000	2.44	0.900	146.2	282.9	146.2	2,000	-1,979	117	1,674	-188
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.66	7.02	1.5000	3.70	0.900	199.4	102.9	199.4	2,000	1,979	160	2,283	4,422
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.84	7.07	1.5000	2.44	0.900	146.2	282.9	146.2	2,000	-1,897	118	1,604	-174
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.84	7.07	1.5000	3.70	0.900	199.4	102.9	199.4	2,000	1,897	161	2,188	4,246
		COMMUNICATION													
Totals:											0	713	11,552	12,265	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	28.96	20.95	100.0	100.0	335.00	34.00	--	22.00	--	112	1,052	1,164
Totals:											112	1,052	1,164	

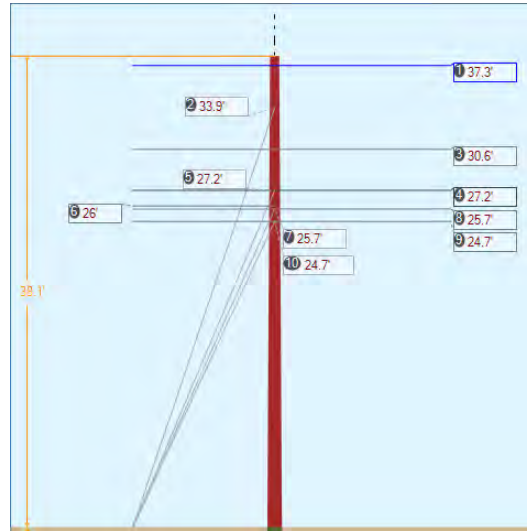
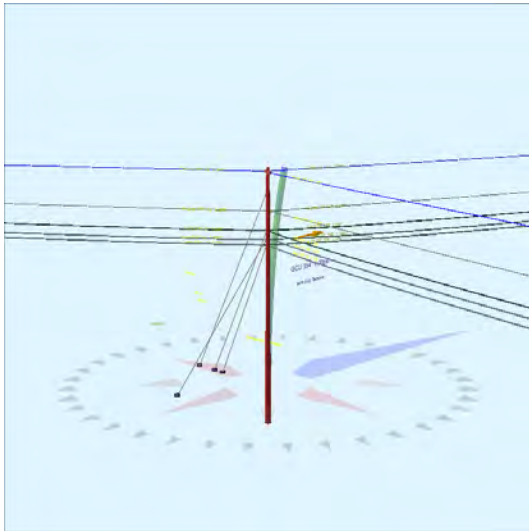
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 25.0°	Riser	KU, UTILITY	24.20	5.85	25.0	25.0	24.20	290.42	4.00	4.00	290.42	23	184	207
Riser 360.0°	Riser	KU, UTILITY	24.20	5.85	360.0	360.0	24.20	290.42	4.00	4.00	290.42	23	210	233
Totals:											46	394	440	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.72	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.83	0.00	12.9	282.9	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	20.64	0.00	12.9	282.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.66	0.00	12.9	282.9	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	18.84	0.00	12.9	282.9	5.00	3.00	0.00	6	0	6
Totals:										19	169	188

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.17	33.22	10.61	14.80	7.32	11.43	1.60e+6	60.00	57.00	33.72	35,635	356.93	8.70

Pole Num:	73W - 63429-94935	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.89	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.17	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963261 Deg	Longitude:	-84.491303 Deg	Elevation:	794.691301715728		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.9	26.0
Groundline	9.7	0.0
Vertical	13.8	27.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,507	358.1
Groundline	8,291	44.8
GL Allowable	92,149	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	18.1	271.0	33.9	23.2	354.1	26.0	120.0
? Single Helix Anchor ? EHS 1/4 (Down)	14.0	271.0	27.3	9.6	354.1	11.9	130.0
? Single Helix Anchor ? EHS 1/4 (Down)	16.7	202.0	25.7	32.1	354.1	43.9	130.0
? Single Helix Anchor ? EHS 1/4 (Down)	11.8	271.0	24.7	25.9	354.1	25.9	354.1
? Single Helix Anchor ? EHS 1/4 (Down)				86.6	354.1	95.2	354.1
? Single Helix Anchor ? EHS 1/4 (Down)				9.0	354.1	11.6	130.0
? Single Helix Anchor ? EHS 1/4 (Down)				30.2	354.1	42.7	130.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 44.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,513	480.3	33,881	408.7	36.8	6,301	217	2	6,303	92.7
Comms	3,029	578.8	30,973	373.6	33.6	5,760	1,162	11	5,770	84.9
GuyBraces	-5,158	-985.6	-57,648	-695.3	-62.6	-10,720	17,774	162	-10,559	-155.3
Pole	135	25.8	1,025	12.4	1.1	191	2,214	20	211	3.1
Insulators	4	0.8	59	0.7	0.1	11	116	1	12	0.2
Pole Load	523	100.0	8,291	100.0	9.0	1,542	21,482	195	1,737	25.5
Pole Reserve Capacity			83,858		91.0	5,258			5,063	74.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 44.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,036	197.9	13,988	168.7	15.2	2,601	6,430	58	2,660	39.1
Unknown, COMMUNICATION	-4,408	-842.4	-45,338	-546.8	-49.2	-8,431	12,468	113	-8,318	-122.3
Unknown, UTILITY	3,761	718.7	38,615	465.8	41.9	7,181	370	3	7,184	105.7
Pole	135	25.8	1,025	12.4	1.1	191	2,214	20	211	3.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	523	100.0	8,291	100.0	9.0	1,542	21,482	195	1,737	25.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.34	15.21	0.3980	0.17	0.145	110.0	18.5	110.0	2,128	92,625	-3	-197	92,425
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.34	15.21	0.3980	0.09	0.145	72.8	236.0	72.8	2,128	-101,321	-2	122	-101,201
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.34	15.21	0.3980	0.38	0.145	146.2	102.9	146.2	2,128	54,540	4	1,149	55,693
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.58	6.61	0.3980	0.38	0.145	146.2	102.9	146.2	2,128	44,669	25	941	45,635
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.56	6.61	0.3980	0.17	0.145	110.0	18.5	110.0	2,128	75,794	4	-161	75,637
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.56	6.61	0.3980	0.09	0.145	72.8	236.0	72.8	2,128	-82,910	3	100	-82,808
Totals:											83,396	31	1,954	85,382	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	27.25	6.80	1.3300	2.08	0.337	146.2	102.9	146.2	925	17,304	18	1,709	19,030
CATV	CATV 1.0	Unknown, COMMUNICATION	27.25	6.80	1.3300	1.46	0.337	110.0	18.5	110.0	925	29,378	-13	-293	29,072
CATV	CATV 1.0	Unknown, COMMUNICATION	27.25	6.80	1.3300	0.93	0.337	72.8	236.0	72.8	925	-32,136	-9	182	-31,963
Telco	TELE 1.5	Unknown, UTILITY	25.99	6.88	1.5000	2.44	0.900	146.2	102.9	146.2	2,000	35,678	61	1,781	37,519

Telco	TELE 1.5	Unknown, COMMUNICATION	25.74	6.89	1.5000	1.06	0.900	72.8	236.0	72.8	2,000	-65,650	-56	188	-65,518
Telco	TELE 1.5	Unknown, UTILITY	25.74	6.89	1.5000	1.70	0.900	110.0	18.5	110.0	2,000	60,010	78	-302	59,785
Telco	TELE 1.5	Unknown, COMMUNICATION	24.74	6.95	1.5000	1.70	0.900	110.0	18.5	110.0	2,000	57,688	-24	-291	57,374
Telco	TELE 1.5	Unknown, COMMUNICATION	24.74	6.95	1.5000	1.06	0.900	72.8	236.0	72.8	2,000	-63,104	-16	181	-62,939
Telco	TELE 1.5	Unknown, COMMUNICATION	24.74	6.95	1.5000	2.44	0.900	146.2	102.9	146.2	2,000	33,967	31	1,696	35,694
Totals:												73,133	70	4,850	78,053

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension Insulator - 15 kV	KU, UTILITY	37.34	0.00	300.0	300.0	11.00	4.75	11.50	-7	63	56
Suspension	Suspension Insulator - 15 kV	KU, UTILITY	37.34	0.00	119.2	119.2	11.00	4.75	11.50	7	63	70
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.58	0.00	60.7	-29.3	2.00	3.00	3.19	2	9	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.56	0.00	326.0	236.0	2.00	3.00	3.19	0	9	9
Bolt	Three Bolt	Unknown, COMMUNICATION	27.25	0.00	119.2	29.2	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	27.25	0.00	299.2	29.2	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, UTILITY	25.99	0.00	102.9	102.9	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	25.74	0.00	236.0	326.0	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, UTILITY	25.74	0.00	18.5	18.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	24.74	0.00	299.2	29.2	5.00	3.00	0.00	-1	0	-1
Bolt	Three Bolt	Unknown, COMMUNICATION	24.74	0.00	119.2	29.2	5.00	3.00	0.00	1	0	1
Totals:										5	144	149

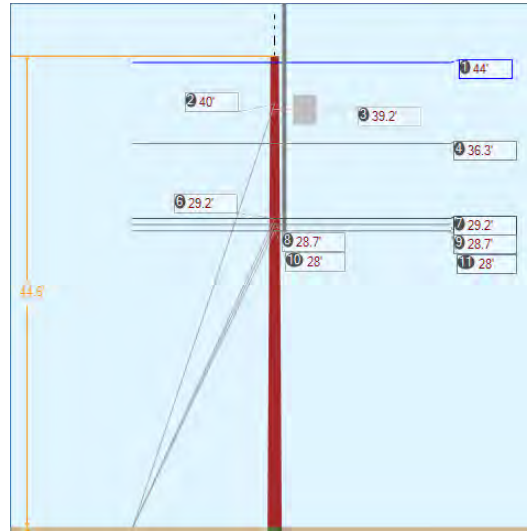
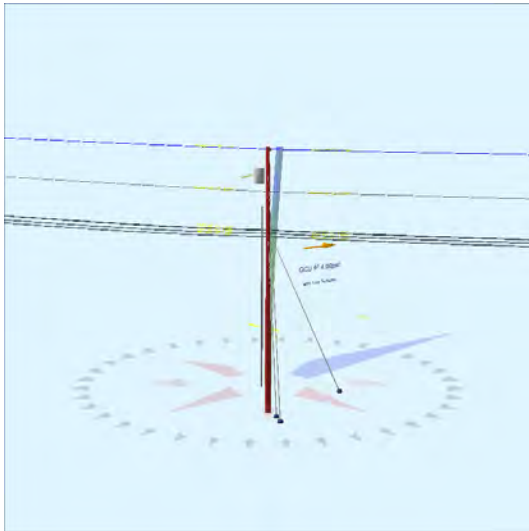
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	33.93	0.00	18.12	0.375	75.00	271.0	61.7	0.273	36.82	1.07
EHS 1/4	Down	Unknown, COMMUNICATION	27.25	0.00	13.97	0.25	75.00	271.0	62.6	0.121	28.96	0.79
EHS 1/4	Down	Unknown, COMMUNICATION	25.74	0.00	16.74	0.25	75.00	202.0	56.8	0.121	29.01	2.13
EHS 1/4	Down	Unknown, COMMUNICATION	24.74	0.00	11.79	0.25	75.00	271.0	64.3	0.121	25.75	0.66

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,727	5,206	4,631	4,077	2,197	-1,520	-50,277
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,625	2,386	1,918	1,704	882	-610	-16,051
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,700	5,182	5,182	4,334	2,840	-2,619	-66,070
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,555	2,323	1,807	1,628	784	-542	-12,876
Totals:										11,743	6,703	-5,291	-145,274

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	18.12	271.0	20,000	1.00	20,000	5,206	4,631	26.0
Single Helix Anchor			18.00	13.97	271.0	20,000	1.00	20,000	2,386	1,918	11.9
Single Helix Anchor			18.00	16.74	202.0	20,000	1.00	20,000	5,182	5,182	25.9
Single Helix Anchor			18.00	11.79	271.0	20,000	1.00	20,000	2,323	1,807	11.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	27.78	34.17	10.71	22.93	7.32	11.84	1.60e+6	60.00	57.00	38.12	155,905	1556.67	7.25

Pole Num:	74W - 63391-94882	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.43	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.22	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.963142 Deg	Longitude:	-84.491506 Deg	Elevation:	800.766151896089		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.6	0.0
Groundline	37.6	0.0
Vertical	5.7	31.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	49,172	34.7
Groundline	49,172	34.7
GL Allowable	135,042	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.7	129.7		12.7	9.3	13.3	320.0
? EHS 3/8 (Down)			40.0	18.3	9.3	21.2	320.0
? Single Helix Anchor	19.9	130.8		13.5	9.3	14.4	330.0
? EHS 1/4 (Down)			29.2	22.7	9.3	26.5	330.0
? EHS 1/4 (Down)			28.0	22.5	9.3	26.5	330.0
? Single Helix Anchor	13.9	64.0		0.0	9.3	0.0	0.0
? EHS 1/4 (Down)			28.7	0.0	9.3	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 34.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	651	40.7	25,779	52.4	19.1	1,318	152	1	1,319	19.4
Comms	860	53.7	24,406	49.6	18.1	1,248	814	6	1,254	18.4
GuyBraces	-243	-15.2	-7,942	-16.2	-5.9	-406	6,702	47	-359	-5.3
PowerEquipments	33	2.1	358	0.7	0.3	18	636	4	23	0.3
Pole	251	15.7	5,440	11.1	4.0	278	3,242	23	301	4.4
Risers	46	2.9	989	2.0	0.7	51	64	0	51	0.8
Insulators	3	0.2	141	0.3	0.1	7	53	0	8	0.1
Pole Load	1,602	100.0	49,172	100.0	36.4	2,514	11,664	82	2,597	38.2
Pole Reserve Capacity			85,870		63.6	4,286			4,203	61.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 34.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	636	39.7	23,400	47.6	17.3	1,197	4,205	30	1,226	18.0
Unknown, COMMUNICATION	715	44.6	20,332	41.4	15.1	1,040	4,217	30	1,069	15.7
Pole	251	15.7	5,440	11.1	4.0	278	3,242	23	301	4.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,602	100.0	49,172	100.0	36.4	2,514	11,664	82	2,597	38.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.98	15.52	0.3980	0.08	0.145	72.8	56.0	72.8	2,128	113,340	4	222	113,566
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.98	15.52	0.3980	0.42	0.145	157.8	249.3	157.8	2,128	-100,133	8	894	-99,231
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.30	6.99	0.3980	0.08	0.145	72.8	56.0	72.8	2,128	93,546	7	183	93,735
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.30	6.99	0.3980	0.42	0.145	157.8	249.3	157.8	2,128	-82,645	14	738	-81,893
Totals:											24,108	33	2,037	26,178	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	29.22	7.42	1.3300	2.28	0.337	157.8	249.3	157.8	925	-28,923	44	1,211	-27,669
CATV	CATV 1.0	Unknown, COMMUNICATION	29.22	7.42	1.3300	0.92	0.337	72.8	56.0	72.8	925	32,738	20	300	33,059
Telco	TELE 1.5	Unknown, COMMUNICATION	28.65	7.46	1.5000	1.06	0.900	72.8	56.0	72.8	2,000	69,410	29	322	69,761
Telco	TELE 1.5	Unknown, COMMUNICATION	28.65	7.46	1.5000	2.69	0.900	157.8	249.3	157.9	2,000	-61,322	63	1,297	-59,961
Telco	TELE 1.5	Unknown, COMMUNICATION	28.04	7.50	1.5000	1.06	0.900	72.8	56.0	72.8	2,000	67,933	29	315	68,277

Telco	TELE 1.5	Unknown,	28.04	7.50	1.5000	2.69	0.900	157.8	249.3	157.9	2,000	-60,017	63	1,270	-58,683		
COMMUNICATION													Totals:	19,819	249	4,715	24,783

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	39.15	21.31	250.0	250.0	335.00	34.00	--	22.00	--	-923	1,286	363
Totals:											-923	1,286	363	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 230.0°	Riser	KU, UTILITY	33.67	6.81	230.0	230.0	33.67	404.06	4.00	4.00	404.06	-34	1,039	1,005
Totals:											-34	1,039	1,005	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension Insulator - 15 kV	KU, UTILITY	43.98	0.00	332.7	332.7	11.00	4.75	11.50	13	105	118
Spool	Spool Insulator - 25 kV	KU, UTILITY	36.30	0.00	332.7	242.7	2.00	3.00	3.19	1	15	16
Bolt	Single Bolt	Unknown, COMMUNICATION	29.22	0.00	339.3	339.3	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	28.65	0.00	332.7	332.7	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	28.04	0.00	332.7	242.7	5.00	3.00	0.00	3	0	3
Totals:										23	121	143

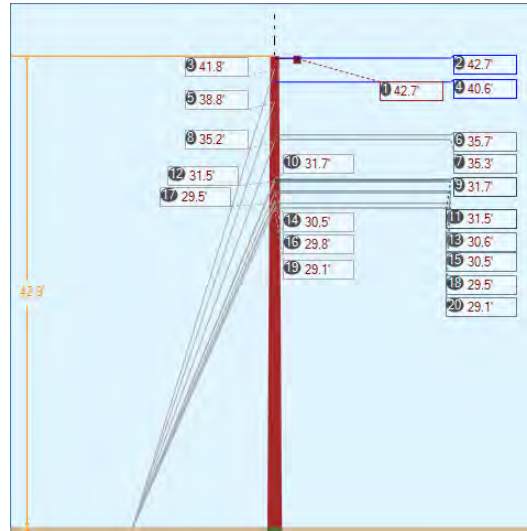
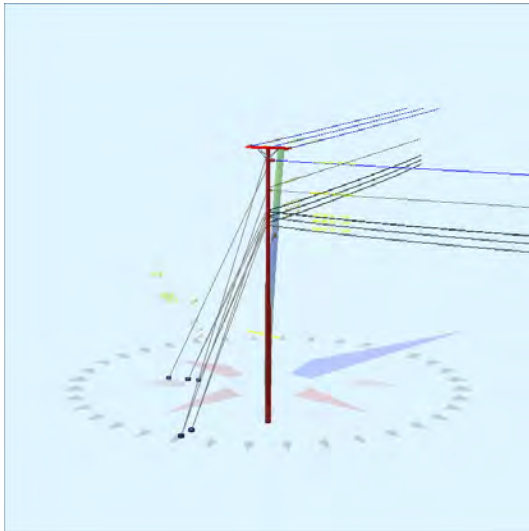
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	40.04	0.00	22.72	0.375	75.00	129.7	60.2	0.273	44.36	0.71
EHS 1/4	Down	Unknown, COMMUNICATION	29.22	0.00	19.91	0.25	75.00	130.8	55.5	0.121	33.63	0.65
EHS 1/4	Down	Unknown, COMMUNICATION	28.04	0.00	19.91	0.25	75.00	130.8	54.4	0.121	32.65	0.62
EHS 1/4	Down	Unknown, COMMUNICATION	28.65	0.00	13.94	0.25	75.00	64.0	63.8	0.121	30.19	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,931	2,665	2,530	2,196	1,257	-110	-3,919
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,586	1,442	1,358	1,120	769	-81	-2,143
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,583	1,440	1,349	1,097	785	-83	-2,110
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	107
Totals:										4,413	2,811	-274	-8,065

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.72	129.7	20,000	1.00	20,000	2,665	2,530	13.3
Single Helix Anchor		18.00	19.91	130.8	20,000	1.00	20,000	2,881	2,707	14.4
Single Helix Anchor		18.00	13.94	64.0	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.00	34.25	12.13	18.02	7.96	13.45	1.60e+6	60.00	57.00	44.57	206,433	2046.25	17.54

Pole Num:	75W - 63255-94823	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.06	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.59	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.962986 Deg	Longitude:	-84.492013 Deg	Elevation:	795.150253020003		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.5	35.3
Groundline	14.2	0.0
Vertical	44.6	34.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,821	320.7
Groundline	17,054	43.0
GL Allowable	129,071	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	32.6	160.0		73.5	320.0	73.6	330.0
? EHS 3/8 (Down)			41.8	79.5	320.0	87.5	330.0
? EHS 3/8 (Down)			35.2	53.2	320.0	58.6	330.0
? Single Helix Anchor	18.8	239.0		43.6	320.0	46.3	70.0
? EHS 3/8 (Down)			38.8	62.9	320.0	73.5	70.0
? Single Helix Anchor	29.1	160.0		27.3	320.0	27.4	330.0
? EHS 1/4 (Down)			31.7	47.1	320.0	51.9	330.0
? EHS 1/4 (Down)			29.5	44.2	320.0	48.7	330.0
? Single Helix Anchor	15.1	239.0		38.3	320.0	40.4	70.0
? EHS 1/4 (Down)			31.5	63.5	320.0	73.7	70.0
? EHS 1/4 (Down)			30.5	64.5	320.0	74.8	70.0
? Single Helix Anchor	13.0	239.0		35.9	320.0	37.9	70.0
? EHS 1/4 (Down)			29.8	59.6	320.0	69.2	70.0
? EHS 1/4 (Down)			29.1	60.3	320.0	70.0	70.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	9,555	603.7	111,316	652.7	86.2	19,839	229	2	19,840	291.8
Comms	8,462	534.6	75,642	443.5	58.6	13,481	893	6	13,487	198.3
GuyBraces	-16,494	-1042.1	-170,467	-999.6	-132.1	-30,380	59,407	432	-29,949	-440.4
Pole	32	2.0	203	1.2	0.2	36	3,061	22	58	0.9
Crossarms	26	1.6	327	1.9	0.3	58	190	1	60	0.9
Insulators	1	0.1	34	0.2	0.0	6	103	1	7	0.1
Pole Load	1,583	100.0	17,054	100.0	13.2	3,039	63,882	464	3,503	51.5
Pole Reserve Capacity			112,017		86.8	3,761			3,297	48.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	640	40.4	8,845	51.9	6.9	1,576	33,383	243	1,819	26.7
Unknown, COMMUNICATION	884	55.9	7,679	45.0	6.0	1,369	27,248	198	1,567	23.0
Pole	32	2.0	203	1.2	0.2	36	3,061	22	58	0.9
<Undefined>	26	1.6	327	1.9	0.3	58	190	1	60	0.9
Totals:	1,583	100.0	17,054	100.0	13.2	3,039	63,882	464	3,503	51.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	42.74	18.49	0.3980	0.13	0.145	95.0	337.5	95.0	2,128	49,021	4	-291	48,734
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	42.74	48.65	0.3980	0.13	0.145	95.0	337.5	95.0	2,128	49,021	10	-291	48,740
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	42.74	48.65	0.3980	0.13	0.145	95.0	337.5	95.0	2,128	49,021	-7	-291	48,722
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.57	15.62	0.3980	0.44	0.145	157.8	69.3	157.8	2,128	100,627	16	701	101,344
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.75	6.92	0.3980	0.13	0.145	95.0	337.5	95.0	2,128	40,999	7	-244	40,763
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.33	6.95	0.3980	0.44	0.145	157.8	69.3	157.8	2,128	87,616	27	610	88,253
										Totals:	376,303	58	195	376,556	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	31.69	7.17	1.3300	1.23	0.337	95.0	337.5	95.0	925	15,798	19	-440	15,377
CATV	CATV 1.0	Unknown, COMMUNICATION	31.51	7.18	1.3300	2.28	0.337	157.8	69.3	157.8	925	33,971	67	1,110	35,147
Telco	TELE 1.5	Unknown, COMMUNICATION	30.62	7.24	1.5000	1.43	0.900	95.0	337.5	95.0	2,000	33,003	33	-465	32,571
Telco	TELE 1.5	Unknown, COMMUNICATION	30.47	7.25	1.5000	2.69	0.900	157.8	69.3	157.9	2,000	71,029	117	1,173	72,318

Telco	TELE 1.5	Unknown, COMMUNICATION	29.53	7.30	1.5000	1.43	0.900	95.0	337.5	95.0	2,000	31,833	33	-448	31,418
Telco	TELE 1.5	Unknown, COMMUNICATION	29.09	7.33	1.5000	2.69	0.900	157.8	69.3	157.9	2,000	67,810	119	1,120	69,048
Totals:												253,443	386	2,049	255,879

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		42.74	5.74	337.5	337.5	50.00	4.50	3.50	96.00	0	1,106	1,106	
Totals:											0	1,106	1,106

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	42.74	0.00	337.5	0.0	3.00	3.80	12.75	4	12	16	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	42.74	45.00	60.2	0.0	3.00	3.80	12.75	23	12	35	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	42.74	-45.00	254.7	0.0	3.00	3.80	12.75	-16	12	-4	
Suspension	Suspension Insulator - 15 kV KU, UTILITY	40.57	0.00	69.3	69.3	11.00	4.75	11.50	24	13	38	
Spool	Spool Insulator - 25 kV KU, UTILITY	35.75	0.00	337.5	337.5	2.00	3.00	3.19	1	2	3	
Spool	Spool Insulator - 25 kV KU, UTILITY	35.33	0.00	69.3	69.3	2.00	3.00	3.19	2	2	4	
Bolt	Single Bolt Unknown, COMMUNICATION	31.69	0.00	337.5	427.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	31.51	0.00	69.3	159.3	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt Unknown, COMMUNICATION	30.62	0.00	337.5	427.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	30.47	0.00	69.3	159.3	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt Unknown, COMMUNICATION	29.53	0.00	337.5	427.5	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt Unknown, COMMUNICATION	29.09	0.00	69.3	69.3	5.00	3.00	0.00	5	0	5	
Totals:										61	54	115

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	41.78	0.00	32.56	0.375	75.00	160.0	51.9	0.273	51.26	3.56
EHS 3/8	Down	KU, UTILITY	35.15	0.00	32.56	0.375	75.00	160.0	47.0	0.273	46.17	2.15
EHS 3/8	Down	KU, UTILITY	38.78	0.00	18.76	0.375	75.00	239.0	63.9	0.273	41.42	2.28
EHS 1/4	Down	Unknown, COMMUNICATION	31.69	0.00	29.14	0.25	75.00	160.0	47.2	0.121	41.29	1.65
EHS 1/4	Down	Unknown, COMMUNICATION	29.53	0.00	29.14	0.25	75.00	160.0	45.2	0.121	39.71	1.49
EHS 1/4	Down	Unknown, COMMUNICATION	31.51	0.00	15.09	0.25	75.00	239.0	64.2	0.121	33.27	1.79
EHS 1/4	Down	Unknown, COMMUNICATION	30.47	0.00	15.09	0.25	75.00	239.0	63.4	0.121	32.33	1.77
EHS 1/4	Down	Unknown, COMMUNICATION	29.77	0.00	13.02	0.25	75.00	239.0	66.1	0.121	30.83	1.56
EHS 1/4	Down	Unknown, COMMUNICATION	29.09	0.00	13.02	0.25	75.00	239.0	65.6	0.121	30.21	1.55

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,125	11,023	11,020	8,671	6,801	-3,087	-127,809
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,119	7,381	7,376	5,398	5,027	-2,281	-79,620
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,187	9,261	8,719	7,833	3,830	-3,682	-139,298
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,107	2,824	2,821	2,071	1,915	-869	-27,369
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,917	2,652	2,648	1,880	1,865	-846	-24,849
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,411	4,010	3,800	3,420	1,656	-1,591	-48,632
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,479	4,072	3,860	3,452	1,727	-1,661	-49,088
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,140	3,764	3,568	3,263	1,444	-1,388	-39,826
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,190	3,809	3,611	3,290	1,489	-1,432	-40,161
Totals:										39,277	25,754	-16,837	-576,651

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	32.56	160.0	25,000	1.00	25,000	18,388	18,379	73.6
Single Helix Anchor			18.00	18.76	239.0	20,000	1.00	20,000	9,261	8,719	46.3
Single Helix Anchor			18.00	29.14	160.0	20,000	1.00	20,000	5,476	5,468	27.4
Single Helix Anchor			18.00	15.09	239.0	20,000	1.00	20,000	8,081	7,660	40.4
Single Helix Anchor			18.00	13.02	239.0	20,000	1.00	20,000	7,573	7,179	37.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	34.86	34.86	11.74	44.13	7.96	13.25	1.60e+6	60.00	57.00	42.94	143,269	1432.33	2.24

37' 7" - 51W - NT

28' 9" - Lowest Power

19' 1" - Proposed Metronet

16' 4" - Highest Tel Cable

16' 4" - Base offset

Base

WIN3566

38' 1" - 52W - 23933-4728

23' 9" - Lowest Power

20' 5" - Proposed Metronet

4' - Base offset

Base

WIN3567

37' 4" - 53W - NT

27' 8" - Lowest Power

23' 8" - Proposed Metronet

23' 8" - Highest Tel Cable

23' 8" - Highest Tel Drop

23' 8" - Base offset

Base

WIN3568

50' - 54W - 23933-4714

39' 8" - Lowest Power

33' - Proposed Metronet

30' 10" - Highest Tel Cable

4' - Base offset

Base

WIN3569

38' 8" - 55W - 23933-4708

26' 9" - Lowest Power

24' 3" - Highest Tel Cable

23' 5" - Proposed Metronet

4' - Base offset

Base

37' 7" - 56W - NT

27' 4" - Lowest Power

26' - Highest Tel Cable

26' - Highest Tel Drop

24' - Proposed Metronet

4' - Base offset

Base

WIN3571

36' 3" - 57W - NT

27' - Lowest Power

23' 9" - Highest Tel Cable

23' - Proposed Metronet

4' - Base offset

Base

WIN3572

38' 7" - 58W - 27774-4726

26' 7" - Lowest Power

22' 4" - Proposed Metronet

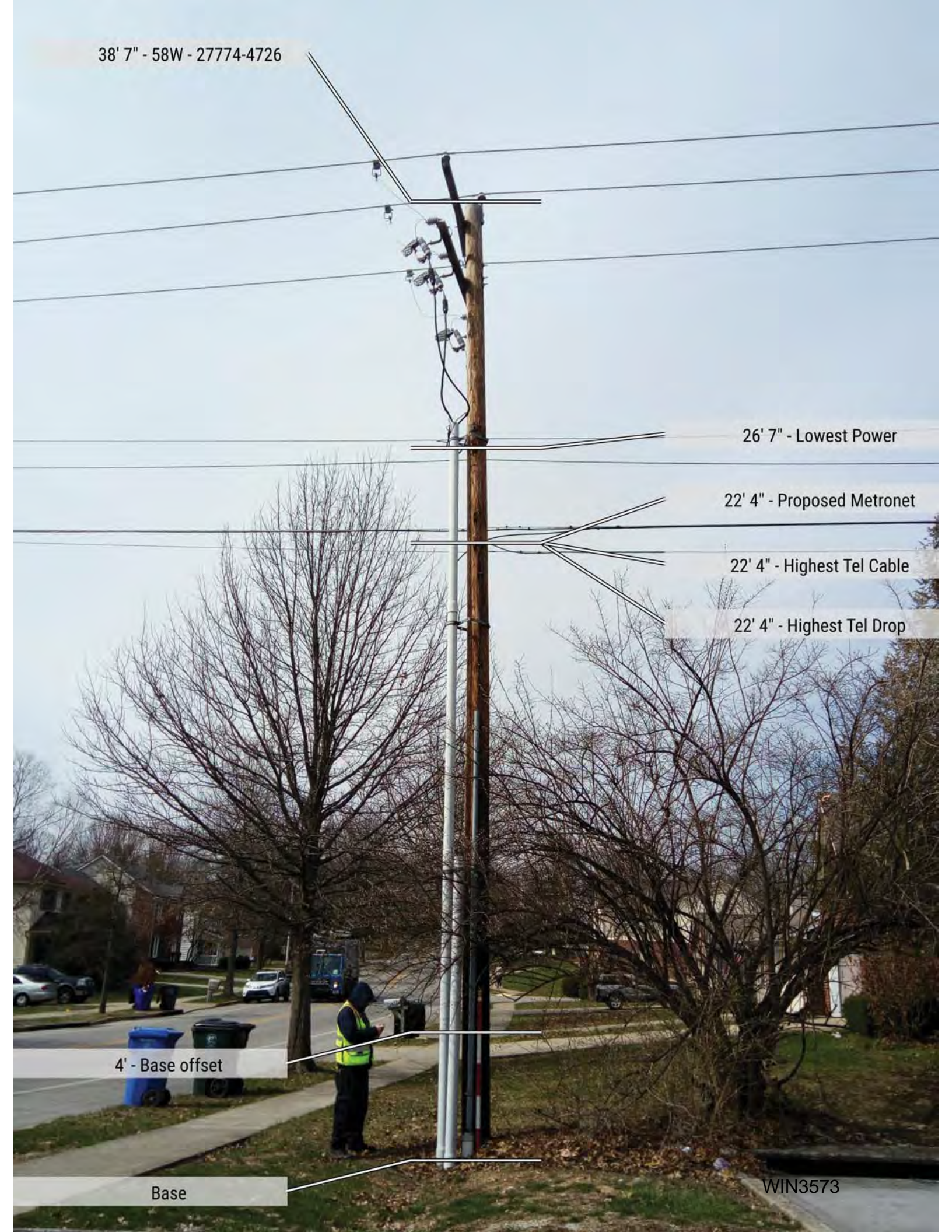
22' 4" - Highest Tel Cable

22' 4" - Highest Tel Drop

4' - Base offset

Base

WIN3573



38' 11" - 59W - 1867982

28' 4" - Lowest Power

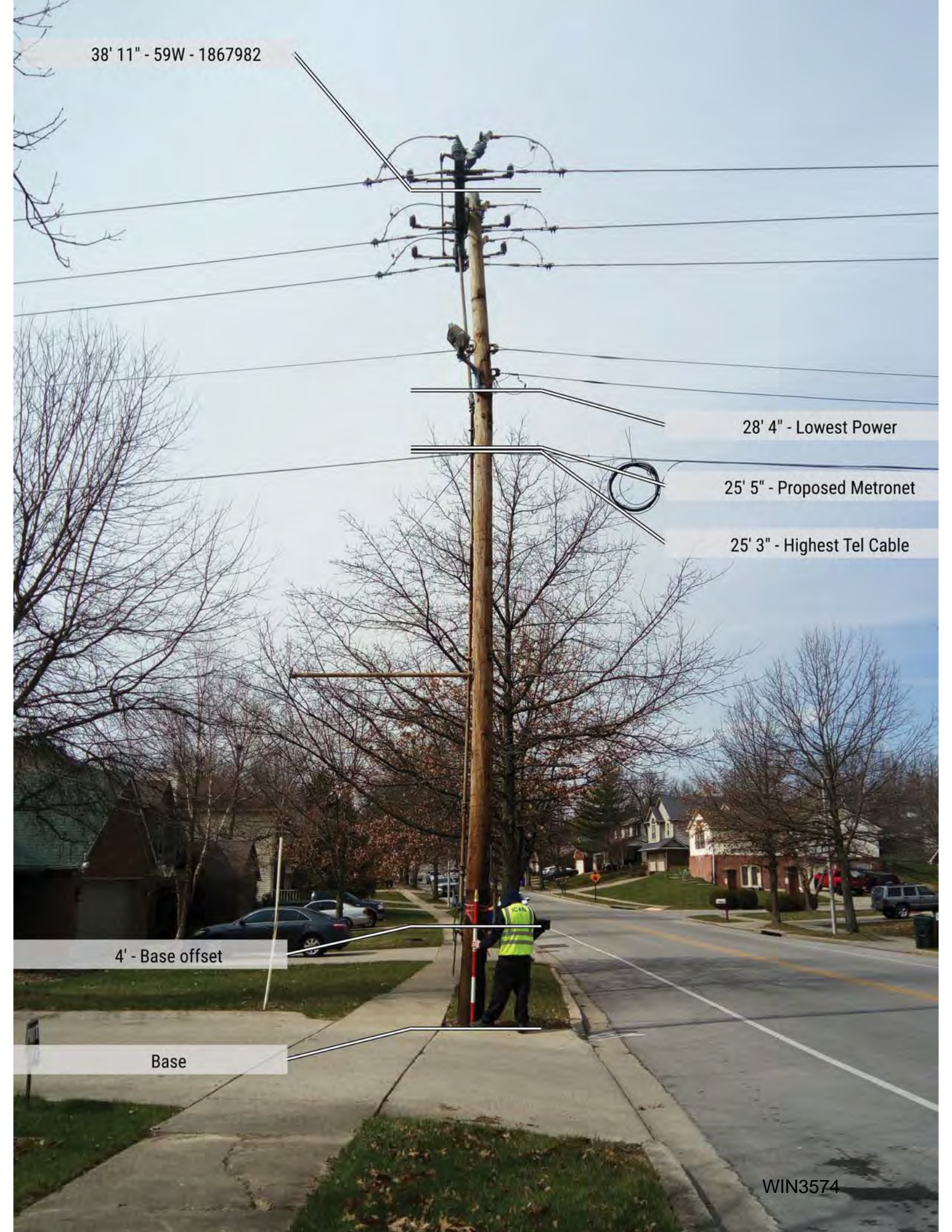
25' 5" - Proposed Metronet

25' 3" - Highest Tel Cable

4' - Base offset

Base

WIN3574



38' 8" - 60W - 27774-1217

28' 4" - Lowest Power

24' 5" - Proposed Metronet

24' 5" - Highest Tel Cable

24' 5" - Highest Tel Drop

4' - Base offset

Base

40' 5" - 61W - 27774-1208

29' 4" - Lowest Power

26' - Proposed Metronet

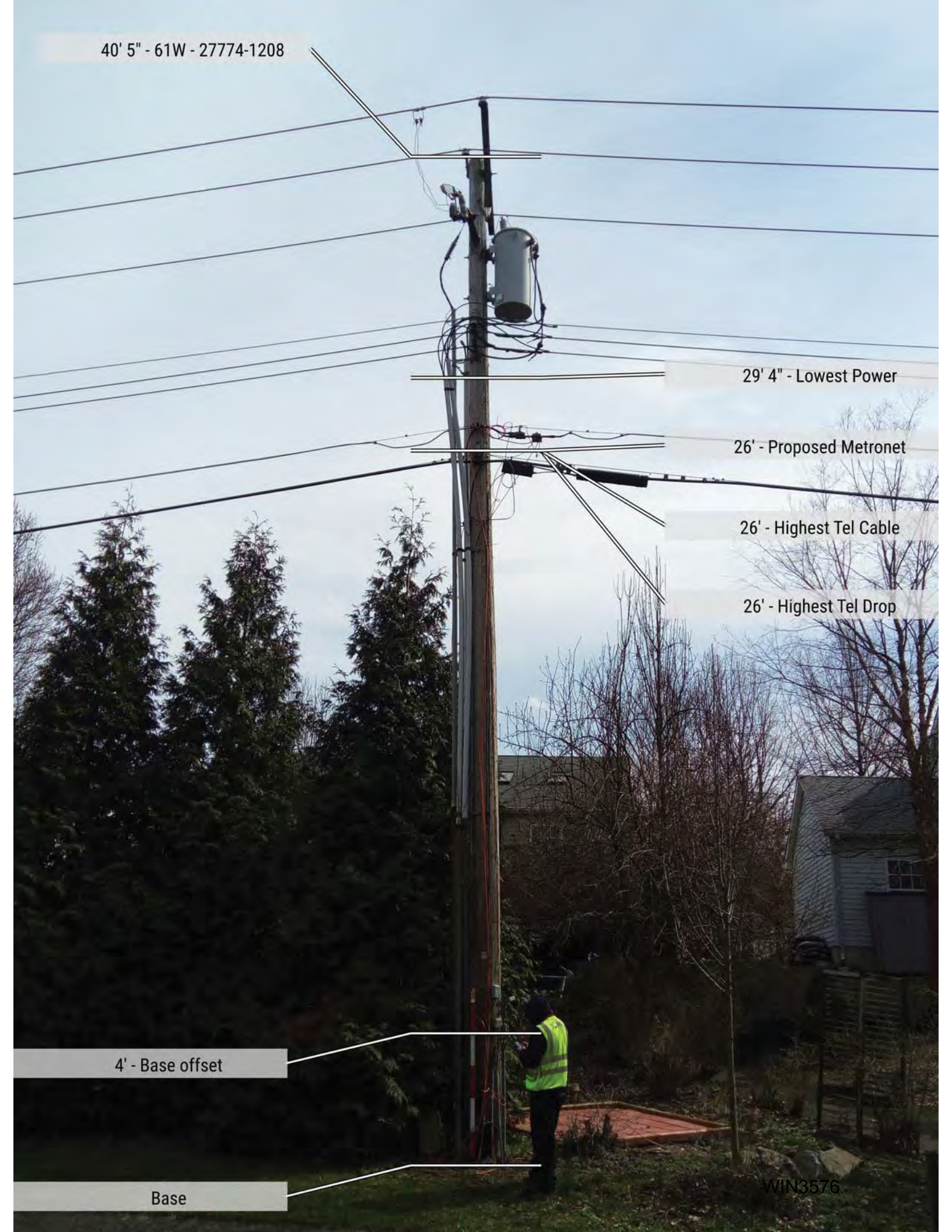
26' - Highest Tel Cable

26' - Highest Tel Drop

4' - Base offset

Base

WIN3576



38' 10" - 62W - 27774-1209

29' 4" - Lowest Power

26' - Proposed Metronet

25' 6" - Proposed Metronet

23' 11" - Highest Tel Cable

4' - Base offset

Base

WIN3577

35' - 63W - 64450-95044

24' - Lowest Power

20' 5" - Proposed Metronet

20' 5" - Highest Tel Cable

4' - Base offset

Base

WIN3578

34' 8" - 64W - 64367-95045

22' 8" - Lowest Power

21' 6" - Highest Tel Cable

19' 4" - Proposed Metronet

4' - Base offset

Base

WIN3579

34' 9" - 65W - 642279-95046

22' 6" - Lowest Power

20' 9" - Highest Tel Drop

20' 8" - Highest Tel Cable

19' 2" - Proposed Metronet

4' - Base offset

Base

34' 1" - 66W - 64139-95047

22' 11" - Lowest Power

20' 10" - Highest Tel Cable

20' 10" - Highest Tel Drop

19' 7" - Proposed Metronet

4' - Base offset

Base

WIN3581

34' 7" - 67W - 64094-95048

23' 4" - Lowest Power

20' 6" - Highest Tel Cable

20' - Proposed Metronet

19' 10" - Highest Tel Drop

4' - Base offset

Base

38' 5" - 68W - 63996-95048

25' 9" - Lowest Power

24' 5" - Highest Tel Cable

24' 5" - Highest Tel Drop

22' 5" - Proposed Metronet

4' - Base offset

Base

34' 3" - 69W - 63907-95026

23' 4" - Lowest Power

20' 4" - Highest Tel Cable

20' - Proposed Metronet

19' 8" - Proposed Metronet

4' - Base offset

Base

34' - 70W - 63860-94937

26' 8" - Lowest Power

23' 3" - Proposed Metronet

22' 3" - Highest Tel Cable

4' - Base offset
Base

WIN3585

34' 6" - 71W - 63792-94849

24' 9" - Lowest Power

21' 5" - Proposed Metronet

21' - Proposed Metronet

21' - Highest Tel Cable

4' - Base offset

Base

WIN3586

33' 9" - 72W - 63595-94895

24' 2" - Lowest Power

20' 8" - Proposed Metronet

19' 8" - Highest Tel Cable

19' - Highest Tel Drop

4' - Base offset

Base

38' 1" - 73W - 63429-94935

30' 7" - Lowest Power

27' 3" - Proposed Metronet

26' 10" - Proposed Metronet

26' 3" - Highest Tel Drop

25' 11" - Highest Tel Cable

4' - Base offset

Base

44' 7" - 74W - 63391-94882

33' 8" - Lowest Power

30' 4" - Proposed Metronet

28' 1" - Highest Tel Cable

28' 1" - Highest Tel Drop

4' - Base offset

Base

WIN3589

42' 11" - 75W - 63255-94823

35' 4" - Lowest Power

32' - Proposed Metronet

31' 8" - Proposed Metronet

30' 9" - Highest Tel Cable

4' - Base offset

Base

WIN3590

From: Hodges, Felicia N
Sent: Monday, July 09, 2018 3:42 PM
To: Lauren Sandefur; Permits
Cc: Sanders, Ashley L; Hays, Sarah K
Subject: Kentucky

Lauren,

Good afternoon, hope you enjoyed your 4th of July. I'm sending this email to let you know that as of today 12 applications has been sent to the engineer for a total of 254 poles. You have 46 poles left for the month of July to submit. Let me know if you have any more question or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



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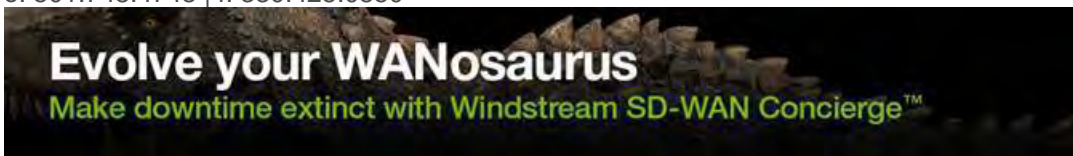
From: Hodges, Felicia N
Sent: Thursday, June 14, 2018 4:12 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU1640 LX13504W
Attachments: Exhibit B - MetroNet JU1640 LX13504W.pdf

Lauren,

This application has been approved. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Hays, Sarah K
Sent: Thursday, June 14, 2018 2:27 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: Exhibit B - MetroNet JU1640 LX13504W

LX135-04W; JUPR-1640

From: Sanders, Ashley L
Sent: Friday, June 08, 2018 4:15 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU1640 LX13504W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:
JU #: 1640
MetroNet package: LX13504W
JobTrac #: 72198972100024
Cost for MRC to bill MetroNet: \$3643.71

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

JUPR1640

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 TOTAL POLES:
 9 - need make ready (lowering 16 attachments & 4 drops)
 16 - no make ready

EXHIBIT B
 Windstream CORPORATION
 APPLICATION FOR POLE LICENSE

PROPOSAL #:
 Submit in Duplicate

LX135-04W
 LXTE
 721989721-00024

Bill Metronet:
 \$3,643.71

1 pole to replace for clearance

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: LAUREN SANDEFUR 812-213-1328
 Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 EMAIL ADDRESS: lauren.sandefur@metronetinc.com
 Authorized Signature & Date: Lauren Sandefur 3-18-12

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & make-ready MUST BE PAID IN FULL UP FRONT.
 NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
 NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Pole Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	26981-2070-02	139W	2051 RICHMOND RD, 140, Lexington, KY	45, 3, WXM	20'0"	N/A	30'6"	(1)Fiber/Strand	23'	No MR	YES
2	NT	140W	133 ST ANN DR, Lexington, KY 40502	35, 4, WXM	17'0"	N/A	23'1"	(1)Fiber/Strand	19'2"	"	
3	NT	141W	141 ST ANN DR, Lexington, KY 40502	40, 3, WXM	17'6"	17'9"	25'1"	(1)Fiber/Strand	20'2"	"	
4	NT	142W	150 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	18'8"	17'10"	24'7"	(1)Fiber/Strand	20'6"	"	
5	NT	143W ✓	154 ST JAMES DR, Lexington, KY 40502	35, 4, WXM	15'10"	16'1"	20'6"	(1)Fiber/Strand	17'2"	Place pole + WS to lower	
6	NT	144W	166 ST JAMES DR, Lexington, KY 40502	40, 3, WXM	18'4"	18'8"	29'1"	(1)Fiber/Strand	20'	No MR	
7	NT	145W ✓	173 ST ANN DR, Lexington, KY 40502	35, 4, WXM	15'5"	15'8"	19'10"	(1)Fiber/Strand	16'6"	WS to lower	
8	NT	146W	182 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	16'6"	16'11"	24'7"	(1)Fiber/Strand	18'11"	No MR	
9	NT	147W	190 ST JAMES DR, Lexington, KY 40502	40, 3, WXM	18'1"	18'3"	24'4"	(1)Fiber/Strand	19'8"	"	
10	NT	148W	194 ST JAMES DR, Lexington, KY 40502	40, 3, WXM	16'2"	16'7"	23'5"	(1)Fiber/Strand	18'6"	"	
11	NT	149W ✓	2136 ST MATHILDA DR, Lexington, KY 40502	40, 3, WXM	21'9"	N/A	23'0"	(1)Fiber/Strand	19'8"	WS to lower	
12	NT	150W ✓	200 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	21'10"	21'5"	25'11"	(1)Fiber/Strand	22'7"	WS to lower	
13	NT	151W ✓	209 ST ANN DR, Lexington, KY 40502	45, 2, WXM	23'8"	N/A	29'2"	(2)Fiber/Strand	25'6"	WS to lower	
14	NT	152W ✓	208 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	20'8"	N/A	25'2"	(1)Fiber/Strand	21'0"	WS to lower	
15	NT	153W	2084 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	18'10"	N/A	25'3"	(1)Fiber/Strand	20'10"	No MR	
16	NT	154W	2076 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'10"	20'11"	27'0"	(1)Fiber/Strand	22'11"	"	
17	NT	155W ✓	2064 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'1"	20'5"	24'4"	(1)Fiber/Strand	21'	WS to lower	
18	NT	156W ✓	2056 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	21'2"	21'5"	26'0"	(1)Fiber/Strand	22'8"	WS to lower	
19	NT	157W ✓	2040 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'6"	20'8"	23'4"	(1)Fiber/Strand	20'	WS to lower	

20	NT	158W	2032 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	18'7"	19'5"	27'5"	(1)Fiber/Strand	20.4"	No MR	YES
21	NT	159W	2024 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	17'0"	17'2"	23'11"	(1)Fiber/Strand	19.7"	u	}
22	NT	160W	2012 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	18'10"	19'0"	25'4"	(1)Fiber/Strand	21.4"	u	
23	NT	161W	244 ST MARGARET DR, Lexington, KY 40	40, 3, WXM	16'11"	17'0"	21'3"	(1)Fiber/Strand	20.2"	u	
24	NT	162W	236 ST MARGARET DR, Lexington, KY 40	40, 3, WXM	18'6"	18'11"	26'2"	(1)Fiber/Strand	21.6"	u	
25	NT	163W	2013 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	19'7"	N/A	26'3"	(1)Fiber/Strand	21.8"	u	
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

[Handwritten Signature] 6/18/18

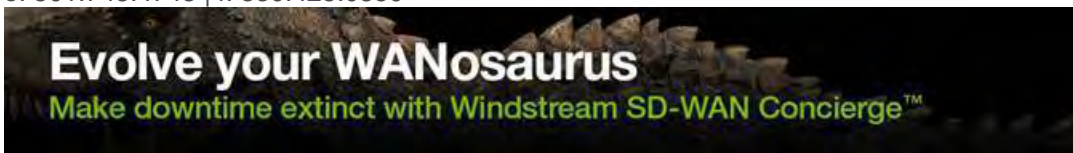
From: Hodges, Felicia N
Sent: Thursday, May 03, 2018 3:16 PM
To: Lauren Sandefur
Subject: MetroNet Kentucky Poles
Attachments: MetroNet_KEntucky.xlsx

Lauren,

Please see the following spreadsheet. Please send me whatever application on the spreadsheet that I don't have.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



Title	Number of Poles	Application Submit Date	Date Sent to Engineer
LX135-01W	25	3/14/2018	3/14/2018
LX132-01W	25	3/14/2018	3/14/2018
LX135-02W	25	3/17/2018	3/17/2018
LX135-03W	25	3/17/2018	3/17/2018
LX135-04W	25	3/17/2018	3/17/2018
LX135-05W	25	3/17/2018	3/17/2018
LX135-06W	3	3/17/2018	3/17/2018
LX-FR01-03W	3	3/17/2018	Sent back to MetroNet
LX-FR02-04W	10	3/17/2018	3/17/2018
LX-FR02-03W	25	3/17/2018	3/17/2018
LX-FR02-01W	25	3/17/2018	3/17/2018
LX-FR02-02W	25	3/17/2018	3/17/2018
LX-FR04-05BiW	12	3/19/2018	3/19/2018
LX167-01W	25	3/19/2018	3/19/2018
LX167-02W	25	3/19/2018	3/19/2018
LX167-03W	25	3/19/2018	3/19/2018
LX167-04W	25	3/19/2018	3/19/2018
LX167-05W	22	3/19/2018	3/19/2018
Total	375		

From: Hodges, Felicia N
Sent: Thursday, May 17, 2018 3:48 PM
To: Lauren Sandefur
Subject: RE: Application

Lauren,

Your files maybe to large or something because I still have not received the applications in my personal mailbox nor the departmental mailbox.

Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, May 17, 2018 2:13 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: Application

Ok, I have submitted both of those to the Windstream email and I CC'd you just in case.
Those two applications are LX049-0W and LX-FR05-09W.
Thank you!

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Thursday, May 17, 2018 2:11 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: Application

Lauren,

I have not received anything so let go ahead and sent it to
Windstream.jointuse@Windstream.com.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



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From: Windstream Jointuse
Sent: Tuesday, July 17, 2018 2:44 PM
To: Hannah Paulson; Lauren Sandefur
Cc: Permits
Subject: RE: Application Carmel 67 Duke / MetroNet Construction Req.

Hannah,

I'm showing it in our system I'm just waiting to know when the construction was done and complete on Metronet's end.

Thank you,

Nicole

From: Hannah Paulson <Hannah.Paulson@metronetinc.com>
Sent: Tuesday, July 17, 2018 1:06 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Permits <Permits@metronetinc.com>
Subject: RE: Application Carmel 67 Duke / MetroNet Construction Req.

Actually, I did not find the acknowledgment, but I found this confirmation that it has been acknowledged. Can you please double check to be sure it shows as acknowledged in SPANS?

Thank you,

Hannah Paulson
Permit Specialist

From: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Sent: Friday, December 15, 2017 3:07 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Permits <Permits@metronetinc.com>
Subject: Application Carmel 67 Duke / MetroNet Construction Req.

Lauren,

Duke make ready construction has been transmitted as complete. This application now requires confirmation once MetroNet's construction is complete. We need the following information:

Proposal Revision Required: No revision required/ Revision required

MetroNet Construction Date:

Additional, we need to confirm that construction has been completed and attachments made to only the approved poles below:

088-983-CML

060-302-CML

185-834-CML

060-301-CML

057-273-CML

300-680-CML

300-679-CML

Once MetroNet construction has been completed, please advise so we may transmit to Duke.

Thank you,

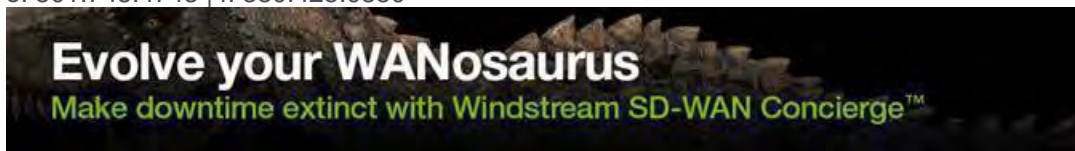
Felicia(Nicole)Hodges

Coordinator - Engineering Support | Windstream

11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212

Felicia.N.Hodges@Windstream.com

o: 501.748.4743 | f: 330.425.0850



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From: Hodges, Felicia N
Sent: Thursday, May 17, 2018 4:03 PM
To: Lauren Sandefur
Subject: RE: Application

I got them now.

Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, May 17, 2018 2:13 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: Application

Ok, I have submitted both of those to the Windstream email and I CC'd you just in case. Those two applications are LX049-0W and LX-FR05-09W. Thank you!

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Thursday, May 17, 2018 2:11 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: Application

Lauren,

I have not received anything so let go ahead and sent it to Windstream.jointuse@Windstream.com.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
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From: Hodges, Felicia N
Sent: Tuesday, July 17, 2018 3:16 PM
To: Lauren Sandefur
Subject: RE: Kentucky

Lauren,

You're correct you have 8 more you can apply for. I'm in the process of sending over the application that you sent in yesterday.

Thank you,
Nicole

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, July 17, 2018 1:39 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: RE: Kentucky

Nicole,
I'm just confirming that I can apply 8 more poles for the month of July?
Thanks,

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Monday, July 9, 2018 2:42 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>; Permits <Permits@metronetinc.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: Kentucky

Lauren,

Good afternoon, hope you enjoyed your 4th of July. I'm sending this email to let you know that as of today 12 applications has been sent to the engineer for a total of 254 poles. You have 46 poles left for the month of July to submit. Let me know if you have any more question or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850

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From: Hodges, Felicia N
Sent: Thursday, June 21, 2018 3:24 PM
To: Lauren Sandefur
Subject: RE: LX MetroNet Applications

I have some approvals for you. I will get them over today. I have not looked to see if any of these are them yet.

Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, June 20, 2018 2:42 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX MetroNet Applications

Hey Nicole,
I'm just following up on these applications that are past the 60 day submittal date.

LX167-01W – 3/19/18 – 93 days
LX167-02W – 3/19/18 – 93 days
LX165-01W - 4/19/18 – 62 days
LX276-01W – 4/18/18 – 62 days
LX-FR07-01W – 4/19/18 – 62 days

Thanks!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: Hodges, Felicia N
Sent: Tuesday, May 22, 2018 11:34 AM
To: Lauren Sandefur
Subject: RE: LX049-03W - rejecting for maps

No problem the JUPR# will stay the same.

Thank you,
Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, May 22, 2018 10:28 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX049-03W - rejecting for maps

Sorry about that! I have attached the map.
Thank you!

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Tuesday, May 22, 2018 10:24 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: FW: LX049-03W - rejecting for maps

Lauren,

This was rejected please see below and make the proper correction. Once complete please send it back to me and resubmit

Thank you,
Nicole

From: Sanders, Ashley L
Sent: Monday, May 21, 2018 4:41 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: FW: LX049-03W - rejecting for maps

Felicia, rejected this package back- there is no map (they have been naming it the "pole app map") to show the cable route like all of the other packages have had. Need that before I can assign this out to begin field work. Please re-send entire package when that has been provided. Thanks in advance!

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505
ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

From: Hodges, Felicia N
Sent: Thursday, May 17, 2018 4:12 PM
To: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: FW: LX049-03W

Ashley,

Please see the following attachment for MetroNet Kentucky. The Windstream Proposal Number is JUPR3757. Let me know if you have any further question or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Thursday, May 17, 2018 2:54 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX049-03W

Instead of forwarding the email I just started over, lets see if this works.

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



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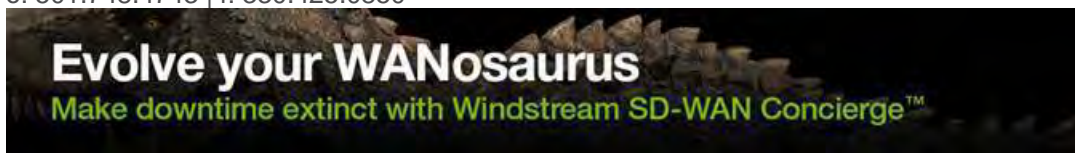
From: Hodges, Felicia N
Sent: Thursday, May 17, 2018 4:12 PM
To: Lauren Sandefur
Subject: RE: LX049-03W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR3757 and submitted to the Windstream Engineer, Ashley Sanders as of 5/17/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, May 17, 2018 2:54 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX049-03W

Instead of forwarding the email I just started over, lets see if this works.

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Tuesday, August 14, 2018 10:58 AM
To: 'Lauren Sandefur'
Cc: Permits
Subject: RE: LX049-04W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6369 and submitted to the Windstream Engineer, Ashley Sanders as of 8/14/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 13, 2018 3:52 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX049-04W Pole Application

Good Afternoon,
Please see attached for proposal titled LX049-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:59 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX101-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6227 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 5:50 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX101-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX101-01W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Tuesday, August 14, 2018 10:29 AM
To: 'Lauren Sandefur'
Cc: Permits
Subject: RE: LX103-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6368 and submitted to the Windstream Engineer, Ashley Sanders as of 8/14/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, August 9, 2018 3:47 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX103-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX103-02W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: Windstream Jointuse
Sent: Thursday, August 09, 2018 2:16 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX105-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6238 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, August 7, 2018 9:05 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX105-01W Pole Application

Good Morning,
Please see attached for proposal titled LX105-01W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



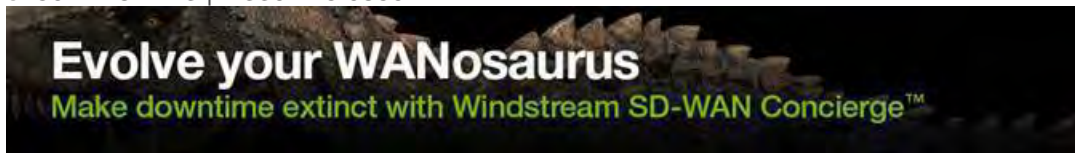
From: Windstream Jointuse
Sent: Thursday, August 09, 2018 2:21 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX105-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6239 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, August 7, 2018 9:20 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX105-02W Pole Application

Good Morning,
Please see attached for proposal titled LX105-02W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 2:27 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX105-03W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6240 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, August 7, 2018 9:58 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX105-03W Pole Application

Good Morning,
Please see attached for proposal titled LX105-03W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 2:31 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX105-04W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6241 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, August 7, 2018 10:14 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX105-04W Pole Application

Good Morning,
Please see attached for proposal titled LX105-04W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 11:38 AM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX132-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6216 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 11:24 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX132-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX132-02w. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 1:25 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX134-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6236 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, August 7, 2018 7:36 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX134-02W Pole Application

Good Morning,
Please see attached for proposal titled LX134-02W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hodges, Felicia N
Sent: Tuesday, March 20, 2018 2:15 PM
To: Lauren Sandefur
Subject: RE: LX135-01W

Is this one of the ones that was rejected at first. Can you send me what was sent please

Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 20, 2018 1:04 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX135-01W

Good Afternoon Nicole,
I was just wondering on the status of LX135-01W since it was submitted 3/14/2018.
Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

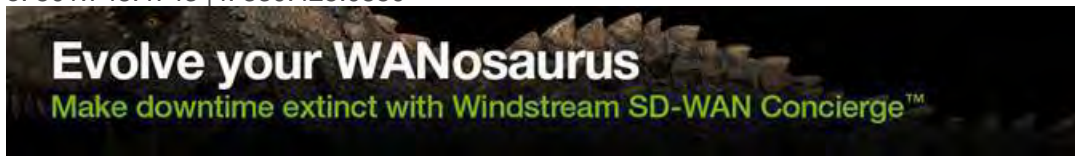
From: Hodges, Felicia N
Sent: Wednesday, March 21, 2018 1:41 PM
To: Lauren Sandefur
Subject: RE: LX135-01W

Lauren,

I have not able to get an answer about the turnaround time yet. I just wanted to keep you in the loop. I thought Ashley was just out of the office but she is at a conference until tomorrow. So I should be able to get you an answer by Friday. Also see below I do not remember getting the one highlighted in yellow will you please send that to me immediately so I can get it sent over.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 20, 2018 1:57 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX135-01W

Everything else looks good!

Title	Number of Poles	Application Submit Date
LX135-01W	25	3/14/2018
LX132-01W	25	3/14/2018
LX135-02W	25	3/17/2018
LX135-03W	25	3/17/2018
LX135-04W	25	3/17/2018
LX135-05W	25	3/17/2018
LX135-06W	3	3/17/2018
LX-FR01-03W	3	3/17/2018
LX-FR02-04W	10	3/17/2018
LX-FR02-03W	25	3/17/2018
LX-FR02-01W	25	3/17/2018

LX-FR02-02W	25	3/17/2018
LX-FR04-05BiW	12	3/19/2018
LX167-01W	25	3/19/2018
LX167-02W	25	3/19/2018
LX167-03W	25	3/19/2018
LX167-04W	25	3/19/2018
LX167-05W	22	3/19/2018

Here is my submittal list on my end.
If you need anything else let me know!

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [<mailto:Felicia.N.Hodges@windstream.com>]
Sent: Tuesday, March 20, 2018 1:51 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

Lauren,

I'm going to resubmit this one again the engineer that is handling all of these is out of the office in a conference. However I don't see it in my list of application that I have submitted to her so far. So I'm going to submit again. No was there only 2 application that were submitted back then I have LX132-01W and this one that you just sent. All others I have replied back to you with a JUPR #.

I'm going to list what I have so far you let me know if I'm correct if I'm missing any just send to my personal email and I will get them out . This list is going to be anything that you have submitted up and until Monday 3/19/18. I'm just now working on the Monday submissions that you have sent over so I have those.

LX132-01W
LX135-02W
LX135-03W
LX134-04W
LX134-05W
LX135-06W
LX-FR02-01W
LX-Fr02-02W
LX-FR02-03W
LX-FR02-04W
LX135-01W I'm sending this over again

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, March 20, 2018 1:17 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: LX135-01W

I resubmitted this with the correct information I will send it to you!

Thanks

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [<mailto:Felicia.N.Hodges@windstream.com>]
Sent: Tuesday, March 20, 2018 1:15 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

Is this one of the ones that was rejected at first. Can you send me what was sent please

Nicole

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, March 20, 2018 1:04 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX135-01W

Good Afternoon Nicole,
I was just wondering on the status of LX135-01W since it was submitted 3/14/2018.
Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

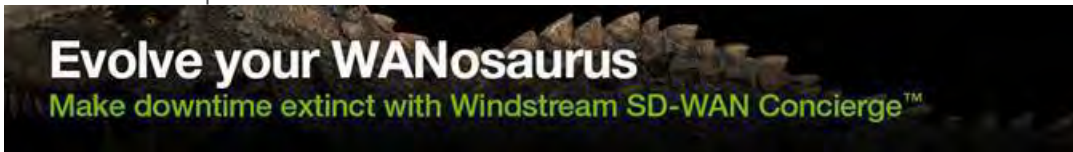
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From: Hodges, Felicia N
Sent: Tuesday, March 20, 2018 3:38 PM
To: Lauren Sandefur
Subject: RE: LX135-01W

I really don't know what the turn around time is for these application. Ashley the lady that we are sending them to is the supervisor and she is giving these jobs out to the engineers under her. She wanted them all to come to her so that she could keep up with everything that was going on. This is what I will do let me talk to Ashley tomorrow I should be able to call her and see if she has a turnaround plan and we can go from there.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 20, 2018 2:01 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX135-01W

I know that she is out of the office but do you guys have a set turn around time for these applications?

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [mailto:Felicia.N.Hodges@windstream.com]
Sent: Tuesday, March 20, 2018 2:00 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

Ok Great just want to make sure I'm on top of getting out in a timely fashion so the engineer can get to work.

Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 20, 2018 1:57 PM

To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>

Subject: FW: LX135-01W

Everything else looks good!

Title	Number of Poles	Application Submit Date
LX135-01W	25	3/14/2018
LX132-01W	25	3/14/2018
LX135-02W	25	3/17/2018
LX135-03W	25	3/17/2018
LX135-04W	25	3/17/2018
LX135-05W	25	3/17/2018
LX135-06W	3	3/17/2018
LX-FR01-03W	3	3/17/2018
LX-FR02-04W	10	3/17/2018
LX-FR02-03W	25	3/17/2018
LX-FR02-01W	25	3/17/2018
LX-FR02-02W	25	3/17/2018
LX-FR04-05BiW	12	3/19/2018
LX167-01W	25	3/19/2018
LX167-02W	25	3/19/2018
LX167-03W	25	3/19/2018
LX167-04W	25	3/19/2018
LX167-05W	22	3/19/2018

Here is my submittal list on my end.
If you need anything else let me know!

Lauren Sandefur

Permit Specialist

From: Hodges, Felicia N [<mailto:Felicia.N.Hodges@windstream.com>]

Sent: Tuesday, March 20, 2018 1:51 PM

To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>

Subject: RE: LX135-01W

Lauren,

I'm going to resubmit this one again the engineer that is handling all of these is out of the office in a conference. However I don't see it in my list of application that I have submitted to her so far. So I'm going to submit again. No was there only 2 application that were submitted back then I have LX132-01W and this one that you just sent. All others I have replied back to you with a JUPR #.

I'm going to list what I have so far you let me know if I'm correct if I'm missing any just send to my personal email and I will get them out . This list is going to be anything that you have submitted up and until Monday 3/19/18. I'm just now working on the Monday submissions that you have sent over so I have those.

LX132-01W
LX135-02W
LX135-03W
LX134-04W
LX134-05W
LX135-06W
LX-FR02-01W
LX-Fr02-02W
LX-FR02-03W
LX-FR02-04W
LX135-01W I'm sending this over again

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, March 20, 2018 1:17 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: LX135-01W

I resubmitted this with the correct information I will send it to you!
Thanks

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [<mailto:Felicia.N.Hodges@windstream.com>]
Sent: Tuesday, March 20, 2018 1:15 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

Is this one of the ones that was rejected at first. Can you send me what was sent please

Nicole

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, March 20, 2018 1:04 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX135-01W

Good Afternoon Nicole,
I was just wondering on the status of LX135-01W since it was submitted 3/14/2018.
Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

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From: Hodges, Felicia N
Sent: Tuesday, March 20, 2018 2:51 PM
To: Lauren Sandefur
Subject: RE: LX135-01W

Lauren,

I'm going to resubmit this one again the engineer that is handling all of these is out of the office in a conference. However I don't see it in my list of application that I have submitted to her so far. So I'm going to submit again. No was there only 2 application that were submitted back then I have LX132-01W and this one that you just sent. All others I have replied back to you with a JUPR #.

I'm going to list what I have so far you let me know if I'm correct if I'm missing any just send to my personal email and I will get them out . This list is going to be anything that you have submitted up and until Monday 3/19/18. I'm just now working on the Monday submissions that you have sent over so I have those.

LX132-01W
LX135-02W
LX135-03W
LX134-04W
LX134-05W
LX135-06W
LX-FR02-01W
LX-Fr02-02W
LX-FR02-03W
LX-FR02-04W
LX135-01W I'm sending this over again

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 20, 2018 1:17 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: LX135-01W

I resubmitted this with the correct information I will send it to you!
Thanks

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [mailto:Felicia.N.Hodges@windstream.com]
Sent: Tuesday, March 20, 2018 1:15 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

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Nicole

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Tuesday, March 20, 2018 1:04 PM

To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>

Subject: LX135-01W

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I was just wondering on the status of LX135-01W since it was submitted 3/14/2018.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



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From: Hodges, Felicia N
Sent: Wednesday, June 06, 2018 12:39 PM
To: Lauren Sandefur
Subject: RE: LX135-01W(Resubmitted)//Approved
Attachments: Exhibit B - MetroNet JU1688 LX13501W.pdf

Lauren,

This application has been approved. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



Evolve your WANosaurus
Make downtime extinct with Windstream SD-WAN Concierge™

From: Hodges, Felicia N
Sent: Tuesday, March 20, 2018 2:46 PM
To: 'Lauren Sandefur' <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W(Resubmitted)

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1688 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



Evolve your WANosaurus
Make downtime extinct with Windstream SD-WAN Concierge™

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, March 20, 2018 1:22 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX135-01W

Here you go!

Lauren Sandefur
Permit Specialist

From: Lauren Sandefur
Sent: Wednesday, March 14, 2018 8:36 AM
To: 'Windstream Jointuse' <Windstream.Jointuse@windstream.com>
Cc: 'Hays, Sarah K' <Sarah.K.Hays@windstream.com>
Subject: FW: LX135-01W

Good Morning,

Please see attached for proposal titled LX135-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX135-01W

Submit in Duplicate

LXTE 721989721-00023
BILL METRONET: \$5,451.93

Name of Firm Applying: CMN-RUS, INC Contact Name: Lauren Sandefur Phone #: 812.213.13238
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: Lauren Sandefur

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmnts on pole	# & type of Attachmnts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1 27310NT 1251	16W MR	2029 Coburn Blvd, Lexington 40502	45, 3, WXM	19'3"	19'7"	24'6"		(1)Fiber/Strand	21.2"	OK TO ATTACH	YES
2 27310-125	17W	2041 Coburn Blvd, Lexington 40502	40, 3, WXM	18'4"	N/A	22'4"		(1)Fiber/Strand	20.2"	u	u
3 27310-125-02	18W	2053 Coburn Blvd, Lexington 40502	45, 3, WXM	17'6"	19'5"	28'4"		(1)Fiber/Strand	21.6"	u	u
4 27310-126-01	19W	2101 Coburn Blvd, Lexington 40502	45, 1, WXM	19'0"	19'0"	28'11"		(1)Fiber/Strand	22.7"	u	u
5 27310-126	20W	2115 Coburn Blvd, Lexington 40502	45, 3, WXM	16'10"	N/A	24'3"		(1)Fiber/Strand	19.10"	u	u
6 27310-126-02	21W	2125 Coburn Blvd, Lexington 40502	40, 3, WXM	19'1"	19'1"	24'3"		(1)Fiber/Strand	20.11"	u	u
7 27220-125-01	22W	2129 Coburn Blvd, Lexington 40502	40, 3, WXM	18'10"	18'10"	24'2"		(1)Fiber/Strand	20.10"	u	u
8 27220-125	X 23W	2131 Coburn Blvd, Lexington 40502	40, 3, WXM	15'8"	N/A	23'6"		(1)Fiber/Strand	19.10"	u	u
9 27220-127-02	X 24W	2145 Coburn Blvd, Lexington 40502	40, 2, WXM	20'6"	N/A	25'10"		(1)Fiber/Strand	22.6"	u	u
10 27220-126-01	25W	2201 Coburn Blvd, Lexington 40502	40, 2, WXM	19'2"	N/A	24'9"		(1)Fiber/Strand	21.4"	u	u
11 27220 ?	X 26W	2209 Coburn Blvd, Lexington 40502	40, 2, WXM	17'7"	N/A	24'9"		(1)Fiber/Strand	21.4"	u	u
12 27220-125-02	P 27W MR	2215 Coburn Blvd, Lexington 40502	40, 3, WXM	19'9"	N/A	24'4"		(1)Fiber/Strand	20.6"	u	u
13 27290-126-01	28W	126 St Phillip Dr, Lexington 40502	40, 3, WXM	19'3"	19'3"	23'9"		(1)Fiber/Strand	20.3"	u	u
14 27290-126	X 33W	126 St Phillip Dr, Lexington 40502	45, 3, WXM	21'4"	21'4"	26'8"		(1)Fiber/Strand	23.4"	u	u
15 27290NT 134	34W MR	134 St Phillip Dr, Lexington 40502	40, 3, WXM	17'0"	N/A	21'4"		(1)Fiber/Strand	17.6"	u	u
16 NT	35W	142 St Phillip Dr, Lexington 40502	40, 3, WXM	16'9"	N/A	24'9"		(1)Fiber/Strand	19.8"	u	u
17 NT	36W	150 St Phillip Dr, Lexington 40502	45, 3, WXM	19'2"	N/A	27'5"		(1)Fiber/Strand	21.5"	u	u
18 NT	37W	158 St Phillip Dr, Lexington 40502	45, 3, WXM	20'8"	N/A	27'0"		(1)Fiber/Strand	22.5"	u	u
19 L27290-P166-W5	38W	166 St Phillip Dr, Lexington 40502	45, 3, WXM	16'5"	N/A	26'0"		(2)Fiber/Strand	18.8"	u	u
20 27220-228	57W	228 St Ann Dr, Lexington 40502	45, 3, WXM	19'1"	19'9"	27'1"		(1)Fiber/Strand	22.7"	u	u

LE # NOT PAINT

21	27220 NT 240	58W <i>MR</i>	240 St Ann Dr, Lexington 40502	40, 3, WXM	18'4"	N/A	27'5"		(1)Fiber/Strand	19'1"	OK TO ATTACH	YES
22	NT	59W	248 St Ann Dr, Lexington 40502	45, 3, WXM	22'7"	N/A	31'7"		(1)Fiber/Strand	24'4"	u	u
23	NT	60W	256 St Ann Dr, Lexington 40502	40, 3, WXM	18'10"	N/A	27'6"		(1)Fiber/Strand	21'10"	u	u
24	27220-260	61W	260 St Ann Dr, Lexington 40502	40, 2, WXM	20'7"	N/A	25'8"		(1)Fiber/Strand	22'4"	u	u
25	NT	62W	266 St Ann Dr, Lexington 40502	40, 3, WXM	17'6"	16'3"	25'3"		(1)Fiber/Strand	19'9"	u	u
ESTIMATED TOTAL COSTS												u

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

[Handwritten Signature] 5/31/18

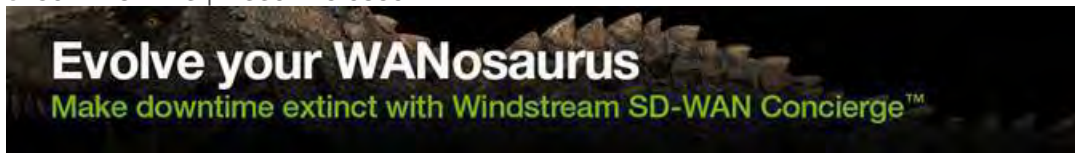
From: Hodges, Felicia N
Sent: Tuesday, March 20, 2018 3:46 PM
To: Lauren Sandefur
Subject: RE: LX135-01W(Resubmitted)

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1688 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 20, 2018 1:22 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX135-01W

[Here you go!](#)

Lauren Sandefur
Permit Specialist

From: Lauren Sandefur
Sent: Wednesday, March 14, 2018 8:36 AM
To: 'Windstream Jointuse' <Windstream.Jointuse@windstream.com>
Cc: 'Hays, Sarah K' <Sarah.K.Hays@windstream.com>
Subject: FW: LX135-01W

Good Morning,
Please see attached for proposal titled LX135-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



From: Hodges, Felicia N
Sent: Tuesday, March 20, 2018 3:00 PM
To: Lauren Sandefur
Subject: RE: LX135-01W

Ok Great just want to make sure I'm on top of getting out in a timely fashion so the engineer can get to work.

Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 20, 2018 1:57 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX135-01W

Everything else looks good!

Title	Number of Poles	Application Submit Date
LX135-01W	25	3/14/2018
LX132-01W	25	3/14/2018
LX135-02W	25	3/17/2018
LX135-03W	25	3/17/2018
LX135-04W	25	3/17/2018
LX135-05W	25	3/17/2018
LX135-06W	3	3/17/2018
LX-FR01-03W	3	3/17/2018
LX-FR02-04W	10	3/17/2018
LX-FR02-03W	25	3/17/2018
LX-FR02-01W	25	3/17/2018
LX-FR02-02W	25	3/17/2018
LX-FR04-05BiW	12	3/19/2018
LX167-01W	25	3/19/2018
LX167-02W	25	3/19/2018
LX167-03W	25	3/19/2018
LX167-04W	25	3/19/2018
LX167-05W	22	3/19/2018

Here is my submittal list on my end.
If you need anything else let me know!

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [<mailto:Felicia.N.Hodges@windstream.com>]
Sent: Tuesday, March 20, 2018 1:51 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

Lauren,

I'm going to resubmit this one again the engineer that is handling all of these is out of the office in a conference. However I don't see it in my list of application that I have submitted to her so far. So I'm going to submit again. No was there only 2 application that were submitted back then I have LX132-01W and this one that you just sent. All others I have replied back to you with a JUPR #.

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LX-FR02-03W
LX-FR02-04W
LX135-01W I'm sending this over again

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, March 20, 2018 1:17 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: LX135-01W

I resubmitted this with the correct information I will send it to you!
Thanks

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [<mailto:Felicia.N.Hodges@windstream.com>]
Sent: Tuesday, March 20, 2018 1:15 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

Is this one of the ones that was rejected at first. Can you send me what was sent please

Nicole

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, March 20, 2018 1:04 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: LX135-01W

Good Afternoon Nicole,
I was just wondering on the status of LX135-01W since it was submitted 3/14/2018.
Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



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From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:35 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX136-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6224 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 5:12 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX136-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX136-01W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:45 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX136-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6226 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 5:13 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX136-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX136-02W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



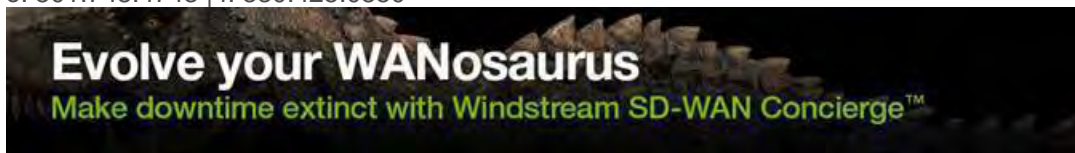
From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:52 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX136-02W Pole Application

Lauren,

Just want to assure you that I had the revision sent to the engineer on this one.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 5:23 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: RE: LX136-02W Pole Application

Please use this email and map for this application.
Thanks!

Lauren Sandefur
Permit Specialist

From: Lauren Sandefur
Sent: Monday, August 6, 2018 5:13 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX136-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX136-02W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 11:32 AM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX158-01w Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6215 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 10:38 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX158-01w Pole Application

Good Afternoon,
Please see attached for proposal titled LX158-01w. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Wednesday, July 18, 2018 5:34 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX159-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5535 and submitted to the Windstream Engineer, Ashley Sanders as of 7/18/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, July 17, 2018 4:15 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX159-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX159-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Wednesday, July 18, 2018 5:25 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX164-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5634 and submitted to the Windstream Engineer, Ashley Sanders as of 7/18/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, July 17, 2018 2:51 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX164-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX164-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:12 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX166-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6220 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 3:17 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX166-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX166-02w. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:18 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX166-03w Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6221 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 3:17 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX166-03w Pole Application

Good Afternoon,
Please see attached for proposal titled LX166-03w. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

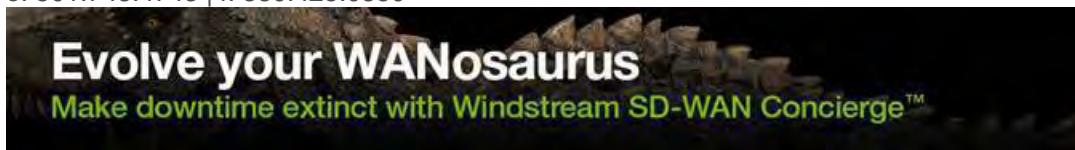


From: Hodges, Felicia N
Sent: Monday, March 26, 2018 1:36 PM
To: Lauren Sandefur
Subject: RE: LX167-05W

I can provide a list of the ones kept please see below: Everything was sent except the one in yellow. I sent that back to you.

Title	Number of Poles	Application Submit Date
LX135-01W	25	3/14/2018
LX132-01W	25	3/14/2018
LX135-02W	25	3/17/2018
LX135-03W	25	3/17/2018
LX135-04W	25	3/17/2018
LX135-05W	25	3/17/2018
LX135-06W	3	3/17/2018
LX-FR01-03W	3	3/17/2018
LX-FR02-04W	10	3/17/2018
LX-FR02-03W	25	3/17/2018
LX-FR02-01W	25	3/17/2018
LX-FR02-02W	25	3/17/2018
LX-FR04-05BiW	12	3/19/2018
LX167-01W	25	3/19/2018
LX167-02W	25	3/19/2018
LX167-03W	25	3/19/2018
LX167-04W	25	3/19/2018
LX167-05W	22	3/19/2018

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Monday, March 26, 2018 12:16 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX167-05W

Good Afternoon Nicole,
Is this the last of our rejected applications?
If you can provide a list of the ones you guys are keeping that would be great.
Thank you,

Lauren Sandefur
Permit Specialist

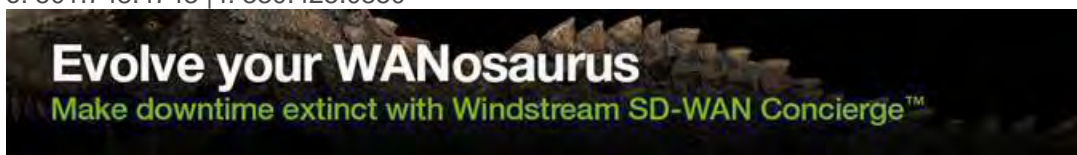
From: Windstream Jointuse [<mailto:Windstream.Jointuse@windstream.com>]
Sent: Tuesday, March 20, 2018 4:21 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: RE: LX167-05W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1703 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Monday, March 19, 2018 2:20 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX167-05W

Good Afternoon,
Please see attached for proposal titled LX167-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



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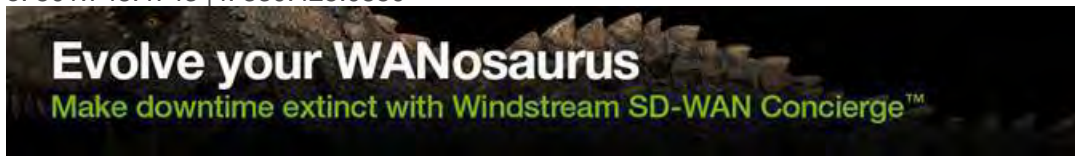
From: Hodges, Felicia N
Sent: Wednesday, April 11, 2018 4:23 PM
To: Lauren Sandefur
Subject: RE: LX167-05W

Lauren,

The FCC regulation states that we have 45 days to review once those days are up then I will be able to provide updates to these applications. The only application that was sent back with the one in yellow. At this time we have a total of 372 under review now. Let me know if you have further questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, April 11, 2018 9:20 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: LX167-05W

Good Morning Felicia,
Could you provide an update on the list of applications below?
I also need to know which applications have not been reviewed yet.
Thank you so much!

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N [mailto:Felicia.N.Hodges@windstream.com]
Sent: Monday, March 26, 2018 12:36 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX167-05W

I can provide a list of the ones kept please see below: Everything was sent except the one in yellow. I sent that back to you.

Title	Number of Poles	Application Submit Date
LX135-01W	25	3/14/2018
LX132-01W	25	3/14/2018
LX135-02W	25	3/17/2018
LX135-03W	25	3/17/2018
LX135-04W	25	3/17/2018
LX135-05W	25	3/17/2018
LX135-06W	3	3/17/2018
LX-FR01-03W	3	3/17/2018
LX-FR02-04W	10	3/17/2018
LX-FR02-03W	25	3/17/2018
LX-FR02-01W	25	3/17/2018
LX-FR02-02W	25	3/17/2018
LX-FR04-05BiW	12	3/19/2018
LX167-01W	25	3/19/2018
LX167-02W	25	3/19/2018
LX167-033 3+W	25	3/19/2018
LX167-04W	25	3/19/2018
LX167-05W	22	3/19/2018

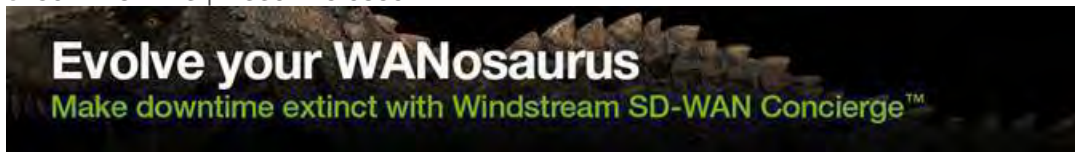
Felicia(Nicole)Hodges

Coordinator - Engineering Support | Windstream

11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212

Felicia.N.Hodges@Windstream.com

o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Monday, March 26, 2018 12:16 PM

To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>

Subject: FW: LX167-05W

Good Afternoon Nicole,

Is this the last of our rejected applications?

If you can provide a list of the ones you guys are keeping that would be great.

Thank you,

Lauren Sandefur

Permit Specialist

From: Windstream Jointuse [<mailto:Windstream.Jointuse@windstream.com>]
Sent: Tuesday, March 20, 2018 4:21 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: RE: LX167-05W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1703 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

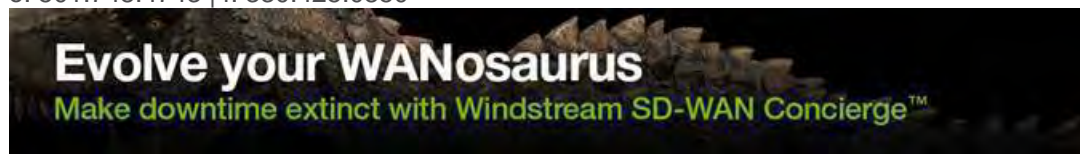
Felicia(Nicole)Hodges

Coordinator - Engineering Support | Windstream

11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212

Felicia.N.Hodges@Windstream.com

o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Monday, March 19, 2018 2:20 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX167-05W

Good Afternoon,

Please see attached for proposal titled LX167-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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From: Windstream Jointuse
Sent: Thursday, August 09, 2018 11:52 AM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX174-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6218 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 2:42 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX174-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX174-01w. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Thursday, August 09, 2018 11:46 AM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX175-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUP6217 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 12:30 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX175-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX175-01w. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: Windstream Jointuse
Sent: Thursday, August 09, 2018 12:29 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX276-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6223 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 5:05 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX276-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX276-02w. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 2:37 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR05-05W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5214 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 2:46 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR05-05W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR05-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



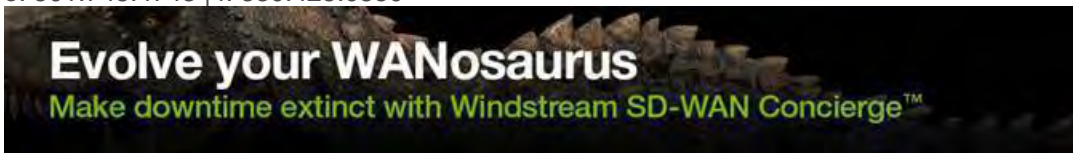
From: Windstream Jointuse
Sent: Monday, July 09, 2018 2:31 PM
To: Lauren Sandefur
Subject: RE: LX-FR05-06W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5213 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 2:43 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Subject: LX-FR05-06W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR05-06W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: Windstream Jointuse
Sent: Monday, July 09, 2018 2:41 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR05-07W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5215 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 2:47 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR05-07W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR05-07W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 2:45 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR05-08W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5216 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 2:50 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR05-08W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR05-08W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



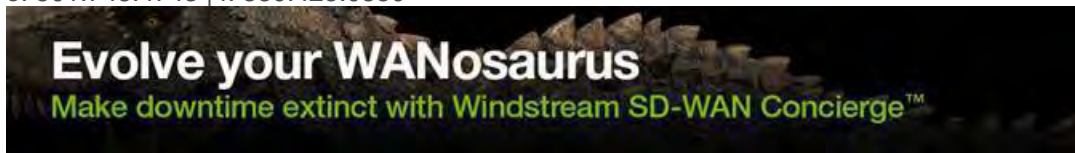
From: Hodges, Felicia N
Sent: Thursday, May 17, 2018 4:19 PM
To: Lauren Sandefur
Subject: RE: LX-FR05-09W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR3758 and submitted to the Windstream Engineer, Ashley Sanders as of 5/17/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, May 17, 2018 2:57 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Cc: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Subject: LX-FR05-09W

Good Afternoon,
Please see attached for proposal titled LX-FR05-09W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 2:50 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR05-10W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5217 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 2:53 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR05-10W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR05-10W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 2:54 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR06-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5220 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 2:58 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR06-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR06-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 3:05 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR06-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5222 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 3:43 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR06-02W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR06-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 3:09 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR06-03W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5223 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 4:30 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR06-03W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR06-03W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 3:16 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR06-04W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5224 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 4:44 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR06-04W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR06-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 2:59 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR07-16W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5221 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 3:21 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR07-16W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR07-16W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 3:22 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR07-17W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5225 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 5:36 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR07-17W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR07-17W with the correct attachments. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 3:26 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR07-18W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5226 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 5:37 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR07-18W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR07-18W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: Windstream Jointuse
Sent: Monday, July 09, 2018 3:30 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR07-19W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5227 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 5:53 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR07-19W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR07-19W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Monday, July 09, 2018 3:34 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX-FR08-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5229 and submitted to the Windstream Engineer, Ashley Sanders as of 7/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, July 5, 2018 6:19 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX-FR08-01W Pole Application

Good Afternoon,
Please see attached for proposal titled LX-FR08-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Windstream Jointuse
Sent: Wednesday, July 11, 2018 4:04 PM
To: Lauren Sandefur
Subject: RE: LX-FR08-02W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR5314 and submitted to the Windstream Engineer, Ashley Sanders as of 7/11/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, July 10, 2018 8:38 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Subject: LX-FR08-02W Pole Application

Good Morning,
Please see attached for proposal titled LX-FR08-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hodges, Felicia N
Sent: Wednesday, June 20, 2018 2:04 PM
To: Lauren Sandefur
Subject: RE: MetroNet Applications

Please see below:

Title	Number of Poles	Application Submit Date	Date Sent to Engineer
LX025-01W	13	6/4/2018	6/5/2018
LX047-02W	21	6/5/2018	6/6/2018
LX-FR07-05W	25	6/5/2018	6/6/2018
LX-FR07-06W	25	6/6/2018	6/6/2018
LX-FR07-07W	25	6/6/2018	6/6/2018
LX-FR07-08W	25	6/6/2018	6/6/2018
LX-FR07-09W	25	6/6/2018	6/11/2018
LX-FR07-10W	25	6/6/2018	6/11/2018
LX-FR07-11W	25	6/6/2018	6/11/2018
LX-FR07-12W	25	6/6/2018	6/11/2018
LX-FR07-13W	19	6/6/2018	6/11/2018
LX-Winchester Reroute 01W	10	6/18/2018	6/20/2018
LX-FR03-02W	4	6/18/2018	6/20/2018
LX-FR07-14W	25	6/19/2018	6/20/2018
LX-FR07-15W	9	6/19/2018	6/20/2019
Total	301		

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, June 20, 2018 11:01 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: MetroNet Applications

Can you tell me the exact submittal date for these applications?

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Wednesday, June 20, 2018 10:59 AM

To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>

Subject: RE: MetroNet Applications

Okay I have 4 application that I have not processed yet that will be done today. Once I process those you will have met the 300 limit for the month of June. Below are the 4 application that have not yet been processed. You will get an email on all 4 today. Anything after these will be rejected and you will have to submit next month.

LX-FR07-15W Pole Application
LX-FR07-14W Pole Application
LX-FR03-02W Pole Application
LX-Winchester Reroute 01W Pole Application

Thank you,

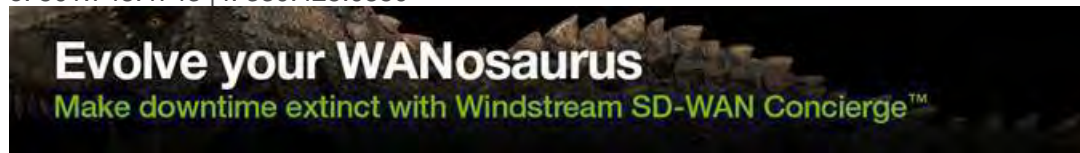
Felicia(Nicole)Hodges

Coordinator - Engineering Support | Windstream

11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212

Felicia.N.Hodges@Windstream.com

o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Wednesday, June 20, 2018 9:34 AM

To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>

Subject: MetroNet Applications

Good Morning Nicole,

A few weeks ago you provided me a spreadsheet with our submitted applications showing the time line on when we can submit. I have several applications that I am ready to send over I just didn't want those to get rejected because we have gone over the 300 pole limit. I think we're in good standings with that date but I just want to double check.

Can you send me an updated spreadsheet with this information?

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

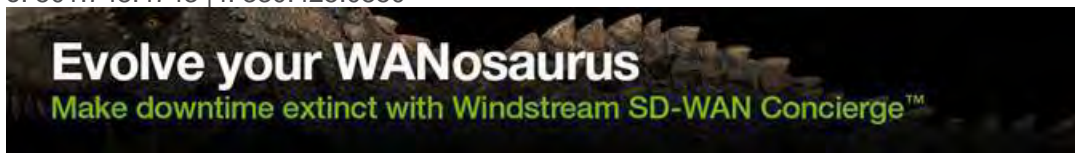
From: Hodges, Felicia N
Sent: Wednesday, June 20, 2018 11:59 AM
To: Lauren Sandefur
Subject: RE: MetroNet Applications

Okay I have 4 application that I have not processed yet that will be done today. Once I process those you will have met the 300 limit for the month of June. Below are the 4 application that have not yet been processed. You will get an email on all 4 today. Anything after these will be rejected and you will have to submit next month.

LX-FR07-15W Pole Application
LX-FR07-14W Pole Application
LX-FR03-02W Pole Application
LX-Winchester Reroute 01W Pole Application

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, June 20, 2018 9:34 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: MetroNet Applications

Good Morning Nicole,
A few weeks ago you provided me a spreadsheet with our submitted applications showing the time line on when we can submit. I have several applications that I am ready to send over I just didn't want those to get rejected because we have gone over the 300 pole limit. I think we're in good standings with that date but I just want to double check. Can you send me an updated spreadsheet with this information?
Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

From: Hodges, Felicia N
Sent: Wednesday, June 20, 2018 11:49 AM
To: Lauren Sandefur
Subject: RE: MetroNet Applications

Give me just a minute Lauren and I can tell you what you have.

Thanks
Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, June 20, 2018 9:34 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: MetroNet Applications

Good Morning Nicole,
A few weeks ago you provided me a spreadsheet with our submitted applications showing the time line on when we can submit. I have several applications that I am ready to send over I just didn't want those to get rejected because we have gone over the 300 pole limit. I think we're in good standings with that date but I just want to double check. Can you send me an updated spreadsheet with this information?
Thank you!

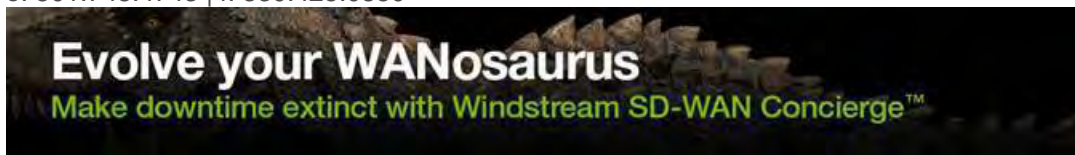
Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: Hodges, Felicia N
Sent: Wednesday, June 20, 2018 4:32 PM
To: Lauren Sandefur
Subject: RE: MetroNet Applications

Well it will start on the 5th we will be closed on the 4th

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, June 20, 2018 2:31 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: MetroNet Applications

So our next submittal date starts 7/4/18?

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Wednesday, June 20, 2018 1:04 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: MetroNet Applications

Please see below:

Title	Number of Poles	Application Submit Date	Date Sent to Engineer
LX025-01W	13	6/4/2018	6/5/2018
LX047-02W	21	6/5/2018	6/6/2018
LX-FR07-05W	25	6/5/2018	6/6/2018
LX-FR07-06W	25	6/6/2018	6/6/2018
LX-FR07-07W	25	6/6/2018	6/6/2018
LX-FR07-08W	25	6/6/2018	6/6/2018

LX-FR07-09W	25	6/6/2018	6/11/2018
LX-FR07-10W	25	6/6/2018	6/11/2018
LX-FR07-11W	25	6/6/2018	6/11/2018
LX-FR07-12W	25	6/6/2018	6/11/2018
LX-FR07-13W	19	6/6/2018	6/11/2018
LX-Winchester Reroute 01W	10	6/18/2018	6/20/2018
LX-FR03-02W	4	6/18/2018	6/20/2018
LX-FR07-14W	25	6/19/2018	6/20/2018
LX-FR07-15W	9	6/19/2018	6/20/2019
Total	301		

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Wednesday, June 20, 2018 11:01 AM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: RE: MetroNet Applications

Can you tell me the exact submittal date for these applications?

Lauren Sandefur
Permit Specialist

From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Wednesday, June 20, 2018 10:59 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: MetroNet Applications

Okay I have 4 application that I have not processed yet that will be done today. Once I process those you will have met the 300 limit for the month of June. Below are the 4 application that have not yet been processed. You will get an email on all 4 today. Anything after these will be rejected and you will have to submit next month.

- LX-FR07-15W Pole Application
- LX-FR07-14W Pole Application
- LX-FR03-02W Pole Application
- LX-Winchester Reroute 01W Pole Application

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850

Evolve your WANosaurus

Make downtime extinct with Windstream SD-WAN Concierge™

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Wednesday, June 20, 2018 9:34 AM

To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>

Subject: MetroNet Applications

Good Morning Nicole,

A few weeks ago you provided me a spreadsheet with our submitted applications showing the time line on when we can submit. I have several applications that I am ready to send over I just didn't want those to get rejected because we have gone over the 300 pole limit. I think we're in good standings with that date but I just want to double check.

Can you send me an updated spreadsheet with this information?

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

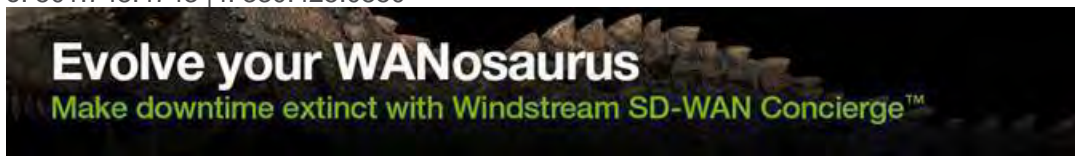
From: Hodges, Felicia N
Sent: Friday, June 29, 2018 10:08 AM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU1694 LX16702W
Attachments: Exhibit B - MetroNet JU1694 LX16702W.pdf

Lauren,

Please see the following attachment this above application has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Hays, Sarah K
Sent: Thursday, June 28, 2018 2:09 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: FW: Exhibit B - MetroNet JU1694 LX16702W

LX167-02

From: Sanders, Ashley L
Sent: Friday, June 8, 2018 4:19 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU1694 LX16702W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 1694

MetroNet package: LX16702W

JobTrac #: 21900069181064

Cost for MRC to bill MetroNet: \$2484.50

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders

Manager OSP Engineering - KY | Windstream

130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com

office: 859.357.6206 | fax: 859.357.6203

JUPR1694

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

25 total poles:
7 need MR (lower 11 att + 2 drops)
18 no MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:
Submit in Duplicate

LX167-02W

219000691-81064
Bill Metronet:
\$2,484.50

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: LAUREN SANDEFUR 812-213-1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com
Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: lsandefur 3.19.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project. If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT. NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD. NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1 73819-35495	49W ^{MR} ✓	132 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	19'6"	19'5"	23'0"		(1)Fiber/Strand		WS to lower	YES
2 72925-35389	50W	134 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	18'10"	19'3"	25'0"		(1)Fiber/Strand		No MR	
3 73024-35299	51W	145 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	20'0"	N/A	26'11"		(1)Fiber/Strand		u	
4 73126-35187	52W	140 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	19'7"	N/A	29'4"		(1)Fiber/Strand		u	
5 73232-35080	53W	140 LACLEDE AVE, Lexington, KY 40505	45, 3, WXM	20'10"	N/A	26'10"		(2)Fiber/Strand		u	
6 73232-24995	54W ✓	1993 LACLEDE CT, Lexington, KY 40505	40, 3, WXM	21'9"	N/A	26'0"		(2)Fiber/Strand		WS to lower	
7 73389-34841	55W	1941 LACLEDE CT, Lexington, KY 40505	40, 3, WXM	20'10"	N/A	22'11"		(1)Fiber/Strand		No MR	
8 73490-34744	56W	1945 LACLEDE CT, Lexington, KY 40505	40, 4, WXM	18'2"	17'1"	26'10"		(1)Fiber/Strand		u	
9 73559-34679	57W ✓	1949 LACLEDE CT, Lexington, KY 40505	40, 3, WXM	22'8"	N/A	27'8"		(1)Fiber/Strand		WS to lower	
10 73669-33890	62W ^{ATT} ✓	184 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	N/A	N/A	26'10"		(2)Fiber/Strand		WS to attach	
11 72562-34027	63W	174 WINSTON AVE, Lexington, KY 40505	50, 2, WXM	25'4"	24'1"	33'8"		(1)Fiber/Strand		No MR	
12 72452-34137	64W	160 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	20'3"	20'3"	26'10"		(1)Fiber/Strand		u	
13 72326-34263	65W	154 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	17'8"	17'11"	23'7"		(1)Fiber/Strand		u	
14 72217-34372	66W	144 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	17'9"	17'9"	25'0"		(1)Fiber/Strand		u	
15 72098-34492	67W	118 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	18'11"	19'2"	25'5"		(1)Fiber/Strand		u	
16 72018-34572	68W	112 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	17'6"	17'6"	24'11"		(1)Fiber/Strand		u	
17 71971-34621	69W	112 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	17'2"	N/A	23'5"		(1)Fiber/Strand		u	
18 71911-34680	70W	106 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	20'9"	20'9"	26'9"		(1)Fiber/Strand		u	
19 71813-34779	71W	104 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	20'0"	20'0"	26'6"		(1)Fiber/Strand		u	

20	70678-34125	92W	1800 OLD PARIS RD, Lexington, KY 40505	60, 2, WXM	21'5"	N/A	47'1"		(1)Fiber/Strand			
21	27230-159	97W <i>x</i>	127 E NEW CIRCLE RD, Lexington, KY 40505	55, 2, WXM	26'0"	N/A	28'9"		(1)Fiber/Strand		<i>NO MR</i>	<i>YES</i>
22	27230-155	98W	145 E NEW CIRCLE RD, Lexington, KY 40505	55, 2, WXM	25'3"	N/A	31'3"		(1)Fiber/Strand		<i>WS to Lower</i>	<i>}</i>
23	27230-165	<i>99W</i> <i>x</i>	145 E NEW CIRCLE RD, Lexington, KY 40505	45, 3, WXM	21'5"	21'5"	24'4"		(1)Fiber/Strand		<i>NO MR</i>	
24	26230-175	100W <i>x</i>	175 E NEW CIRCLE RD, BLDG 2, Lexington, KY 40505	45, 3, WXM	18'8"	N/A	24'0"		(1)Fiber/Strand		<i>WS to Lower</i>	<i>}</i>
25	27230-185	101W <i>x</i>	185 E NEW CIRCLE RD, Lexington, KY 40505	45, 3, WXM	19'3"	18'6"	22'3"		(1)Fiber/Strand		<i>u</i>	
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

[Handwritten Signature] *6/3/18*

From: Hodges, Felicia N
Sent: Thursday, July 19, 2018 4:43 PM
To: Lauren Sandefur
Subject: FW: Exhibit B - MetroNet JU2838 LX16501W
Attachments: Exhibit B - MetroNet JU2838 LX16501W.pdf

Lauren,

The above request has been approved.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Sanders, Ashley L
Sent: Thursday, July 19, 2018 2:00 PM
To: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; WINDSTREAM Poles <WINDSTREAM.Poles@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Grigsby, Kevin <Kevin.Grigsby@windstream.com>
Subject: Exhibit B - MetroNet JU2838 LX16501W

Windstream JointUse & Windstream Poles,

See attached for Exhibit B for:

JU #: 2838

MetroNet package: LX16501W

JobTrac #: 21900069181434

Cost for MRC to bill MetroNet: \$2077.13

Let me know if you have questions and please advise when payment has been received so my engineer can distribute the jobtrac.

Thanks,

Ashley L. Sanders
Manager OSP Engineering - KY | Windstream
130 W New Circle Rd, Ste 170, Lexington, KY 40505

ashley.l.sanders@windstream.com
office: 859.357.6206 | fax: 859.357.6203

JUPR2838

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

10 - TOTAL POLES

5 - Need MR (lower 13ft & 1 dg)

5 - No MR

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:

LX165-01W

LXTN

219000691-81434

Submit in Duplicate

BILL METROWET:

\$ 2,077.13

FOR MAKE READY

Name of Firm Applying:

CMN-RUS, INC

Contact Name, Phone #

Lauren Sandefur 812.213.1328

EMAIL ADDRESS

lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sandefur 4/19/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.

If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.

NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1 21141-1900	45W ✓	421 Anniston Dr, Lexington, Ky 40505	45, 3, WXM	24'3"	N/A	28'3"		(1)Fiber/Strand	24'11"	WS to lower	YES
2 21141-1864	46W ✓	409 Anniston Dr, Lexington, Ky 40505	45, 3, WXM	21'0"	21'0"	24'8"		(1)Fiber/Strand	21'	"	
3 21141-1850	47W	405 Anniston Dr, Lexington, Ky 40505	45, 3, WXM	17'8"	16'10"	26'11"		(1)Fiber/Strand	22'3"	NO MR	
4 21141-1856	48W	401 Anniston Dr, Lexington, Ky 40505	50, 2, WXM	22'3"	N/A	29'1"		(1)Fiber/Strand	25'2"	NO MR	
5 74792-32408	314W ✓	1960 Bryan Station Rd, Lexington, Ky 40504	45, 3, WXM	22'8"	N/A	26'0"		(1)Fiber/Strand	22'8"	WS to lower	
6 21141-1912	315W	1960 Bryan Station Rd, Lexington, Ky 40504	45, 3, WXM	19'5"	N/A	27'2"		(1)Fiber/Strand	21'7"	NO MR	
7 21141-1916	316W ✓	1960 Bryan Station Rd, Lexington, Ky 40504	45, 3, WXM	25'2"	N/A	29'6"		(1)Fiber/Strand	26'2"	WS to lower	
8 21141-1920	317W ✓	1960 Bryan Station Rd, Lexington, Ky 40504	50, 2, WXM	31'5"	N/A	35'11"		(1)Fiber/Strand	32'5"	"	
9 21124-1924	318W	1960 Bryan Station Rd, Lexington, Ky 40504	55, 2, WXM	33'7"	N/A	40'6"		(1)Fiber/Strand	36'2"	NO MR	
10 21141-1928	319W	1960 Bryan Station Rd, Lexington, Ky 40504	65, 2, WXM	39'9"	N/A	46'5"		(1)Fiber/Strand	41'9"	"	
11											
12											
13											

ESTIMATED TOTAL COSTS

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

for [Signature] 7/1/18

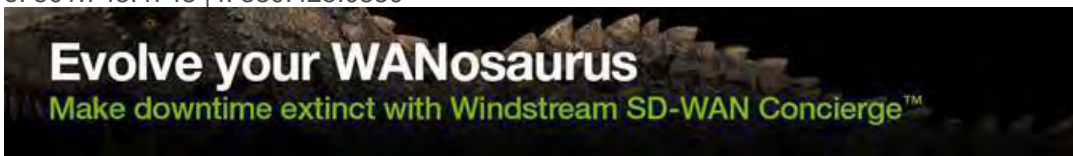
From: Hodges, Felicia N
Sent: Thursday, May 17, 2018 3:11 PM
To: Lauren Sandefur
Subject: Application

Lauren,

I have not received anything so let go ahead and sent it to Windstream.jointuse@Windstream.com.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Hays, Sarah K
Sent: Friday, May 11, 2018 9:22 AM
To: Lauren Sandefur
Cc: Edwards, Kimberly; Addison Burk; Nicole Sugg
Subject: Windstream Approved Applications

Lauren,

Good morning. I have heard back from our engineer and the following 14 applications that total 334 poles have been approved w/ make ready . We will have the make ready estimates to you in 14 days.

LX132-01W

LX135-01W

LX135-02W

LX135-03W

LX135-04W

LX-FR02-01W

LX-FR02-02W

LX-FR02-03W

LX-FR04-05BiW

LX167-01W

LX167-02W

LX167-03W

LX167-04W

LX167-05W

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

<<mailto:sarah.k.hays@windstream.com>> sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600



From: John Campbell <John.Campbell@metronetinc.com>

Sent: Wednesday, July 12, 2017 4:09 PM

To: Richardson, Michael S <Michael.S.Richardson@windstream.com>

Cc: Jason Nutter <jason.nutter@metronetinc.com>; Jason White <Jason.White@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>

Subject: Conference Calls

Mike –

It was good to hear from you today. Our team is good Friday on to have a call about the collocation invoices. Let me know what time will work best for the Windstream team. Also, I talked to Dan King today. We're going to try to meet early next week to discuss the Duke make ready invoice. Thanks for your help.

John Campbell

Executive Vice President and General Counsel

8837 Bond St. | Overland Park, KS 66214

Office: 812-213-1085

Cell: 913-375-5979

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From: King, Daniel
Sent: Tuesday, August 21, 2018 2:56 PM
To: Lloyd, James
Subject: FW: Conference Calls

From: Richardson, Michael S
Sent: Thursday, July 13, 2017 7:07 AM
To: John Campbell <John.Campbell@metronetinc.com>
Cc: Jason Nutter <jason.nutter@metronetinc.com>; Jason White <Jason.White@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>
Subject: RE: Conference Calls

Hello John,

Always good catching up with you.

Dan King will be off tomorrow it appears as will Joe McClure. As long as Shelley Starks and Nicole Winters can cover for both of them tomorrow should work. If not, we may need to postpone this one to early next week as well.

If it works for you it appears our side can all be there at 2:30 Central.

Let me know the thoughts.

Thanks, Mike

Mike Richardson
Windstream Network Development
Office – (540) 381-6445
Mobile – (540) 818-4014
Michael.S.Richardson@windstream.com

From: John Campbell [<mailto:John.Campbell@metronetinc.com>]
Sent: Wednesday, July 12, 2017 5:09 PM
To: Richardson, Michael S <Michael.S.Richardson@windstream.com>
Cc: Jason Nutter <jason.nutter@metronetinc.com>; Jason White <Jason.White@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>
Subject: Conference Calls

Mike –

It was good to hear from you today. Our team is good Friday on to have a call about the collocation invoices. Let me know what time will work best for the Windstream team. Also, I talked to Dan King today. We're going to try to meet early next week to discuss the Duke make ready invoice. Thanks for your help.

[John Campbell](#)

Executive Vice President and General Counsel
8837 Bond St. | Overland Park, KS 66214
Office: 812-213-1085
Cell: 913-375-5979

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From: King, Daniel

Sent: Tuesday, May 02, 2017 9:32 AM

To: 'Anita Larson' <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: RE: Duke Invoices

Anita:

Thanks for the update.

Dan

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]

Sent: Tuesday, May 02, 2017 9:12 AM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: Duke Invoices

Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com



From: Anita Larson <Anita.Larson@metronetinc.com>

Sent: Tuesday, May 02, 2017 9:12 AM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: Duke Invoices

Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com



From: Anita Larson <Anita.Larson@metronetinc.com>

Sent: Wednesday, May 10, 2017 10:27 AM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: RE: Duke Invoices

Dan: We have heard nothing, and frankly would like to let sleeping dogs lie. I will ask Kevin if he has anything scheduled with Duke, but I haven't heard of anything.

Anita

Anita Larson

Senior Counsel

8837 Bond Street

Overland Park, KS 66214

Office: 812.213.1095

Mobile: 785.331.7296

Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]

Sent: Wednesday, May 10, 2017 10:22 AM

To: Anita Larson; Richardson, Michael S

Subject: RE: Duke Invoices

Anita:

I just wanted to check in with you and see if MetroNet has any follow-up meetings scheduled with Duke? I think that my internal business contacts are getting pressure to get this invoice off of our books.

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]

Sent: Tuesday, May 02, 2017 9:12 AM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: Duke Invoices

Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

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From: Anita Larson <Anita.Larson@metronetinc.com>

Sent: Wednesday, June 21, 2017 5:35 PM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: RE: Duke Invoices

I apologize, but I don't have an update. I will ping my folks again.

Anita Larson

Senior Counsel

8837 Bond Street

Overland Park, KS 66214

Office: 812.213.1095

Mobile: 785.331.7296

Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]

Sent: Wednesday, June 21, 2017 4:56 PM

To: Anita Larson; Richardson, Michael S

Subject: RE: Duke Invoices

Anita:

Any update for us? Mike and I have an internal call at 11:00 tomorrow with several other persons, and I am sure this matter will come up.

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: King, Daniel

Sent: Friday, June 09, 2017 11:04 AM

To: Anita Larson <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: RE: Duke Invoices

Anita:

Thanks for the update. I didn't think you were ignoring me. I was going to give you a call on Monday if I hadn't heard anything.

Hope you have a great weekend and are able to round up the necessary folks for a meeting early next week. ☺

Dan

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Friday, June 09, 2017 10:36 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan/Mike: I'm not intentionally ignoring you. We are trying to schedule a meeting internally to discuss this. I had hoped it would happen today, but it looks like it will be next week. I would greatly appreciate your patience and hope to be in contact with you shortly.

Hope you have a great weekend!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Thursday, June 08, 2017 2:07 PM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices
Importance: High

Anita:

Do you have any updates for me? There is a lot of internal pressure building to get this invoice off our books.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Thursday, June 01, 2017 10:37 AM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan: Thanks for the email. Let me talk to my folks about this.

Thanks again,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Thursday, June 01, 2017 10:16 AM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices
Importance: High

Anita:

I wanted to follow up with you on this one again. We understand and appreciate MetroNet's desire to let sleeping dogs lie with Duke, but that approach causes financial issues for Windstream because we are the entity forced to carry an aging amount in our Accounts Payable and Accounts Receivable. If MetroNet doesn't object, and Duke would be willing to withdraw the Windstream invoice and issue it directly to MetroNet, we wouldn't have a concern with MetroNet's approach. However, I am not sure that Duke is going to be willing to invoice MetroNet directly since their Agreement is with Windstream.

Please let me know at your earliest convenience whether MetroNet is willing to allow Windstream to pursue having Duke withdraw the Windstream invoice and issue it directly to MetroNet.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, May 10, 2017 10:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan: We have heard nothing, and frankly would like to let sleeping dogs lie. I will ask Kevin if he has anything scheduled with Duke, but I haven't heard of anything.

Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, May 10, 2017 10:22 AM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices

Anita:

I just wanted to check in with you and see if MetroNet has any follow-up meetings scheduled with Duke? I think that my internal business contacts are getting pressure to get this invoice off of our books.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Tuesday, May 02, 2017 9:12 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: Duke Invoices

Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

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From: King, Daniel
Sent: Tuesday, August 21, 2018 2:52 PM
To: Lloyd, James
Subject: FW: Duke Invoices

Importance: High

From: King, Daniel
Sent: Thursday, June 01, 2017 10:16 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices
Importance: High

Anita:

I wanted to follow up with you on this one again. We understand and appreciate MetroNet's desire to let sleeping dogs lie with Duke, but that approach causes financial issues for Windstream because we are the entity forced to carry an aging amount in our Accounts Payable and Accounts Receivable. If MetroNet doesn't object, and Duke would be willing to withdraw the Windstream invoice and issue it directly to MetroNet, we wouldn't have a concern with MetroNet's approach. However, I am not sure that Duke is going to be willing to invoice MetroNet directly since their Agreement is with Windstream.

Please let me know at your earliest convenience whether MetroNet is willing to allow Windstream to pursue having Duke withdraw the Windstream invoice and issue it directly to MetroNet.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, May 10, 2017 10:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan: We have heard nothing, and frankly would like to let sleeping dogs lie. I will ask Kevin if he has anything scheduled with Duke, but I haven't heard of anything.

Anita

Anita Larson

Senior Counsel
8837 Bond Street
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Email: anita.larson@qservicesco.com

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Sent: Wednesday, May 10, 2017 10:22 AM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices

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Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
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From: Anita Larson <Anita.Larson@metronetinc.com>

Sent: Thursday, June 01, 2017 10:37 AM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

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Thanks again,

Anita

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Senior Counsel

8837 Bond Street

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Sent: Thursday, June 01, 2017 10:16 AM

To: Anita Larson; Richardson, Michael S

Subject: RE: Duke Invoices

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Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

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To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
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o: 812.759.7973 | m: 812.480.4786

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From: King, Daniel
Sent: Tuesday, August 21, 2018 2:53 PM
To: Lloyd, James
Subject: FW: Duke Invoices

From: Anita Larson <Anita.Larson@metronetinc.com>
Sent: Friday, June 09, 2017 10:36 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan/Mike: I'm not intentionally ignoring you. We are trying to schedule a meeting internally to discuss this. I had hoped it would happen today, but it looks like it will be next week. I would greatly appreciate your patience and hope to be in contact with you shortly.

Hope you have a great weekend!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Thursday, June 08, 2017 2:07 PM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices
Importance: High

Anita:

Do you have any updates for me? There is a lot of internal pressure building to get this invoice off our books.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

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Sent: Thursday, June 01, 2017 10:37 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

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Office: 812.213.1095
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Subject: RE: Duke Invoices

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Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Tuesday, May 02, 2017 9:12 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: Duke Invoices

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Have a great day!

Thanks,
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From: King, Daniel
Sent: Monday, July 24, 2017 10:56 AM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: Metronet Update

John:

I spoke with Joyce Latham this morning about this week's call / meeting on Thursday. Joyce said that if we schedule a call / meeting of the decision makers from MetroNet and Windstream for sometime in August, that will give her time to prepare and confirm settlement parameters that she could work within. This will also give us time to determine if there are any other decision makers within Windstream that need to be included in the call / meeting. Joyce would not be available August 8 – 10 or August 21 – 23, but otherwise her August is open.

It is my understanding that even if we don't have the decision makers taking part in Thursday's meeting, we (MetroNet and Windstream) still plan to use the time we have set aside on Thursday morning to work on making whatever additional progress we can in getting the Duke Energy invoice and the nGenX colocation issues worked out. Also, we can still talk through the various MetroNet / Windstream agreements and see if there is anything else the parties can do to position ourselves to reach final agreement on a go forward plan in August for these agreements. Let me know if your understanding is different.

Thanks.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: John Campbell [<mailto:John.Campbell@metronetinc.com>]
Sent: Tuesday, July 18, 2017 11:14 AM
To: King, Daniel <Daniel.King@windstream.com>
Subject: FW: Metronet Update

Scott Freeburn

Scott.Freeburn@duke-energy.com
Duke Energy
Grid Solutions - Joint Use

3300 Exchange Place
Lake Mary, FL 32746
(407) 942-9415 or 280-2415 (office)
(407) 312-3725 (cel)



From

From: Freeburn, Scott [<mailto:Scott.Freeburn@duke-energy.com>]
Sent: Thursday, September 29, 2016 8:06 AM
To: Gibson, Jeremy B <Jeremy.Gibson@duke-energy.com>; Kevin Stelmach <Kevin.Stelmach@metronetinc.com>
Subject: RE: Metronet Update

From: Gibson, Jeremy B
Sent: Thursday, September 29, 2016 8:56 AM
To: Kevin Stelmach; Hedrick, Jason
Cc: Freeburn, Scott
Subject: RE: Metronet Update

Kevin,

I've seen the email but have not got to get updates as of yet. We cannot commit to a weekly update on this as it pulls the engineers off their jobs to give updates and this take a lot of time to get on a weekly basis. This continues to delay jobs even further. Due to the amount of companies we are dealing with we have stressed this to all of the companies that are asking for updates. Please keep this in mind for future updates. Also with the proposals in question we really need Metronet to be talking to Windstream. I have both companies asking me for updates instead of talking to each other which they are supposed to be doing. Again I'll get these updates, but moving forward Metronet will have to get these from Windstream to alleviate the duplicate work Duke is doing.

If you have any other questions please let me know.

Thank you,
Jeremy

From: Kevin Stelmach [<mailto:Kevin.Stelmach@metronetinc.com>]
Sent: Thursday, September 29, 2016 8:20 AM
To: Gibson, Jeremy B
Subject: FW: Metronet Update

Good morning Jeremy...just wanted to follow up to see if you have had a chance to look into my email below.

Thanks

Kevin Stelmach
General Manager

From: Kevin Stelmach
Sent: Wednesday, September 21, 2016 8:37 AM
To: jeremy.gibson@duke-energy.com
Subject: FW: Metronet Update

Jeremy,

Attached is the latest which is for the most part the same as what I sent to you last week. Can you provide me with the updates that you sent to Windstream? This will allow me to ask them questions on why we have not received them yet.

Below is a snap shot of the data in the spread sheet and the average number of months we are currently at with each. Can you provide a status as to when there will be another contractor in place to help with the back log?

Total Poles Applications	78			
	Quantity	Average Days-Current	Average Months-Current	Notes
Make Ready Complete	10	201.00	6.70	
Waiting on Make Ready	5	220	7.33	
Invoices Paid	4	230	7.67	
Invoice Rec'd	1	269	8.97	
Waiting on Invoice	24	212	7.07	numbe
Make Ready Quote Rec'd	7	177	5.90	
Waiting on Make Ready Estimate	31	174	5.80	Over ha

One last item I think I asked about this a few weeks ago but if we could get the two applications below back as soon as possible this will allow us to turn up several thousand passes.

456	3 - Submitted	GN East Feeder 2	40	113485-2016	1603KDL0039DEI	2/10/2016	4/5/2016	\$3,133.75	9/1/2016	\$
457	3 - Submitted	GN East Feeder 3	37	113492-2016	1604KDL0089DEI	2/10/2016	4/5/2016		6/30/2016	\$21,35

As always Jeremy I appreciate your help.

Kevin Stelmach
 General Manager

From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Wednesday, September 14, 2016 9:07 AM
To: Kevin Stelmach <Kevin.Stelmach@metronetinc.com>
Subject: RE: Metronet Update

Kevin,

I talked to the Windstream folks and they said they forwarded on the updates on this already. Do you still need these? Just let me know.

Thank you,
Jeremy

From: Kevin Stelmach [<mailto:Kevin.Stelmach@metronetinc.com>]
Sent: Monday, September 12, 2016 12:22 PM
To: Gibson, Jeremy B
Subject: Metronet Update

***** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. *****

Jeremy,

Please find attached the current spread sheet for all of our pole applications. I have also provided a summary below which provides the average length of time based on the current state an application is in. A high priority area for me is Greenwood East Feeder 2 and 3. I have a number passes and then customers that can be activated once these are complete. These are 2 of the 24 that we are waiting on an invoice.

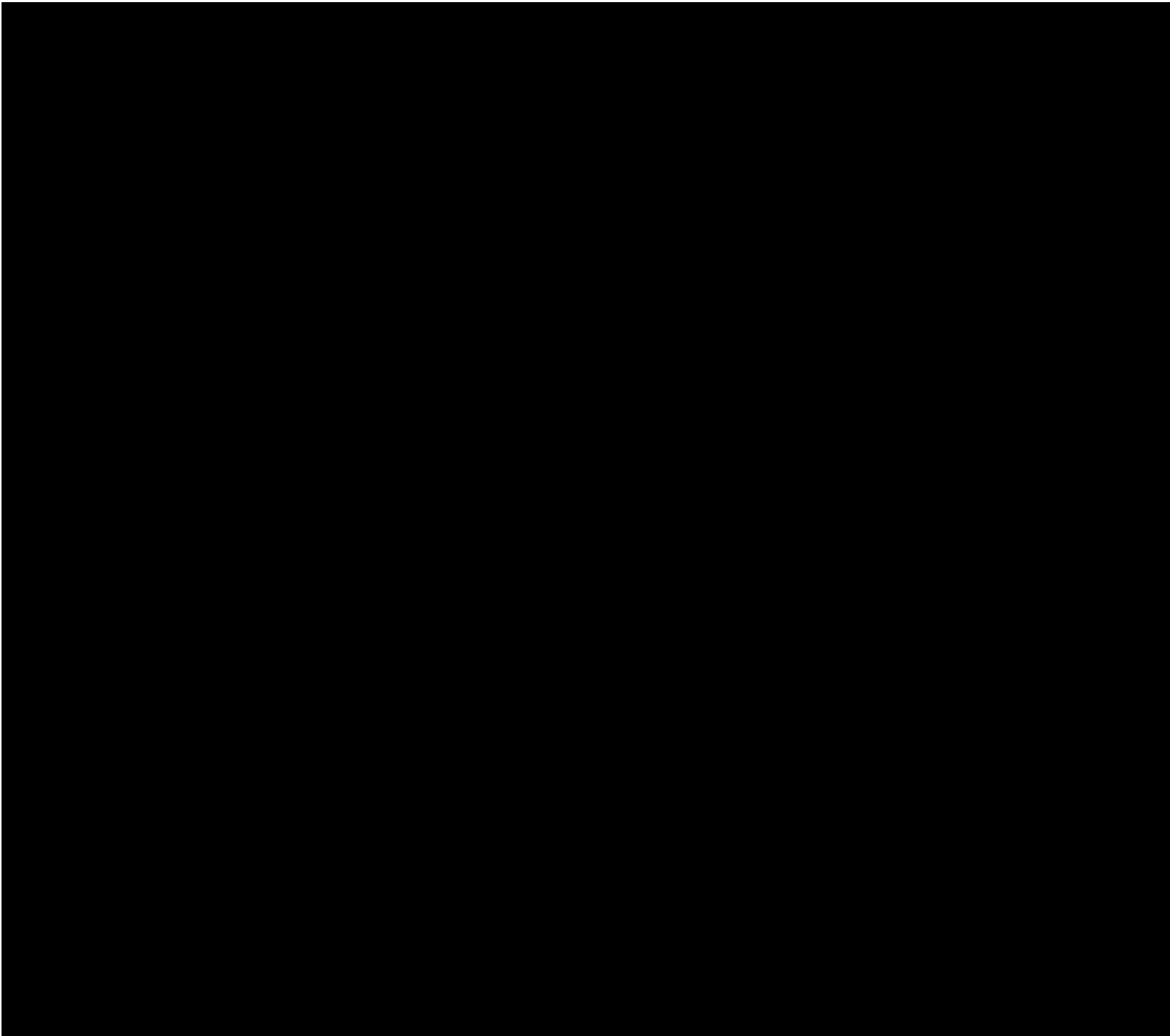
When we met a few weeks back in Cincinnati it sounded like you guys were looking to add another contractor to help with all of the back log. Is that still moving forward? I appreciate your help with these Jeremy and would be happy to jump on a call to talk through any of these.

Thanks

Total Poles Applications	78			
	Quantity	Average Days-Current	Average Months-Current	Note
Make Ready Complete	10	201.00	6.70	
Waiting on Make Ready	1	146	4.87	
Invoices Paid	4	230	7.67	
Invoice Rec'd	1	269	8.97	
Waiting on Invoice	24	212	7.07	numb
Make Ready Quote Rec'd	7	177	5.90	
Waiting on Make Ready Estimate	31	174	5.80	Over

Kevin Stelmach
MetroNet | General Manager
3701 Communications Way | Evansville, IN 47715
Office: 812.759.7958
www.MetronetInc.com





From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, November 29, 2017 5:01 PM
To: Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Subject: RE: Pole Attachment

Michelle: Thanks again for sending the pole attachment agreements over. What is the process if we want to use the tariff instead of enter into the pole attachment agreement? Do we just sign a short form agreement? Is there than any regulatory approval needed?

Thanks,
Anita

Anita Larson

Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: Mclaughlin, Michelle M [<mailto:Michelle.McLaughlin@windstream.com>]
Sent: Wednesday, November 22, 2017 10:10 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Good morning, Anita-
Lexington is in the Windstream Kentucky East territory. I also prepared a Windstream Kentucky West agreement in case you wanted all of Kentucky covered. Also attached is our application in excel format for easier use. Please contact me after your review. I look forward to working with you as well.

Michelle
Analyst II
319-790-6910

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, November 22, 2017 9:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Dan: Thanks for the quick response!

Michelle: Would you please email me Windstream's pole attachment agreement for Kentucky? I appreciate it. I look forward to working with you.

Thanks again!
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, November 22, 2017 9:24 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Anita:

Good to hear from you. The person that you want to speak with is Michelle Mclaughlin. I have copied her on this response. She negotiates and manages our pole agreements and can provide you with our template for Kentucky.

I assume that you are asking so that MetroNet can begin the process of negotiating a pole attachment agreement with us in connection with its expansion into Lexington. Congratulations on the announcement.

Hope you have a great Thanksgiving!

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, November 22, 2017 9:08 AM
To: King, Daniel <Daniel.King@windstream.com>
Subject: Pole Attachment

Dan: Do you know whom I would reach out to in order to get Windstream's pole attachment agreement for Kentucky?

Hope you have a great holiday!

Thanks!
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

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CATV POLE ATTACHMENT TARIFF

P.S.C. KY NO. 11

WINDSTREAM KENTUCKY EAST, LLC

Original Title Page 1

REGULATIONS, RATES AND CHARGES

Applying to CATV Pole Attachments within the operating territory of Windstream Kentucky East, LLC in the State of Kentucky.

Date of Issue: July 7, 2016

Date Effective: July 17, 2016

Issued By: Chris Cranford

Title: Product Manager – Pricing & Tariffs

By Authority of Order of the Public Service Commission

In Case No. _____ Dated: _____

WIN3717

CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

**P.S.C.KY. No. 11
Original Table of Contents Page 1**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

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Date of Issue: July 7, 2016

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By Authority of Order of the Public Service Commission

In Case No. _____ Dated: _____

CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

**P.S.C. KY. No. 11
Original Page 1**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.1 Application of Tariff

This tariff contains regulations and charges applicable to the provision of attachment space for cable television facilities on poles of the Telephone Company, and the provision of cable duct space for such facilities in underground conduits of the Company.

The terms and conditions contained herein apply where the CATV operator, as a customer of the Company, proposes to install coaxial or other types of television distribution cables, amplifiers and drop wires, wires and appliances together with associated cable messengers, anchors and other appurtenances (hereinafter sometimes collectively called the "equipment") and desires to attach such equipment to poles of the Company, and/or install such equipment in cable ducts of the Company.

S1.2 Definitions

Poles - All references to "poles" of the Company shall mean poles which are either solely owned by the Company, are jointly owned by the Company and another, or are owned by another who has granted the Company exclusive use and control of space upon its poles.

Pole Attachment - This term means any attachment by a CATV firm to a pole owned or controlled by the Company.

Cable Duct Space - This term shall mean individual cable ducts within a multiple-duct conduit system owned by the Company.

Equipment - The "equipment" referred to herein consist of coaxial or other types of television cables, amplifiers and drop wires, wires and appliances together with associated cable messengers, anchors and other appurtenances used in the provision of CATV service.

Joint User - All references herein to "joint user" shall mean a utility company or municipality which, together with the Company, jointly provides poles for common use in the provision of service of the respective entities, and shall also include a utility company or municipality which, together with the Company, owns a percentage of a pole, or which owns a pole upon which the Company has obtained exclusive use and control of specified space.

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Title: Product Manager – Pricing & Tariffs

By Authority of Order of the Public Service Commission

In Case No. _____ Dated: _____

CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

**P.S.C. KY. No. 11
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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.2 Definitions (Continued)

Cable Television Company or Operator (CATV) - All references herein to "CATV Company and/or Operator" shall mean a company which provides CATV service.

CATV Service - All references herein to "CATV service" shall mean the transmission, by means of coaxial or other types of distribution cables, of television audio and video signals from a central point within an exchange of the Company to subscribers of a CATV company within such exchange.

S1.3 Scope

Subject to the terms and conditions contained in this tariff, the Company will provide CATV pole attachment and cable duct space and permit a CATV operator, for the purpose of furnishing CATV service, to install its equipment upon or within such of the Company's poles and conduits as are available or can be made available, except for safety reasons.

References herein to CATV equipment placed in the Company's cable ducts shall mean only cables and wires. No right to place amplifiers, power supplies or other related equipment in manholes or cable ducts of the Company is conferred by this tariff.

The CATV company shall secure from the proper franchising authority, a franchise to erect and maintain its equipment within public streets, highways and other thoroughfare, provided such franchising authority exists, and shall secure any and all consents, permits, licenses, easements or rights-of-way that may be legally required for its operation hereunder. The CATV company shall provide to the Company documentation evidencing that all such franchises, consents, permits, licenses, easements and rights-of-way have been obtained. The CATV company shall additionally provide the Company a map depicting the franchised area in which pole attachments and cable duct arrangements may be applied for by the CATV company.

The CATV company shall assist in, and bear the expense of securing any additional consents, permits, or licenses that may be required by the Company because of CATV pole attachments or cable duct usage.

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WINDSTREAM KENTUCKY EAST, LLC

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.3 Scope (Continued)

The franchises, consents, permits, licenses, easements and rights-of-way of the Company are for its own facilities and the provision of its other services. No rights in such franchises, consents, permits, licenses, easements or rights-of-way are conferred upon any CATV company hereunder.

S1.4 Application for Permission to Install

At least forty-five (45) days prior to the time the CATV company desires to attach its equipment to any of the Company's poles, or to install any such equipment within a cable duct of the Company, the CATV operator shall make written application on the form prescribed to the Company. The Company shall in turn, notify the CATV company in writing of its permission to allow the installation.

Where the application for attachment involves joint-use poles, the CATV operator shall so indicate in its application, and provide a copy thereof to the joint user. Permission to attach to joint-use poles shall be subject to the Company obtaining approval from such joint user when necessary.

Upon notification by the Company of its permission for pole or cable duct space to be used by the CATV company, the CATV company shall have the right, subject to the SPECIFICATIONS contained herein, to install, maintain and use its equipment described in its application, upon the poles or in the cable ducts identified in its application. The CATV company shall complete each installation within a reasonable and mutually agreeable time frame; provided, however, that before commencing any such installation, the CATV company shall notify the Company of the time when it proposes to do such work sufficiently in advance so that the Company may arrange to have any necessary representative present when such work is performed. In the event the presence of a Company representative is required, the CATV company shall reimburse the Company for the cost and expense of such.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.4 Application for Permission to Install (Continued)

Where costs are involved in the rearrangement of the Company's facilities to accommodate the CATV company's equipment, the Company shall notify the CATV company, in writing, of the changes and rearrangements required and the cost for performing such. Approval of the application by the Company is subject to receiving authorization from the CATV company to make changes and rearrangements detailed by the Company, at the CATV company's expense.

The CATV company shall not have the right to place, nor shall it place, any additional equipment upon any pole or in any cable duct without first making application to do so, as provided for in this tariff; nor shall the CATV company change the position of any equipment attached to any such pole or installed in any cable duct without the Company's prior written approval. The Company will not refuse a CATV company permission to install or rearrange CATV equipment if pole attachment or conduit space is available or can be made available, except for safety reasons. The provisions of this paragraph shall not restrict the attachment of television drops to television crossarms or television cable messenger. Unauthorized attachments or installation in cable duct shall be subject to penalty and/or special "make-ready" charges set forth in this tariff.

S1.5 Attachment Specifications

The CATV company, at its own cost and expense, shall construct, maintain and replace its attachments on the Company's poles in accordance with (1) such requirements and specifications as the Company shall prescribe and have on file with the Commission, (2) EEI Publication M12 entitled "Specifications for the Construction and Maintenance of Jointly-Used Wood Pole Lines Carrying Supply and Communication Circuits", (3) the requirements and specifications of the National Electrical Safety Code, 1981 Edition, and any amendments or revisions of said specifications or code, and (4) in compliance with any rules or orders now in effect or that hereafter may be issued by the Public Service Commission of Kentucky or other authority having jurisdiction. The CATV company shall comply, at its sole risk and expense, with changes and revisions in the above specifications and requirements.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment

The exact location of the CATV company's attachments on poles and installation in cable ducts shall be determined by the Company in its sole discretion after a joint survey to be made, at such times as shall be mutually agreed upon, by representatives of the telephone company and the CATV company. The Company may make periodic inspections as conditions may warrant. Such inspections shall not operate to relieve the CATV company of any responsibility, obligation, or liability assumed under this tariff. When substandard installations are found which are created by the CATV operator, the Company shall give notice of such to the CATV company, and the CATV company shall remedy such conditions within a reasonable time. In the event the CATV company fails to remedy the condition within the agreed upon time, the Company may act to remedy it with the cost of such to be paid by the CATV company.

Whenever CATV equipment is to be installed, rearranged or removed on or from Company poles, such work will normally be performed by the CATV company at its expense. In such cases a Company representative may be required to observe the work, at the expense of the CATV company. Where consented to by the Company, the CATV company may elect to have such installation, rearrangement or removal performed by the Company; however, the CATV company will furnish all materials and equipment and will reimburse the Company for its costs in performing the work activity.

Whenever CATV equipment is to be installed, rearranged or removed in cable ducts, such work will usually be performed by the Company, at the CATV company's expense. If the CATV elects to perform the work activity, a Company representative may be required to observe the work at the expense of the CATV company. Work performed by the Company or the CATV firm, shall be performed in accordance with the Company's established practices, and all materials and equipment shall be supplied by the CATV company.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment (Continued)

Where the CATV company's equipment can be accommodated on Company poles or in Company cable ducts by rearranging or changing the Company's facilities, the CATV company shall pay the Company in advance the cost of making such rearrangements or changes. Strengthening of poles (guying) required to accommodate the attachments of the CATV company and the bonding of the CATV's strand to that of the Company shall be performed by the CATV company at its sole risk and expense. Such work may be performed by the Company when reasonable cause therefore exists, and the CATV company shall pay the Company in advance the cost of all such work.

After initial attachment, when the Company subsequently requires a change in its poles, attachments thereto or its conduit system for reasons unrelated to CATV operations, the CATV company shall be given reasonable notice of the changes required and sufficient time to accomplish the CATV related change. If the CATV operator is unable or unwilling to meet the Company's time schedule for changes in attachments, the Company may do the work and charge the CATV company its reasonable costs for performing the change of CATV equipment. In cases of emergency, the Company may, at the CATV company's expense, arrange to relocate or replace the facilities attached to Company poles by the CATV operator, transfer them to substituted poles or perform any other work in connection with said facilities that may be required in the maintenance, replacement, removal, or relocation of said poles, the facilities thereon or the equipment which may be placed thereon.

All required maintenance of CATV equipment shall be performed by the CATV operator. No entry shall be made into any facility housing or cable ducts without the prior written permission of the Company. The Company reserves the right to require the presence of its representative at the time of any such entry, with the cost thereof to be reimbursed by the CATV company. An estimate of such cost shall be furnished at the time the Company gives its written permission for entry.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment (Continued)

All tree trimming required on account of CATV company equipment shall be done by the CATV operator at its sole risk and expense and in a manner satisfactory to the Company.

The CATV company shall, at its sole risk and expense, maintain all of its equipment on Company poles or in Company cable ducts in safe condition and in thorough repair.

Nothing herein contained shall give to the CATV company the right to place a crossarm on any Company pole. If a crossarm is required to accommodate the facilities of the CATV company, the CATV company shall state the reasons in its application for attachment.

Written consent of the Company must be obtained by the CATV company prior to any additions to, or changes in the location of its attachments on poles or equipment in cable ducts, except in cases of emergency when oral permission has been obtained from the Company and subsequently confirmed in writing.

If the CATV company should require the location of its equipment upon any public thoroughfare or other public or private property in the conduct of its business and the Company does not have pole facilities so located to fulfill CATV requirements and has no immediate need for such for the Company's own use, the Company will notify the CATV operator whether the Company is willing to place such pole facilities. Special rates shall be agreed to by the CATV company prior to the Company's placement of such pole facilities, and the rates specified herein shall not apply. The special rates shall be based upon the total use of the pole facilities by the CATV company. In the event such pole facilities are subsequently used by the Company for the provision of its other services, the special rates shall no longer apply, and the rates specified in this tariff shall apply.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment (Continued)

Whenever, pursuant to this tariff, the CATV company shall be required to remove its equipment from any pole, such removal shall be made within a reasonable time unless safety considerations require immediate action. Upon failure of the CATV company to remove such equipment, the Company may make the removal and charge the CATV company all associated costs.

Whenever, pursuant to the tariff, CATV equipment in cable ducts shall be required to be removed, relocated or replaced, such work will usually be performed by the Company, after written notice to the CATV company, at the CATV company's expense. If the CATV company elects to perform the work, a Company representative may be required to observe the work at the expense of the CATV company. Any CATV equipment required for such work performed by the Company or the CATV firm, shall be supplied by the CATV company.

The CATV company shall not interset poles or locate guys or other facilities in pole lines of the Company, except where the CATV company has appropriate right-of-way and such will not inhibit access to poles and facilities of the Company or cause a safety hazard.

S1.7 Cost of Pole Replacements

Whenever the CATV company applies for permission to attach to a pole that is considered by the telephone company to be insufficient in height or strength for accommodation of CATV attachments, the Company shall notify the CATV operator of such fact and of the estimated cost to the CATV company of replacing such pole with a pole which will accommodate the attachments of the CATV company and the telephone company. Within thirty (30) days of such notification, the CATV company shall either notify the Company (1) of its approval of such replacement or (2) of its cancellation of the application with respect to such pole.

In the event of CATV's approval of such replacement, the Company shall replace the pole and the CATV operator shall pay to the Company in advance the charges computed as follows:

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.7 Cost of Pole Replacements (Continued)

- (1) The total cost of the new pole, the removal of the old pole, the transferring of the Company's attachments from the old to the new pole and such other costs, if any, necessitated by CATV requirements, less the total of the following: accrued depreciation on the old pole, salvage, if any, and the cost of such portion of the new pole, if any, which represents space reserved for the use of the Company greater than that provided for them on the old pole and appropriate contribution by any other company attached thereto.

S1.8 Rights of Way and Legal Authority

Upon application for attachment or use of cable ducts, the CATV company shall submit evidence satisfactory to the Company of its authority to erect and maintain its equipment within public streets, highways, and other thoroughfares and shall secure any necessary franchise, license, permit, consent, easement or rights-of-way from Federal, State or municipal authorities or owners of property now or hereafter required to construct and maintain such equipment at the location of facilities of the Company which it desires to use. In the event any such franchise, license, permit, consent, easement or rights-of-way is revoked or is thereafter denied to the CATV company for any reason, permission to attach to Company poles or to use Company cable ducts so affected shall immediately terminate, the CATV company shall forthwith remove its equipment from Company facilities.

Upon notice from the telephone company to the CATV company that the removal or cessation of the use of any pole or cable duct has been requested or directed by Federal, State or municipal authorities, or property owners, permission to attach to such pole or to use such cable duct shall immediately terminate and the CATV company shall forthwith remove its equipment therefrom.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.9 Protection Against Claims for Libel and Slander, Copyright, and Patent Infringement

The CATV company shall indemnify, protect, and hold harmless the Company from and against any and all claims for libel and slander, copyright and/or patent infringement arising by reason of attachment of CATV equipment to Company poles or installation of CATV equipment in Company cable ducts, pursuant to this tariff.

S1.10 Limitations

No use, however extended, of the Company's poles or cable ducts under this tariff shall create or vest in the CATV company any ownership or property right in said poles or ducts. Nothing herein contained shall be construed to compel the Company to maintain any of its facilities for a period longer than that demanded by its other service requirements.

The Company reserves to itself, its successors and assigns the right to maintain its poles and conduit and to locate and operate its facilities in such manner as will best enable it to fulfill its other public service requirements. Except where caused by its own negligence the Company shall not be liable for any interruption to the service of the CATV company or for any interference with the operation of the equipment of the CATV company.

The Company reserves the right to provide pole attachment and cable duct space to more than one CATV company and to make such space available to other entities. This tariff shall not limit the rights and privileges previously granted to others to use any poles or cable ducts covered by this tariff, and the privileges provided by this tariff shall at all times be subject to such previously granted rights.

Failure to enforce or insist upon compliance with any of the terms or conditions of this tariff shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in effect.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.10 Limitations (Continued)

The CATV company shall not assign, transfer or sublet any rights to make pole attachments or utilize cable ducts hereunder without the prior written consent of the Company; except that nothing contained herein shall be construed as depriving a CATV company of its property or the ability to dispose of its property in any manner it deems reasonable.

S1.11 Indemnity and Insurance

The CATV company shall indemnify, protect, and hold harmless the Company and other joint-users of said poles and conduit system from and against any and all loss, costs, claims, demands, damage and/or expense arising out of any demand, claim, suit or judgment for damages to property and injury to or death of persons, including the officers, agents, and employees of the CATV company, the Company and any joint user, including payment made under any Workmen's Compensation Law or under any plan for employees' disability and death benefits, which may arise out of or be caused by the installation, maintenance, presence, use or removal of said equipment or by the proximity of CATV equipment to the cables, wires, apparatus and appliances of the Company or any joint user, or arising out of any act, omission or negligence or alleged act, omission or negligence of the CATV operator or the joint negligence of the CATV operator and the Company and/or any joint users; provided, that the obligation of the CATV company under this paragraph does not include the indemnification of the Company or any joint user from or against the sole or joint negligence of the Company or any joint user.

The CATV company shall maintain in full force and effect the following insurance policies or bond in lieu thereof providing an equivalent protection: (1) Workers' Compensation and Occupational Disease covering the CATV company's full liability under the Workers' Compensation Laws of the Commonwealth of Kentucky. This shall include Employer's Liability insurance in the amount of \$100,000. (2) Comprehensive General Liability insurance, in the amounts of \$1,000,000 Combined Single Limits or \$1,000,000 each occurrence, and \$1,000,000 aggregate for any accident resulting in

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.11 Indemnity and Insurance

bodily injuries to or the death of one or more persons and the consequential damages arising therefrom together with Property Damage Liability in the amount of \$500,000 each occurrence, with an aggregate total limit of \$500,000.

All policies of insurance shall contain written endorsements to the effect that the amount of coverage of the insurance provided thereby will not be reduced or terminated without thirty (30) days written notice first being given to the Company. Certificates of insurance, incorporating the above described endorsement, shall be delivered to a designated officer of the Company and shall be approved by the Company before the CATV firm is permitted to perform any work authorized pursuant to this tariff. Failure of the CATV company to provide notice of renewals, changes in carrier, or a reduction in or termination of insurance coverage will be just cause for the Company to terminate the CATV company's right to continue its pole attachments and/or use of cable ducts. If renewal premiums are not paid by the CATV company prior to said 30-day notice, the Company shall have the right to pay said premiums and be reimbursed by the CATV company upon demand.

The CATV operator shall promptly notify the Company of all claims and potential claims relating to damage to property or injury to or death of persons arising or alleged to have arisen in any manner by or associated with, directly or indirectly, the presence or use of the CATV company's equipment upon or within any facility of the Company.

The CATV company shall exercise special precautions to avoid damage to facilities of the Company on said poles and conduit and hereby assumes all responsibility for any and all loss for such damage. The CATV company shall make an immediate report to the telephone company of the occurrence of any such damage and shall reimburse the Company for the expense incurred in making repairs necessitated thereby.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.12 Surety

The CATV company shall furnish a bond for each individual CATV system utilizing pole attachments or cable ducts under this tariff to guarantee the payment of any sum which may become due to the Company for rental, penalty, and make-ready charges and work performed by the Company, pursuant to this tariff, for the benefit of the CATV company or as a result of default or forfeiture by the CATV company. The amount of such bond shall be based upon the following:

- (1) For attachments to 500 poles or less, a bond of \$5,000 shall be furnished, except as provided in (4) below.
- (2) For attachments to poles in excess of 500, further surety in the amount of \$5,000 for each additional 500 poles, or any increment thereof, shall be furnished except as provided in (4) below.
- (3) Where cable ducts are provided, further surety in the amount of \$10,000 shall be furnished, except as provided in (4) below.
- (4) After one year following the completion of construction of an individual CATV system and its placement into operation, the CATV operator may request that the required amount of bond be reduced. Upon the Company's receipt of satisfactory evidence that all mechanics, workmen and material men who furnished services, labor or materials in the construction of such CATV system, and all taxing authorities, have been paid all amounts due them, the Company will reduce the amount of bond required to the following:
 - (a) For attachments to 500 poles or less, a bond of \$2,000 shall be furnished.
 - (b) For attachments to poles in excess of 500, further surety in the amount of \$2,000 for each 500 poles, or any increment thereof, shall be furnished.
 - (c) Where cable ducts are provided, further surety in the amount of \$5,000 shall be furnished.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.13 Payment of Bills

All amounts payable by the CATV company to the Company under the provision of this tariff shall, unless otherwise specified, be payable within thirty (30) days after presentation of bills. Non-payment of any such amounts when due shall constitute grounds for termination of the pole attachment and cable duct usage rights under this tariff.

S1.14 Termination of Attachments and Cable Duct Usage

If the CATV company shall fail to comply with any of the provisions of this tariff, including compliance with the specifications previously referred to, the maintenance of required insurance coverage and surety bond requirements, and the timely payment of any amounts due, and shall fail for thirty (30) days after written notice from the Company to correct such non-compliance, the Company, at its option, may terminate the CATV company's right to continue any or all use of poles or cable ducts provided under this tariff and may act to remove the CATV equipment at the CATV company's expense.

Upon valid objection being made by or on behalf of any governmental authority properly asserting jurisdiction, the Company may without notice, or where circumstances permit, upon five (5) days written notice to the CATV company, terminate the provision of pole attachment and/or cable duct space as provided in this tariff.

The CATV company may at any time remove its equipment attached to any pole or poles of the Company and shall immediately give the Company written notice of such removal. The CATV company may at any time request the removal of its equipment in the cable duct of the Company. Removal of CATV equipment in cable ducts will usually be performed by the Company, at the CATV company's expense. If the CATV company elects to perform the work, a Company representative may be required to observe the removal at the expense of the CATV company. Removal work performed by the CATV company is to be made within a reasonable time, unless safety conditions require immediate action.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.15 Notices

Any notice required or authorized by this tariff to be given by the Company or the CATV company to the other party shall be deemed to have been fully given when made in writing and deposited in the United States mail, postage prepaid, and addressed to such other party's principal business address last furnished by such party.

S1.16 Rates

The CATV Company shall pay to the Company in advance the rates specified below. The Company shall render billing to the CATV Company on at least a quarterly basis. The Company will bill for CATV pole attachments or conduit usage from the date of CATV installation or from the date that space is reserved for CATV installation at an unspecified future time.

	<u>Monthly Rate</u>
Per 2-User Pole	\$ 1.01
Per 3-User Pole	.47
Per linear foot of cable duct space occupied	.07

S1.17 Penalty Charges

Where pole attachments have been made without respect of authorization from the Company, a penalty charge of twice the amount of the annual rate shall apply, in lieu of the annual rate, from the date of the last previous physical inventory of pole attachments or inspection required pursuant to the rules of the Kentucky Public Service Commission, whichever is most recent. Additionally, a special "make-ready" charge, equal to twice the amounts which would have been due and applicable if the attachment had been properly authorized, shall apply.

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POLE AND ANCHOR ATTACHMENT TARIFF

POLE AND ANCHOR ATTACHMENT TARIFF

P.S.C. KY NO. 7

WINDSTREAM KENTUCKY WEST, LLC

Original Title Page 1

REGULATIONS, RATES AND CHARGES

Applying to Pole and Anchor Attachments within the operating territory of Windstream Kentucky West, LLC in the State of Kentucky.

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POLE AND ANCHOR ATTACHMENT TARIFF

Windstream Kentucky West, LLC

P.S.C. No. 7

Original Sheet 1

1. POLE AND ANCHOR ATTACHMENTS

1.1 Regulations

These regulations apply to attachments to poles and anchors within the operating territory of Windstream Kentucky West, LLC in the State of Kentucky.

A. Definitions of Terms

Anchor - an assembly (rod and fixed object or plate owned by the Company) designed to resist the pull of a guy strand, for which the Company is responsible for authorizing the attachment of the customer's cable television facilities.

Anchor Attachment - a guy strand attached to an anchor.

CATV - Community Antenna Television.

Company (the Company) - Windstream Kentucky, Inc.

Customer - the person, firm, corporation or other legal entity authorized by the Company to attach its CATV facilities to poles and anchors.

Customer's CATV Facilities - all facilities, including but not limited to cables, equipment and associated hardware, owned and utilized by the customer for distribution or rebroadcast of television signals to end users over a co-axial wireline distribution system attached to a pole or anchor.

Pole - a pole owned by the Company or a pole owned by others for which the Company has the right to permit others to attach in the communications space.

Pole Attachment - any item of the customer's CATV system facilities affixed to a pole.

B. Undertaking of the Company

1. Scope

Subject to the provisions of this tariff, the Company will authorize the attachment of a customer's CATV facilities to a pole or anchor for lawful CATV purposes.

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POLE AND ANCHOR ATTACHMENT TARIFF

Windstream Kentucky West, LLC

P.S.C. No. 7

Original Sheet 2

1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

B. Undertaking of the Company (Continued)

2) Limitations

No use, however extended, of a pole or anchor or payment of any charges required under this tariff shall create or vest in the customer any easements of any ownership or property rights of any nature in such pole or anchor.

Nothing contained in this tariff shall be construed to compel the Company to construct, reconstruct, retain, extend, repair, place, replace or maintain a pole, anchor or other facilities for use by a customer that is not needed for the Company's own service requirements, except where the customer agrees to reimburse the Company for the costs incurred in making such additions or repairs.

Nothing contained in this tariff shall be construed as a limitation, restriction or prohibition against the Company with respect to any agreement and arrangement which the Company has heretofore entered into, or may in the future enter into, with others not covered by this tariff regarding the poles or anchors covered by this tariff. The rights of the customer shall at all times be subject to any such existing and future agreement or arrangement.

3) Liability and Damages

The Company reserves to itself, its successors and assigns, the right to maintain its poles and to operate its facilities thereon in such manner as will best enable it to fulfill its own service requirements. The Company shall not be liable to a customer for any interruption to service of the customer or for interference with the operation of the cables, equipment and facilities of the customer arising in any manner, except as a result of the Company's sole negligence, out of the use of the Company's poles.

4) Termination of Authorizations

a) Authorizations for pole and anchor attachments granted under the provisions of this tariff may be terminated by the Company if:

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

B. Undertaking of the Company (Continued)

4) Termination of Authorizations ((Continued))

a) (Continued)

the customer's insurance or bonding carrier shall at any time notify the Company that the policies of insurance or bonds, as required by Section 1.1.C.2) following, will be canceled or, changed so that those requirements will no longer be satisfied; or

any authorization which may be required by any governmental or private authority for the construction, operation and maintenance of the customer's CATV facilities is denied or revoked; or

the customer's CATV facilities are used or maintained in violation of any law or in aid of any unlawful act or undertaking; or

the customer ceases to have authority to construct and operate its CATV facilities on public or private property at the location of a particular pole or anchor covered by an authorization; or

the customer fails to comply with any of the provisions of this tariff or defaults in any of its obligations hereunder; or

the customer ceases to provide its CATV services in the area covered by this tariff.

b) The Company will promptly notify the customer in writing of any condition(s) applicable in 1) preceding. The customer shall take immediate corrective action to eliminate any such condition(s) and shall confirm in writing to the Company within (30) days following receipt of such written notice that the cited condition(s) has ceased or been corrected. If the customer is to discontinue or correct such condition(s) and fails to give the required written confirmation to the Company within the time period required, the Company may immediately terminate the attachment authorization(s) affected by the condition(s).

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

B. Undertaking of the Company (Continued)

5) Notices

All written notices required under this tariff shall be given by posting the same in first class mail.

C. Obligation of the Customer

1) Legal Requirements

The customer shall submit to the Company evidence of the customer's lawful authority to place, maintain and operate its CATV facilities within public streets, highways, and other thoroughfares and shall secure any necessary permits and consents from Federal, State, County, and Municipal authorities and from the owners of property to construct, maintain and operate CATV facilities at the locations of poles of the Company which it uses.

The customer shall at all times observe and comply with the provisions of this tariff and is subject to all laws, ordinances and regulations which in any manner affect the rights and obligations of the Company or the customer, so long as such laws, ordinances or regulations remain in effect.

2) Claims, Damages and Required Insurance

The customer shall exercise special precautions to avoid damaging the Company's cables, equipment and facilities, and those of others occupying the Company's poles and the customer shall assume all responsibility for any and all loss for such damage caused by the customer's, or its agent's, negligence. The customer shall make an immediate report to the Company of the concurrence of any such damage and shall reimburse the respective owners for the expense incurred in making repairs.

The customer shall carry liability insurance, or an indemnity bond to protect the Company and the public from and against any and all claims, demands, actions, judgments, costs, expenses, and liabilities of every kind and nature which may arise or result directly or indirectly, from or by reason of such loss, injury or damage, caused by the joint negligence of the Company and the customer or by the sole negligence of the customer. The

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

C. Obligation of the Customer (Continued)

2) Claims, Damages and Required Insurance (Continued)

amounts of such insurance or bond against liability due to damage to property shall be no less than \$100,000 as to any one accident and \$300,000 aggregate, and against liability due to injury to or death of persons no less than \$300,000 as to any one person and \$500,000 as to any one accident. The customer shall also carry such insurance as will protect it from all claims under any Workmen's Compensation laws in effect that may be applicable to it. All insurance required shall remain in force for as long as the customer's CATV facilities are attached to the Company's poles or anchors and the insurance or bonding company or companies issuing such insurance or bonds shall be approved by the Company. The customer shall submit to the Company certificates by each insurance or bonding company insuring or bonding the customer to the effect that it has insured or bonded the customer for all liabilities of the customer under this tariff and that it will not cancel or change any policy of insurance or bond issued to the customer except after thirty (30) days written notice to the Company.

D. Attachment and Occupancy Applications

Before the customer shall attach to a pole or anchor, the customer shall make written application for and have received written authorization therefore from the Company.

E. Make-Ready Requirements

When an application for attachment to a pole and/or anchor is submitted by a customer, a pre-authorization survey will be required to determine the existing adequacy of the pole and anchor to accommodate the customer's CATV facilities. Utilization of the available capacity of an existing anchor when such utilization does not result in a reduction of the holding capacity below the level normally required by the Company for safety, or other purposes, will be permitted upon agreement by the customer to pay the charges specified in Section 1.2 following. The field inspection portion of the pre-authorization survey, which requires the visual inspection of existing poles and anchors, will be performed by the Company (with optional participation by the joint user and/or the customer). The Company will advise the customer in writing of the estimated charges

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

E. Make-Ready Requirements (Continued)

that will apply for such pre-authorization survey and the make-ready costs to be incurred by the Company. The Company must receive written authorization from the customer before undertaking any portion of the pre-authorization survey or make-ready work.

The administrative processing portion of the pre-authorization survey, which includes the processing of the application, the preparation of the make-ready work orders, the coordination of work requirements and schedules with joint users and other customers will be performed by the Company.

In the event the Company determines that the existing pole or anchor attachments, on any pole to which the customer desires to make attachments, needs rearrangement to support or accommodate the customer's proposed attachments in accordance with the specifications set forth in Section 1.1.F., the Company will indicate on the application the changes necessary to ensure that the customer's proposed attachments are in accordance with Section 1.1.F., and the estimated cost thereof, and return it to the customer. If the customer desires that such changes be made and returns the application marked to so indicate, the Company will make such changes and bill the customer in accordance with the terms of this tariff. The customer shall also be obligated to reimburse the owner or owners of the other facilities or attachments on the Company's poles or anchors, to which the customer wishes to make its attachments, for any expense incurred by it or them in transferring, or rearranging its or their facilities or attachments to accommodate the customer's proposed attachments.

In the event the Company, through its field inspection or other means, determines that the poles or anchors to which the customer wishes to attach its CATV facilities are inadequate to permit the customer's proposed attachments, using the specifications set forth in Section 1.1.F. as a reference, and such inadequacy or lack of sufficient usable space can only be remedied by the replacement of the Company's poles or anchors, or by the addition of more poles or anchors, the Company will notify the customer of the expense of replacing or adding the needed facilities. If asked to do so by the customer, the Company will proceed to replace or add the facilities required to accommodate the customer's proposed attachments. In such case the customer shall be obligated to

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

E. Make-Ready Requirements (Continued)

reimburse the Company for the expenses it incurs in replacing or adding these facilities according to the terms of Section 1.2 of this tariff.

Made-ready work will be performed following receipt by the Company of the required advance payment. The customer shall pay the Company for all make-ready work completed in accordance with the provisions of this tariff and shall also make arrangements with the owners of other facilities attached to such poles or anchors regarding reimbursement for any expense incurred by them in transferring or rearranging their facilities to make such attachment accommodations available. The customer shall not be entitled to reimbursement of any amounts paid to the Company for pole or anchor replacements or for rearrangements of facilities on a pole or anchor by reasons of the use by the Company, joint user, governmental entity or other authorized users of any additional capacity resulting from such replacement or rearrangement.

F. Construction, Maintenance and Removal of Customer Facilities

The customer's cables, equipment and facilities shall be placed and maintained in accordance with the requirements and specifications of this section of this tariff. Unless different standards are specified herein the provisions of the National Electrical Code (1981 edition) and the National Electrical Safety Code (1981 edition), and any amendments thereto or replacements thereof, shall be applicable. Any of the customer's cables, equipment and facilities not in compliance with this section shall be brought into compliance within six months.

The customer shall at its own expense, make and maintain its pole and anchor attachments in a safe condition and in thorough repair, and in a manner acceptable to the Company, and so as not to conflict with the use of said poles by the Company or by other authorized users of said poles or anchors or interfere with other facilities thereon or which may from time to time be placed thereon. The customer shall, at its own expense, upon two (2) days advance notice from the Company, relocate and replace its facilities placed on said poles or anchors, or transfer them to substituted poles or anchors, or perform any other work in connection with said facilities that may be required by the Company; provided, however, that in cases of emergency, the Company may arrange to relocate or replace the

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

attachment placed on said poles or anchors by the customer, transfer them to substituted poles or anchors, or perform any other work in connection with said facilities that may be required in the maintenance, replacement, removal or relocation of said poles or anchors, or of the facilities thereon, or which may be placed thereon, or for the service needs of the Company, and the customer shall reimburse the Company for the expense thereby incurred. Attachments of the customer to poles or anchors of the Company as mentioned herein shall be understood to include attachments of the customer in space reserved for the Company, or space which the Company has the right to use, on poles of other companies, with which the Company now has or may hereafter have agreements for joint use and occupancy; and the use of such space by the customer shall be subject to the terms and conditions of the agreements between the Company and said other companies.

1) Attachment to Poles and Anchors

This section is an integral part of this tariff and contains certain minimum requirements and specifications governing the attachment of cables, equipment and facilities of the customer to poles and anchors owned by the Company.

a) General

The customer is responsible for the proper design, construction and maintenance of its attachments. Attachments generally will be limited to strand-supported cable, service drops, terminals and necessary appurtenances deemed by the Company to be suitable for pole or anchor mounting.

Any rearrangements of the Company's facilities or replacement of poles required to accommodate the customer's attachments shall be done by the Company or a contractor authorized by the Company.

The fees and charges specified in Section 1.2 shall be applicable to all attachments made by the customer, without regard to the methods of attachment used.

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

a) General (Continued)

The customer's attachments shall be plainly identified by appropriate marking satisfactory to the Company.

The customer's workmen shall assure themselves that any pole to be climbed has sufficient strength or is adequately braced or guyed to support the weight of the workmen.

All requirements of the National Electrical Safety Code referred to herein shall mean the 1981 edition of such code, or any later amendment or replacement thereof, and shall include any additional requirements of any applicable Federal, State, County or Municipal code. References to simply the Safety Code, or to N.E.S.C., have the same meaning.

While many of the standards and technical requirements for the Customer's cable, equipment and facilities are set forth herein, the Company reserves the right to specify the type of construction required in situations not otherwise covered in this Tariff. In such cases, the Company will in its discretion furnish the customer written materials which may specify and explain the required construction.

b) Voltage, Power, and Electrical Interference

The customer's attachments shall not use or carry voltages or currents in excess of the limits prescribed for communications conductors by the National Electrical Safety Code. However, all parts of the customer's attachments carrying voltages in excess of 50 volts AC (rms) to ground or 135 volts DC to ground, except for momentary signaling or control voltages, shall be enclosed in an effectively grounded, sheath or shield. All energized parts of the customer's attachments shall be suitably covered to prevent accidental contact by the general public, the customer's workmen or workmen of another customer or utility having facilities on the same pole.

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

b) Voltage, Power, and Electrical Interference (Continued)

The Company shall determine whether the customer's attachments cause or may cause electrical interference with the Company's communications facilities. The customer shall on demand of the Company, correct immediately at the customer's expense any such interference including, if necessary, removal of the attachments causing the interference.

No attachment shall use the earth as the sole conductor for any part of the circuit.

The customer shall not circumvent the Company's corrosion mitigation measures (e.g., short circuit insulating joints).

c) Grounding and Bonding

All power supplies shall be grounded. The neutral side of the power drop shall be continuous and not fused. The neutral line shall also be bonded to the power supply cabinet. The cabinet shall be connected to an earth ground at the pole. In areas where a power utility has a ground wire running down the pole, the cabinet can be connected to it if the power utility permits. When a power utility vertical ground wire is not available, the customer must place a ground rod. All cabinets, housings and metal socket bases on a common pole shall be bonded to each other, to the Company's strand and to the customer's strand.

Where two or more aerial suspension strands are located on the same pole, the suspension strands shall be bonded together. Where the customer has been authorized to attach the bond wire to the Company's strand, the customer is responsible for completing the bond. If the customer is not authorized to attach to the Company's strand, the customer shall attach the bonding wire to its strand and leave a sufficient length of wire to allow the Company to complete the bond. Where the strands of two or more

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

c) Grounding and Bonding (Continued)

customers are to be bonded together, the customer placing the last strand, if authorized to do so by the other customers, shall make both connections. Where such authorization is not granted by the customer owning the existing strand, the customer shall attach the bonding wire to its strand and leave enough wire to permit making a connection to the other strand. In such cases, the customer owning the existing strand shall be responsible for completing the bonding.

Suspension strands at trolley feeders and trolley contact wires located on the same street shall be bonded at the first, last and every intermediate fifth poles until the remaining section between bonds is not more than eight or less than four spans. At other locations, the strands shall be bonded at the first, last and every intermediate tenth poles until the remaining section between bonds is not more than thirteen or less than four spans. Strands shall be bonded at or near the first pole on each side of underground dips or trolley wire crossovers.

Strands attached to the same bolt do not have to be bonded.

Where a customer's strand leaves a pole which carries other strands supporting communications cables, and the customer's strand continues to a pole carrying power facilities but no communication facilities of the Company, the customer's cable shall be:

Bonded to the other communications strands on the pole that it leaves, and

Bonded to an effective ground preferably within two spans but not greater than ten (10) spans, after leaving said pole, and

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

c) Grounding and Bonding (Continued)

Bonded with a No. 6 solid, soft-drawn copper wire. The wire must be attached to the strand with an approved clamp, such as lashing wire clamp, designed for attachment to each specific size of strand involved (for example, Chance Lashing Wire Clamp, Catalog Number 9000, or equivalent).

Strands supporting drop wire shall be bonded to the cable suspension strand.

d) Clearances

The customer's attachments are subject to the same clearances as communications facilities and shall meet all of the pertinent clearance requirements of the Safety Code. Safety Code rules covering the most commonly encountered conditions are listed below.

	NESC 1981 Edition <u>General Rule</u>
Vertical clearance on poles jointly occupied by communication facilities and power facilities	235
Mid-span clearances between communication facilities and power facilities	238
Crossing clearances of facilities carried on different supports	233
Clearances from street light brackets and associated wiring	238
Clearances of conductors from another line	233
Clearances of vertical and lateral conductors from other wires and surfaces on the same support	239

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

d) Clearances (Continued)

NESC 1981 Edition
General Rule

Clearances in any direction from line conductors and supports, and to vertical and lateral conductors, span or guy wires, attached to the same support

235

Vertical clearance of wires above ground, rails or water

232

*Minimum Telephone Co. pole attachment 20 feet above ground.

e) Location and Spacing

The Company shall specify the location of the customer's attachments on each pole, including the location of the customer's riser cables.

The minimum vertical separation between the customer's suspension strand and the Company's suspension strand when located on the same side of the pole shall be twelve (12) inches. Where agreement with the power utility permits the placing of cables on both sides of the pole, the vertical separation between the strands may be reduced if the diagonal separation between strands will be twelve (12) inches or more. Separation between the bolt holes shall in any event be at least four (4) inches. The customer's suspension strand and cable shall be located above the Company's facilities unless the Company permits otherwise.

The minimum separation between the customer's and the Company's suspension strands specified herein also applies between the customer's strand and the suspension strand of another customer, and between two or more strands of the

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

e) Location and Spacing (Continued)

customer; provided, however, that the customer may agree with another customer to reduce the separation between their respective strands. Separation between the bolt holes must in any event be at least four (4) inches.

When the customer's strand is above the Company's strand, the customer's strand-mounted equipment housings and cable drip loops shall be placed at least six inches above the Company's facilities.

Power supply cabinets and other pole-mounted equipment shall not be permitted below the Company's facilities on a pole where any of the following are present:

Underground riser cable or pipe.

Cross-connecting terminal.

Pole-mounted distribution terminal.

Pole-mounted closure.

Apparatus case.

Air dryer.

Other equipment of size that would impair climbing or working space if an additional pole-mounted facility was installed.

The customer shall be required to place all of its attachments, including amplifiers, power supplies, terminals, splitters and taps, so as not to interfere with climbing space, as defined in the National Electrical Safety Code (Rule 236).

Where by mutual agreement with the power utility, attachment of cables to both sides of the pole is permitted, two customers may employ a common through bolt

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

e) Location and Spacing (Continued)

provided one customer accepts, in writing, the responsibility for maintaining the bolt. N.E.S.C. climbing space requirements must be maintained by all parties.

The customer shall not attach its facilities, except the termination of the bond wire when authorized, to the Company's strand or suspension bolt.

Through bolts may not be placed less than 10 inches from the top of the pole.

f) Loading

The customer shall furnish to the Company the details as to the ultimate strength tension at 60° and maximum tension in its suspension strand or conductor under the applicable storm loading specifications in the Code.

The customer shall furnish to the Company details as to the weight and size of its cables, suspension strands and/or conductors, with and without the ice loading, as specified by the National Electrical Safety Code (Rule 251) or appropriate local code for the loading area concerned. N.E.S.C. Rule 250 covers the degree of loading (light, medium, heavy) appropriate in different sections of the country. Where a local code designates a heavier degree of loading than the N.E.S.C., the local requirements shall govern.

The customer may lash its cable to the strand of another customer where this is acceptable to all other customers involved and to the Company. Maximum tension of the customer's strand shall not exceed 60% of the breaking strength under applicable storm loading, as defined by the National Electrical Safety Code (Rule 251). Where local codes designate a heavier degree of loading than the N.E.S.C., the local requirements shall govern.

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

g) Guying and Stepping

Guying will be required on poles where the total unbalanced load, including the tension due to the customer's attachments under the appropriate storm loading prescribed by the National Electrical Safety Code (Rule 251), exceeds 200 pounds unless the pole was designed as an unguyed corner pole and the pole has adequate strength and stability, in the opinion of Licensor, to withstand the additional load.

Guys, when required, shall be of such material and dimensions as to provide adequate strength to withstand the transverse loads specified in the National Electrical Safety Code (Rule 252B), and the longitudinal load assumed in the Code (Rule 252C). Guys on poles which also support power facilities shall be in compliance with the National Electrical Safety Code (Rule 261C). On poles supporting communications facilities only, guying shall be in compliance with Grade C construction requirements of the Code.

Guy guards shall be installed in compliance with N.E.S.C. Rule 282E (Supplement 1).

The customer may attach its guy to the Company's anchor rods where the Company specifically authorizes it in writing.

More than one customer may use a common guy to sustain their combined load.

Guys shall be installed or grounded as specified in the Safety Code (Rules 282 and 283). The customer's guys shall not short circuit the Company's guy insulators.

Material used for guys shall be compatible from a corrosion standpoint with the hardware to which it is attached.

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1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

F. Construction, Maintenance and Removal of Customer Facilities (Continued)

1) Attachment to Poles and Anchors (Continued)

g) Guying and Stepping (Continued)

Where the Company determines that because of the customer's activity on a pole, the pole must be stepped, or if the customer requests that a pole be stepped for the customer's convenience, the Company will have the pole stepped at the customer's expense. The Company will determine the extent, method and manner of stepping required in view of the facilities located on the pole, safety requirements and the hazards of stepping any particular pole.

2) Inspections of Customer's Installations

The Company reserves the right to make periodic inspections of any part of the cable, equipment and facilities of the customer on its poles or anchors and in the vicinity of such cable, equipment and facilities. Inspections will not be made more often than once a year and upon notice to the customer unless, in the Company's judgment such inspections are required for reasons involving safety or are required because of a violation of the terms of this tariff by the customer.

If, upon inspection of the customer's pole or anchor attachments, the Company discovers substandard, incomplete or defective attachments, the customer shall, at its own expense, correct those attachments so identified by the Company. However, if the customer fails to correct such attachments, after having been reasonably notified of their substandard, incomplete or defective condition, the Company may correct these attachments without liability, and the expense of correcting these attachments shall be borne by the customer.

G. Unauthorized Attachment or Occupancy

If any of the customer's CATV facilities shall be found attached to a pole or anchor for which there is no authorization outstanding, the Company, without prejudice to its other rights or remedies under this tariff, including termination of authorization(s), may impose a charge equal to twice the amount of the tariff charges set forth

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In Case No. _____ Dated: _____

POLE AND ANCHOR ATTACHMENT TARIFF

Windstream Kentucky West, LLC

P.S.C. No. 7

Original Sheet 18

1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.1 Regulations (Continued)

G. Unauthorized Attachment or Occupancy (Continued)

herein for such attachment and make-ready work, and require the customer to submit in writing, within (15) days after receipt of written notification from the Company of the unauthorized attachment, a pole or anchor attachment application. If such application is not received by the Company within the specified time period, the customer may be required to remove its unauthorized attachment within (30) days of the final date for submitting the required application, or the Company may at its option remove the customer's facilities without liability, and the expense of such removal shall be borne by the customer.

For the purpose of determining the applicable charge, all unauthorized pole or anchor attachments shall be treated as having existed since the first day following the most recent inspection and twice the amount of the rates specified in Section 1.2 following shall be due and payable forthwith.

H. Termination of Attachments

Upon notice from the Company to the customer that the use of the pole or anchor is not authorized by Federal, State, County or Municipal authorities or private property owners, the customer shall remove its cables, equipment and facilities at once from the affected poles or anchors, or shall make arrangements for the removal of its cable, equipment and facilities at the customer's expense.

The customer may at any time remove its facilities from any of the Company's poles or anchors, but shall immediately give the Company written notice of such removal. In the event the customer's cables, equipment and facilities shall be removed from any pole as provided by this tariff, no attachment, shall again be made to such pole unless the customer shall have first complied with all of the provisions of this tariff as though no such attachment had previously been made.

If the customer shall fail to comply with any of the terms or conditions of this tariff, or default in any of its obligations under this tariff, and fail within thirty (30) days after written notice from the Company to correct such default or noncompliance, the Company may, at its option, require the customer to forthwith remove all of its pole and anchor attachments.

Date of Issue: July 7, 2016

Date Effective: July 17, 2016

Issued By: Chris Cranford

Title: Product Manager – Pricing & Tariffs

By Authority of Order of the Public Service Commission

In Case No. _____ Dated: _____

POLE AND ANCHOR ATTACHMENT TARIFF

Windstream Kentucky West, LLC

P.S.C. No. 7

Original Sheet 19

1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.2 Rates and Charges

A. General

1) Computation

For the purpose of computing the total attachment fees due, the total fee shall be based upon the number of poles or anchors contacted, whether in service or not in service, on the first day of June and the first day of December of each year.

The first advance payment of the annual charge for attachments shall be prorated from the date that the attachment is made to the pole or anchor to the first regular payment date.

"Drop" contacts shall only be cumulatively reported on or before the first day of June and the first day of December for the preceding six (6) months. Applications for "drop" need not be submitted except on the above semi-annual dates.

Upon termination of an attachment, the applicable attachment fee shall be prorated for the period during which the attachment was made to the Company's pole or anchor during the final semi- annual period and shall be credited to the customer; provided, however, that there shall be no proration of an attachment fee if the attachment is terminated as a result of any act or omission of the customer in violation of this tariff.

2) Payment Dates

Attachment fees shall be due and payable semi-annually in advance, on the 30th day of January for the first half of the calendar year and on the 30th day of July for the last half of the calendar year. Failure to pay such fees within 30 days after presentment of the bill therefor or on the specified payment date, whichever is later, shall constitute a failure of the customer to comply with the provisions of this tariff and shall result in termination of authorization as specified in Section 1.1.B.3) of this tariff.

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P.S.C. No. 7

Original Sheet 20

1. POLE AND ANCHOR ATTACHMENTS (Continued)

1.2 Rates and Charges (Continued)

B. Rates

	<u>Semi-Annual Rate</u>
Pole Attachments	
Two-User Poles, per pole	\$3.40
Three-User Poles, per pole	\$2.75
Anchor Attachments	
Two-User Anchors, per anchor	\$4.58
Three-User Anchor, per anchor	\$3.05

C. Other Charges

All charges for rearrangement or removal of the customer's facilities from the Company's poles and anchors, and any other work performed for the customer shall be based upon the full cost and expense to the Company for performing such work. The cost to the Company shall be determined in accordance with the regular and customary methods used by the Company in determining such costs.

The charge for replacement of poles shall include the total cost thereof, including the cost of transferring the Company's facilities from the old to the new poles, less the salvage value of any pole that is replaced.

All bills for such other charges shall be payable upon presentation to the customer, and shall be deemed delinquent if not paid within 30 days after presentation to the customer. Failure of the customer to pay such fees within 30 days after presentment of the bill therefor shall constitute a failure of the customer to comply with the provisions of this tariff and shall result in termination of authorization as specified in section 1.1.B.3) of this tariff.

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Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095

Mobile: 785.331.7296

Email: anita.larson@qservicesco.com

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Cc: Lloyd, James <James.Lloyd@windstream.com>

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319-790-6910

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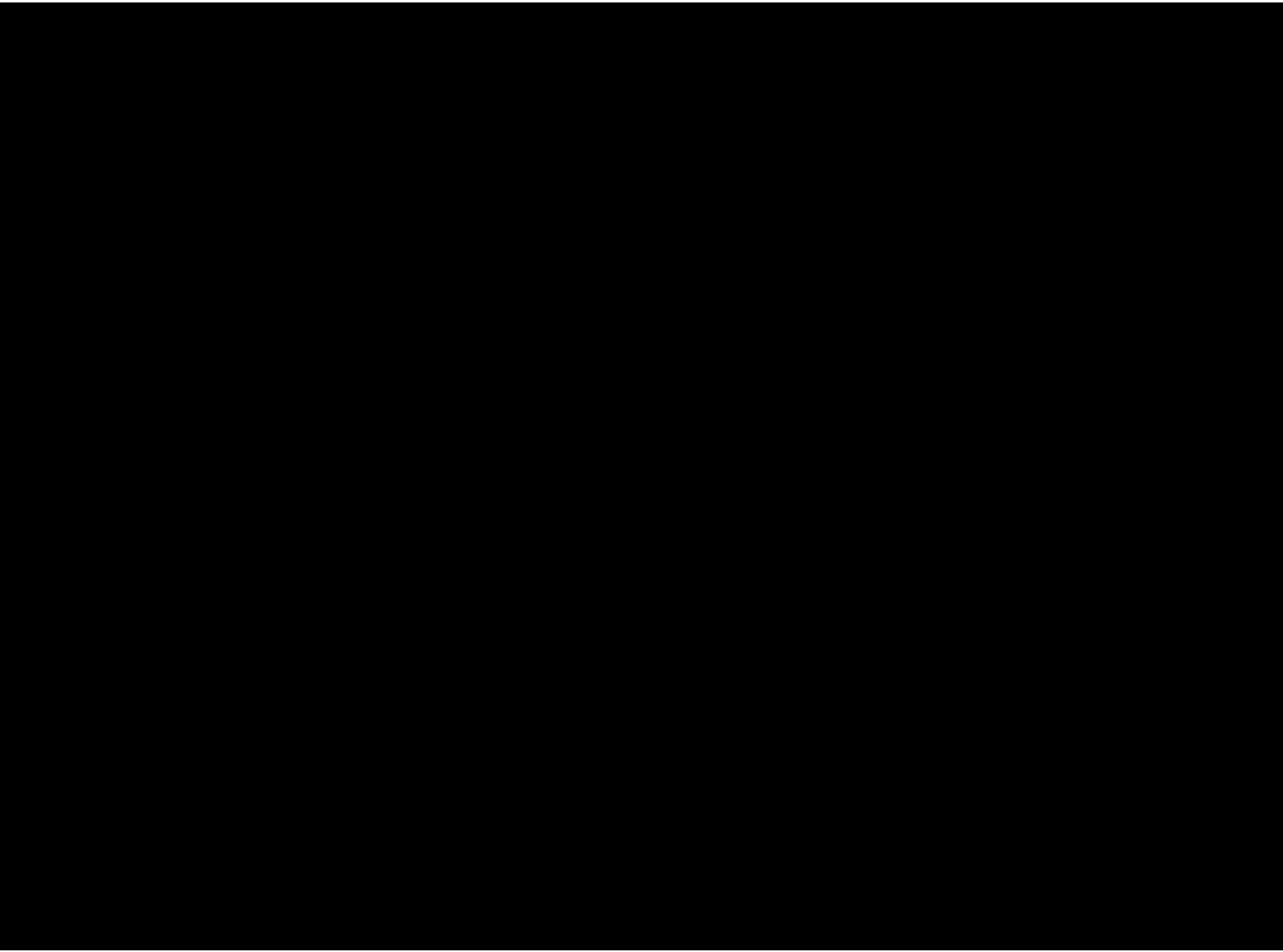
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Sent: Wednesday, November 22, 2017 9:08 AM
To: King, Daniel <Daniel.King@windstream.com>
Subject: Pole Attachment

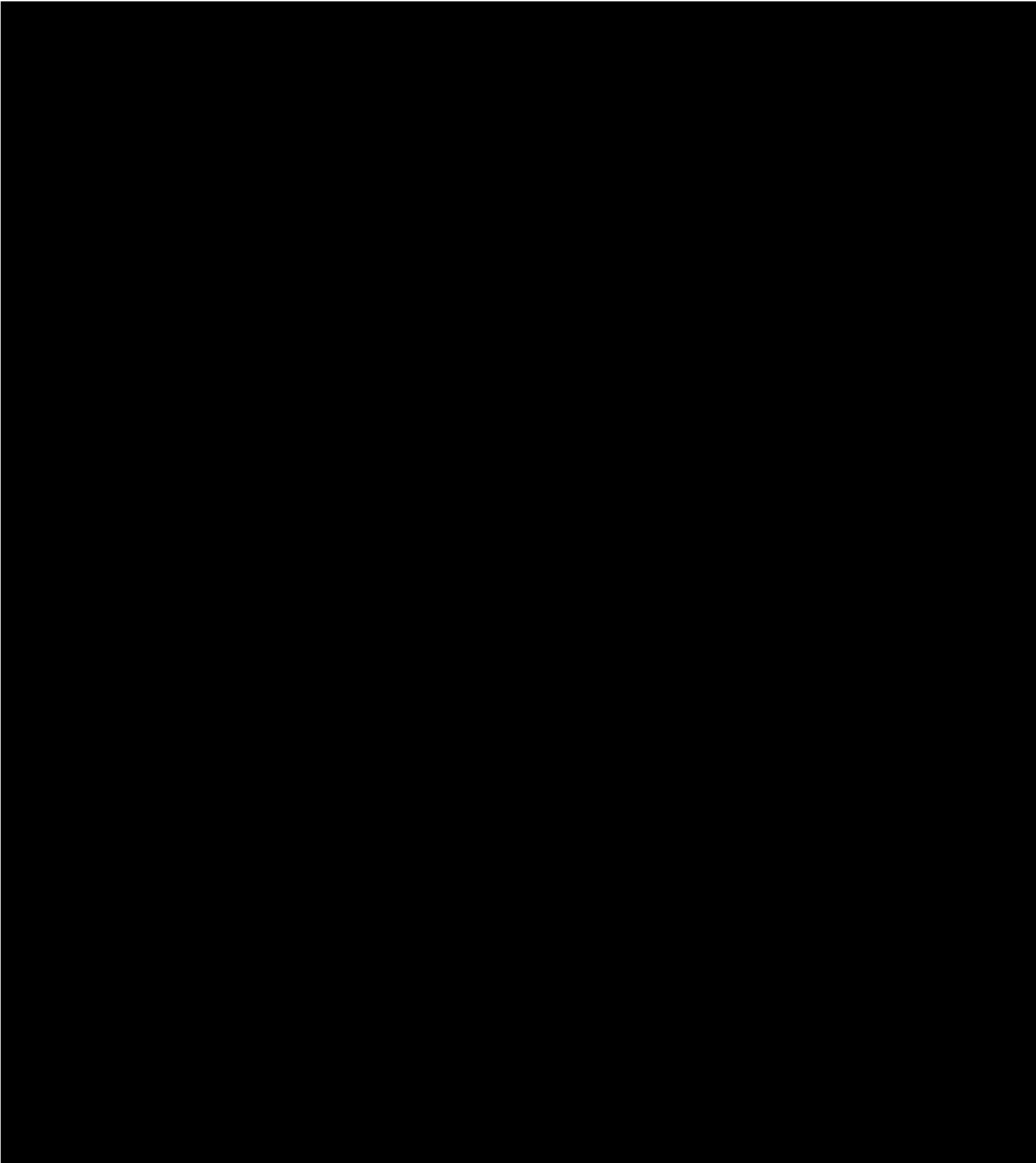
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8837 Bond Street
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Sent: Wednesday, November 29, 2017 5:01 PM

To: Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>

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Cc: Lloyd, James <James.Lloyd@windstream.com>

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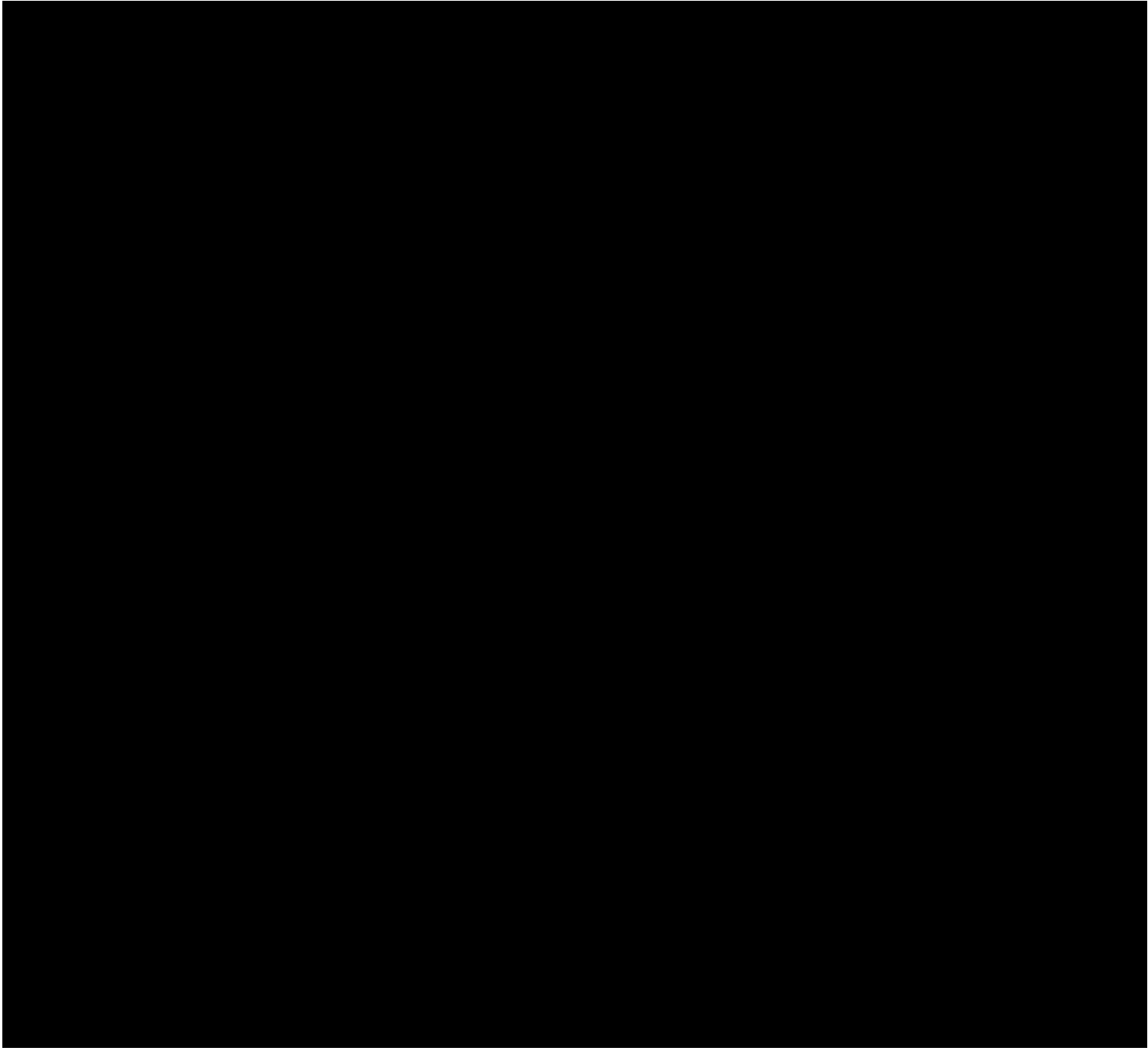
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CATV POLE ATTACHMENT TARIFF

P.S.C. KY NO. 11

WINDSTREAM KENTUCKY EAST, LLC

Original Title Page 1

REGULATIONS, RATES AND CHARGES

Applying to CATV Pole Attachments within the operating territory of Windstream Kentucky East, LLC in the State of Kentucky.

Date of Issue: July 7, 2016

Date Effective: July 17, 2016

Issued By: Chris Cranford

Title: Product Manager – Pricing & Tariffs

By Authority of Order of the Public Service Commission

In Case No. _____ Dated: _____

WIN3788

CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

**P.S.C.KY. No. 11
Original Table of Contents Page 1**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

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CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

**P.S.C. KY. No. 11
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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.1 Application of Tariff

This tariff contains regulations and charges applicable to the provision of attachment space for cable television facilities on poles of the Telephone Company, and the provision of cable duct space for such facilities in underground conduits of the Company.

The terms and conditions contained herein apply where the CATV operator, as a customer of the Company, proposes to install coaxial or other types of television distribution cables, amplifiers and drop wires, wires and appliances together with associated cable messengers, anchors and other appurtenances (hereinafter sometimes collectively called the "equipment") and desires to attach such equipment to poles of the Company, and/or install such equipment in cable ducts of the Company.

S1.2 Definitions

Poles - All references to "poles" of the Company shall mean poles which are either solely owned by the Company, are jointly owned by the Company and another, or are owned by another who has granted the Company exclusive use and control of space upon its poles.

Pole Attachment - This term means any attachment by a CATV firm to a pole owned or controlled by the Company.

Cable Duct Space - This term shall mean individual cable ducts within a multiple-duct conduit system owned by the Company.

Equipment - The "equipment" referred to herein consist of coaxial or other types of television cables, amplifiers and drop wires, wires and appliances together with associated cable messengers, anchors and other appurtenances used in the provision of CATV service.

Joint User - All references herein to "joint user" shall mean a utility company or municipality which, together with the Company, jointly provides poles for common use in the provision of service of the respective entities, and shall also include a utility company or municipality which, together with the Company, owns a percentage of a pole, or which owns a pole upon which the Company has obtained exclusive use and control of specified space.

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CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

**P.S.C. KY. No. 11
Original Page 2**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.2 Definitions (Continued)

Cable Television Company or Operator (CATV) - All references herein to "CATV Company and/or Operator" shall mean a company which provides CATV service.

CATV Service - All references herein to "CATV service" shall mean the transmission, by means of coaxial or other types of distribution cables, of television audio and video signals from a central point within an exchange of the Company to subscribers of a CATV company within such exchange.

S1.3 Scope

Subject to the terms and conditions contained in this tariff, the Company will provide CATV pole attachment and cable duct space and permit a CATV operator, for the purpose of furnishing CATV service, to install its equipment upon or within such of the Company's poles and conduits as are available or can be made available, except for safety reasons.

References herein to CATV equipment placed in the Company's cable ducts shall mean only cables and wires. No right to place amplifiers, power supplies or other related equipment in manholes or cable ducts of the Company is conferred by this tariff.

The CATV company shall secure from the proper franchising authority, a franchise to erect and maintain its equipment within public streets, highways and other thoroughfare, provided such franchising authority exists, and shall secure any and all consents, permits, licenses, easements or rights-of-way that may be legally required for its operation hereunder. The CATV company shall provide to the Company documentation evidencing that all such franchises, consents, permits, licenses, easements and rights-of-way have been obtained. The CATV company shall additionally provide the Company a map depicting the franchised area in which pole attachments and cable duct arrangements may be applied for by the CATV company.

The CATV company shall assist in, and bear the expense of securing any additional consents, permits, or licenses that may be required by the Company because of CATV pole attachments or cable duct usage.

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CATV POLE ATTACHMENT TARIFF

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**P.S.C. KY. No. 11
Original Page 3**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.3 Scope (Continued)

The franchises, consents, permits, licenses, easements and rights-of-way of the Company are for its own facilities and the provision of its other services. No rights in such franchises, consents, permits, licenses, easements or rights-of-way are conferred upon any CATV company hereunder.

S1.4 Application for Permission to Install

At least forty-five (45) days prior to the time the CATV company desires to attach its equipment to any of the Company's poles, or to install any such equipment within a cable duct of the Company, the CATV operator shall make written application on the form prescribed to the Company. The Company shall in turn, notify the CATV company in writing of its permission to allow the installation.

Where the application for attachment involves joint-use poles, the CATV operator shall so indicate in its application, and provide a copy thereof to the joint user. Permission to attach to joint-use poles shall be subject to the Company obtaining approval from such joint user when necessary.

Upon notification by the Company of its permission for pole or cable duct space to be used by the CATV company, the CATV company shall have the right, subject to the SPECIFICATIONS contained herein, to install, maintain and use its equipment described in its application, upon the poles or in the cable ducts identified in its application. The CATV company shall complete each installation within a reasonable and mutually agreeable time frame; provided, however, that before commencing any such installation, the CATV company shall notify the Company of the time when it proposes to do such work sufficiently in advance so that the Company may arrange to have any necessary representative present when such work is performed. In the event the presence of a Company representative is required, the CATV company shall reimburse the Company for the cost and expense of such.

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**P.S.C. KY. No. 11
Original Page 4**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.4 Application for Permission to Install (Continued)

Where costs are involved in the rearrangement of the Company's facilities to accommodate the CATV company's equipment, the Company shall notify the CATV company, in writing, of the changes and rearrangements required and the cost for performing such. Approval of the application by the Company is subject to receiving authorization from the CATV company to make changes and rearrangements detailed by the Company, at the CATV company's expense.

The CATV company shall not have the right to place, nor shall it place, any additional equipment upon any pole or in any cable duct without first making application to do so, as provided for in this tariff; nor shall the CATV company change the position of any equipment attached to any such pole or installed in any cable duct without the Company's prior written approval. The Company will not refuse a CATV company permission to install or rearrange CATV equipment if pole attachment or conduit space is available or can be made available, except for safety reasons. The provisions of this paragraph shall not restrict the attachment of television drops to television crossarms or television cable messenger. Unauthorized attachments or installation in cable duct shall be subject to penalty and/or special "make-ready" charges set forth in this tariff.

S1.5 Attachment Specifications

The CATV company, at its own cost and expense, shall construct, maintain and replace its attachments on the Company's poles in accordance with (1) such requirements and specifications as the Company shall prescribe and have on file with the Commission, (2) EEI Publication M12 entitled "Specifications for the Construction and Maintenance of Jointly-Used Wood Pole Lines Carrying Supply and Communication Circuits", (3) the requirements and specifications of the National Electrical Safety Code, 1981 Edition, and any amendments or revisions of said specifications or code, and (4) in compliance with any rules or orders now in effect or that hereafter may be issued by the Public Service Commission of Kentucky or other authority having jurisdiction. The CATV company shall comply, at its sole risk and expense, with changes and revisions in the above specifications and requirements.

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Original Page 5**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment

The exact location of the CATV company's attachments on poles and installation in cable ducts shall be determined by the Company in its sole discretion after a joint survey to be made, at such times as shall be mutually agreed upon, by representatives of the telephone company and the CATV company. The Company may make periodic inspections as conditions may warrant. Such inspections shall not operate to relieve the CATV company of any responsibility, obligation, or liability assumed under this tariff. When substandard installations are found which are created by the CATV operator, the Company shall give notice of such to the CATV company, and the CATV company shall remedy such conditions within a reasonable time. In the event the CATV company fails to remedy the condition within the agreed upon time, the Company may act to remedy it with the cost of such to be paid by the CATV company.

Whenever CATV equipment is to be installed, rearranged or removed on or from Company poles, such work will normally be performed by the CATV company at its expense. In such cases a Company representative may be required to observe the work, at the expense of the CATV company. Where consented to by the Company, the CATV company may elect to have such installation, rearrangement or removal performed by the Company; however, the CATV company will furnish all materials and equipment and will reimburse the Company for its costs in performing the work activity.

Whenever CATV equipment is to be installed, rearranged or removed in cable ducts, such work will usually be performed by the Company, at the CATV company's expense. If the CATV elects to perform the work activity, a Company representative may be required to observe the work at the expense of the CATV company. Work performed by the Company or the CATV firm, shall be performed in accordance with the Company's established practices, and all materials and equipment shall be supplied by the CATV company.

Date of Issue: July 7, 2016

Date Effective: July 17, 2016

Issued By: Chris Cranford

Title: Product Manager – Pricing & Tariffs

By Authority of Order of the Public Service Commission

In Case No. _____ Dated: _____

CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

**P.S.C. KY. No. 11
Original Page 6**

S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment (Continued)

Where the CATV company's equipment can be accommodated on Company poles or in Company cable ducts by rearranging or changing the Company's facilities, the CATV company shall pay the Company in advance the cost of making such rearrangements or changes. Strengthening of poles (guying) required to accommodate the attachments of the CATV company and the bonding of the CATV's strand to that of the Company shall be performed by the CATV company at its sole risk and expense. Such work may be performed by the Company when reasonable cause therefore exists, and the CATV company shall pay the Company in advance the cost of all such work.

After initial attachment, when the Company subsequently requires a change in its poles, attachments thereto or its conduit system for reasons unrelated to CATV operations, the CATV company shall be given reasonable notice of the changes required and sufficient time to accomplish the CATV related change. If the CATV operator is unable or unwilling to meet the Company's time schedule for changes in attachments, the Company may do the work and charge the CATV company its reasonable costs for performing the change of CATV equipment. In cases of emergency, the Company may, at the CATV company's expense, arrange to relocate or replace the facilities attached to Company poles by the CATV operator, transfer them to substituted poles or perform any other work in connection with said facilities that may be required in the maintenance, replacement, removal, or relocation of said poles, the facilities thereon or the equipment which may be placed thereon.

All required maintenance of CATV equipment shall be performed by the CATV operator. No entry shall be made into any facility housing or cable ducts without the prior written permission of the Company. The Company reserves the right to require the presence of its representative at the time of any such entry, with the cost thereof to be reimbursed by the CATV company. An estimate of such cost shall be furnished at the time the Company gives its written permission for entry.

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CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment (Continued)

All tree trimming required on account of CATV company equipment shall be done by the CATV operator at its sole risk and expense and in a manner satisfactory to the Company.

The CATV company shall, at its sole risk and expense, maintain all of its equipment on Company poles or in Company cable ducts in safe condition and in thorough repair.

Nothing herein contained shall give to the CATV company the right to place a crossarm on any Company pole. If a crossarm is required to accommodate the facilities of the CATV company, the CATV company shall state the reasons in its application for attachment.

Written consent of the Company must be obtained by the CATV company prior to any additions to, or changes in the location of its attachments on poles or equipment in cable ducts, except in cases of emergency when oral permission has been obtained from the Company and subsequently confirmed in writing.

If the CATV company should require the location of its equipment upon any public thoroughfare or other public or private property in the conduct of its business and the Company does not have pole facilities so located to fulfill CATV requirements and has no immediate need for such for the Company's own use, the Company will notify the CATV operator whether the Company is willing to place such pole facilities. Special rates shall be agreed to by the CATV company prior to the Company's placement of such pole facilities, and the rates specified herein shall not apply. The special rates shall be based upon the total use of the pole facilities by the CATV company. In the event such pole facilities are subsequently used by the Company for the provision of its other services, the special rates shall no longer apply, and the rates specified in this tariff shall apply.

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CATV POLE ATTACHMENT TARIFF

WINDSTREAM KENTUCKY EAST, LLC

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.6 Installation and Maintenance of CATV Equipment (Continued)

Whenever, pursuant to this tariff, the CATV company shall be required to remove its equipment from any pole, such removal shall be made within a reasonable time unless safety considerations require immediate action. Upon failure of the CATV company to remove such equipment, the Company may make the removal and charge the CATV company all associated costs.

Whenever, pursuant to the tariff, CATV equipment in cable ducts shall be required to be removed, relocated or replaced, such work will usually be performed by the Company, after written notice to the CATV company, at the CATV company's expense. If the CATV company elects to perform the work, a Company representative may be required to observe the work at the expense of the CATV company. Any CATV equipment required for such work performed by the Company or the CATV firm, shall be supplied by the CATV company.

The CATV company shall not interset poles or locate guys or other facilities in pole lines of the Company, except where the CATV company has appropriate right-of-way and such will not inhibit access to poles and facilities of the Company or cause a safety hazard.

S1.7 Cost of Pole Replacements

Whenever the CATV company applies for permission to attach to a pole that is considered by the telephone company to be insufficient in height or strength for accommodation of CATV attachments, the Company shall notify the CATV operator of such fact and of the estimated cost to the CATV company of replacing such pole with a pole which will accommodate the attachments of the CATV company and the telephone company. Within thirty (30) days of such notification, the CATV company shall either notify the Company (1) of its approval of such replacement or (2) of its cancellation of the application with respect to such pole.

In the event of CATV's approval of such replacement, the Company shall replace the pole and the CATV operator shall pay to the Company in advance the charges computed as follows:

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.7 Cost of Pole Replacements (Continued)

- (1) The total cost of the new pole, the removal of the old pole, the transferring of the Company's attachments from the old to the new pole and such other costs, if any, necessitated by CATV requirements, less the total of the following: accrued depreciation on the old pole, salvage, if any, and the cost of such portion of the new pole, if any, which represents space reserved for the use of the Company greater than that provided for them on the old pole and appropriate contribution by any other company attached thereto.

S1.8 Rights of Way and Legal Authority

Upon application for attachment or use of cable ducts, the CATV company shall submit evidence satisfactory to the Company of its authority to erect and maintain its equipment within public streets, highways, and other thoroughfares and shall secure any necessary franchise, license, permit, consent, easement or rights-of-way from Federal, State or municipal authorities or owners of property now or hereafter required to construct and maintain such equipment at the location of facilities of the Company which it desires to use. In the event any such franchise, license, permit, consent, easement or rights-of-way is revoked or is thereafter denied to the CATV company for any reason, permission to attach to Company poles or to use Company cable ducts so affected shall immediately terminate, the CATV company shall forthwith remove its equipment from Company facilities.

Upon notice from the telephone company to the CATV company that the removal or cessation of the use of any pole or cable duct has been requested or directed by Federal, State or municipal authorities, or property owners, permission to attach to such pole or to use such cable duct shall immediately terminate and the CATV company shall forthwith remove its equipment therefrom.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.9 Protection Against Claims for Libel and Slander, Copyright, and Patent Infringement

The CATV company shall indemnify, protect, and hold harmless the Company from and against any and all claims for libel and slander, copyright and/or patent infringement arising by reason of attachment of CATV equipment to Company poles or installation of CATV equipment in Company cable ducts, pursuant to this tariff.

S1.10 Limitations

No use, however extended, of the Company's poles or cable ducts under this tariff shall create or vest in the CATV company any ownership or property right in said poles or ducts. Nothing herein contained shall be construed to compel the Company to maintain any of its facilities for a period longer than that demanded by its other service requirements.

The Company reserves to itself, its successors and assigns the right to maintain its poles and conduit and to locate and operate its facilities in such manner as will best enable it to fulfill its other public service requirements. Except where caused by its own negligence the Company shall not be liable for any interruption to the service of the CATV company or for any interference with the operation of the equipment of the CATV company.

The Company reserves the right to provide pole attachment and cable duct space to more than one CATV company and to make such space available to other entities. This tariff shall not limit the rights and privileges previously granted to others to use any poles or cable ducts covered by this tariff, and the privileges provided by this tariff shall at all times be subject to such previously granted rights.

Failure to enforce or insist upon compliance with any of the terms or conditions of this tariff shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in effect.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.10 Limitations (Continued)

The CATV company shall not assign, transfer or sublet any rights to make pole attachments or utilize cable ducts hereunder without the prior written consent of the Company; except that nothing contained herein shall be construed as depriving a CATV company of its property or the ability to dispose of its property in any manner it deems reasonable.

S1.11 Indemnity and Insurance

The CATV company shall indemnify, protect, and hold harmless the Company and other joint-users of said poles and conduit system from and against any and all loss, costs, claims, demands, damage and/or expense arising out of any demand, claim, suit or judgment for damages to property and injury to or death of persons, including the officers, agents, and employees of the CATV company, the Company and any joint user, including payment made under any Workmen's Compensation Law or under any plan for employees' disability and death benefits, which may arise out of or be caused by the installation, maintenance, presence, use or removal of said equipment or by the proximity of CATV equipment to the cables, wires, apparatus and appliances of the Company or any joint user, or arising out of any act, omission or negligence or alleged act, omission or negligence of the CATV operator or the joint negligence of the CATV operator and the Company and/or any joint users; provided, that the obligation of the CATV company under this paragraph does not include the indemnification of the Company or any joint user from or against the sole or joint negligence of the Company or any joint user.

The CATV company shall maintain in full force and effect the following insurance policies or bond in lieu thereof providing an equivalent protection: (1) Workers' Compensation and Occupational Disease covering the CATV company's full liability under the Workers' Compensation Laws of the Commonwealth of Kentucky. This shall include Employer's Liability insurance in the amount of \$100,000. (2) Comprehensive General Liability insurance, in the amounts of \$1,000,000 Combined Single Limits or \$1,000,000 each occurrence, and \$1,000,000 aggregate for any accident resulting in

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.11 Indemnity and Insurance

bodily injuries to or the death of one or more persons and the consequential damages arising therefrom together with Property Damage Liability in the amount of \$500,000 each occurrence, with an aggregate total limit of \$500,000.

All policies of insurance shall contain written endorsements to the effect that the amount of coverage of the insurance provided thereby will not be reduced or terminated without thirty (30) days written notice first being given to the Company. Certificates of insurance, incorporating the above described endorsement, shall be delivered to a designated officer of the Company and shall be approved by the Company before the CATV firm is permitted to perform any work authorized pursuant to this tariff. Failure of the CATV company to provide notice of renewals, changes in carrier, or a reduction in or termination of insurance coverage will be just cause for the Company to terminate the CATV company's right to continue its pole attachments and/or use of cable ducts. If renewal premiums are not paid by the CATV company prior to said 30-day notice, the Company shall have the right to pay said premiums and be reimbursed by the CATV company upon demand.

The CATV operator shall promptly notify the Company of all claims and potential claims relating to damage to property or injury to or death of persons arising or alleged to have arisen in any manner by or associated with, directly or indirectly, the presence or use of the CATV company's equipment upon or within any facility of the Company.

The CATV company shall exercise special precautions to avoid damage to facilities of the Company on said poles and conduit and hereby assumes all responsibility for any and all loss for such damage. The CATV company shall make an immediate report to the telephone company of the occurrence of any such damage and shall reimburse the Company for the expense incurred in making repairs necessitated thereby.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.12 Surety

The CATV company shall furnish a bond for each individual CATV system utilizing pole attachments or cable ducts under this tariff to guarantee the payment of any sum which may become due to the Company for rental, penalty, and make-ready charges and work performed by the Company, pursuant to this tariff, for the benefit of the CATV company or as a result of default or forfeiture by the CATV company. The amount of such bond shall be based upon the following:

- (1) For attachments to 500 poles or less, a bond of \$5,000 shall be furnished, except as provided in (4) below.
- (2) For attachments to poles in excess of 500, further surety in the amount of \$5,000 for each additional 500 poles, or any increment thereof, shall be furnished except as provided in (4) below.
- (3) Where cable ducts are provided, further surety in the amount of \$10,000 shall be furnished, except as provided in (4) below.
- (4) After one year following the completion of construction of an individual CATV system and its placement into operation, the CATV operator may request that the required amount of bond be reduced. Upon the Company's receipt of satisfactory evidence that all mechanics, workmen and material men who furnished services, labor or materials in the construction of such CATV system, and all taxing authorities, have been paid all amounts due them, the Company will reduce the amount of bond required to the following:
 - (a) For attachments to 500 poles or less, a bond of \$2,000 shall be furnished.
 - (b) For attachments to poles in excess of 500, further surety in the amount of \$2,000 for each 500 poles, or any increment thereof, shall be furnished.
 - (c) Where cable ducts are provided, further surety in the amount of \$5,000 shall be furnished.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.13 Payment of Bills

All amounts payable by the CATV company to the Company under the provision of this tariff shall, unless otherwise specified, be payable within thirty (30) days after presentation of bills. Non-payment of any such amounts when due shall constitute grounds for termination of the pole attachment and cable duct usage rights under this tariff.

S1.14 Termination of Attachments and Cable Duct Usage

If the CATV company shall fail to comply with any of the provisions of this tariff, including compliance with the specifications previously referred to, the maintenance of required insurance coverage and surety bond requirements, and the timely payment of any amounts due, and shall fail for thirty (30) days after written notice from the Company to correct such non-compliance, the Company, at its option, may terminate the CATV company's right to continue any or all use of poles or cable ducts provided under this tariff and may act to remove the CATV equipment at the CATV company's expense.

Upon valid objection being made by or on behalf of any governmental authority properly asserting jurisdiction, the Company may without notice, or where circumstances permit, upon five (5) days written notice to the CATV company, terminate the provision of pole attachment and/or cable duct space as provided in this tariff.

The CATV company may at any time remove its equipment attached to any pole or poles of the Company and shall immediately give the Company written notice of such removal. The CATV company may at any time request the removal of its equipment in the cable duct of the Company. Removal of CATV equipment in cable ducts will usually be performed by the Company, at the CATV company's expense. If the CATV company elects to perform the work, a Company representative may be required to observe the removal at the expense of the CATV company. Removal work performed by the CATV company is to be made within a reasonable time, unless safety conditions require immediate action.

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S1. CATV POLE ATTACHMENT AND CABLE DUCT ARRANGEMENT

S1.15 Notices

Any notice required or authorized by this tariff to be given by the Company or the CATV company to the other party shall be deemed to have been fully given when made in writing and deposited in the United States mail, postage prepaid, and addressed to such other party's principal business address last furnished by such party.

S1.16 Rates

The CATV Company shall pay to the Company in advance the rates specified below. The Company shall render billing to the CATV Company on at least a quarterly basis. The Company will bill for CATV pole attachments or conduit usage from the date of CATV installation or from the date that space is reserved for CATV installation at an unspecified future time.

	<u>Monthly Rate</u>
Per 2-User Pole	\$ 1.01
Per 3-User Pole	.47
Per linear foot of cable duct space occupied	.07

S1.17 Penalty Charges

Where pole attachments have been made without respect of authorization from the Company, a penalty charge of twice the amount of the annual rate shall apply, in lieu of the annual rate, from the date of the last previous physical inventory of pole attachments or inspection required pursuant to the rules of the Kentucky Public Service Commission, whichever is most recent. Additionally, a special "make-ready" charge, equal to twice the amounts which would have been due and applicable if the attachment had been properly authorized, shall apply.

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Windstream Pole Attachment Data Sheet

EXHIBIT B – PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER	
STREET LOCATION		NAME OF ATTACHER	
CITY/BORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy			
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT TOP OF CONDUIT RISER HEIGHT
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; If yes ➡ <input type="checkbox"/> Primary <input type="checkbox"/> Secondary	

MAKE READY WORK	REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, PROVIDE ADDITIONAL DETAIL
------------------------	---	-----------------------------------

POLE DRAWING	POLE NO. ➡	BEFORE	AFTER
	*TYPE OF POWER ATTACHMENT ➡	<input type="checkbox"/> Neutral <input type="checkbox"/> Secondary	
	<p>Company Name</p> <p>1. _____</p> <p>2. _____</p> <p>3. _____</p> <p>4. _____</p>		

SPAN	MID-SPAN HEIGHT Ft.	SPAN CROSSES OVER (Check all that apply)					
		<input type="checkbox"/> Body of Water	<input type="checkbox"/> Street	<input type="checkbox"/> Driveway	<input type="checkbox"/> Field	<input type="checkbox"/> Interstate	<input type="checkbox"/> Parking Lot
		<input type="checkbox"/> Swimming Pool	<input type="checkbox"/> Building	<input type="checkbox"/> Railroad	<input type="checkbox"/> Yard		

NOTE	
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POLE ATTACHMENT LICENSE AGREEMENT

BY AND BETWEEN

AND

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ATTACHED AND INCORPORATED EXHIBITS

EXHIBIT A – DEFINITIONS

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EXHIBIT C – NOTIFICATION OF SURRENDER OF LICENSE

EXHIBIT D – SCHEDULE OF RATES, FEES AND CHARGES

EXHIBIT E – NOTICE CONTACTS AND ADDRESSES

1. PARTIES.

This Pole Attachment License Agreement (“Agreement”) is entered into as of the date last signed by all the parties (“Effective Date”) by and between [REDACTED], a Windstream company organized and existing under the State of [REDACTED] (“Licensor”), and [REDACTED], a company organized and existing under the State of [REDACTED] (“Licensee”). Licensor and Licensee may sometimes be referred to in this Agreement individually as a “party” and collectively as the “parties”.

2. SCOPE.

A. The purpose of this Agreement is to set forth the rates, terms, conditions, and procedures under which the Licensor will provide Licensee access to Licensor’s Poles (as defined herein) in the State of [REDACTED] for the purpose of Licensee attaching wireline facilities.

B. The parties acknowledge that Licensor is entering into this Agreement because Licensee has represented it is a regulated "telecommunications carrier" or “cable television system” provider as such terms are defined in the Communications Act of 1934, as amended (hereinafter the "Communications Act") and desires to provide telecommunications service or cable service (“Services”), as defined in the Communications Act; and that Licensee is authorized to provide these Services under its franchise or other lawful authority within its service area where Licensor owns Poles. In the event Licensee no longer has the status as a “telecommunications carrier” or “cable television system” provider or the authority to offer these Services in the state where the Poles are located, Licensor shall have the right to immediately terminate this Agreement and require Licensee to remove all of its facilities from Licensor’s Poles. **As a condition precedent to entering into this Agreement, Licensee shall submit to Licensor a copy of its certification evidencing its status as either a regulated telecommunication carrier or cable television system provider, and until such documentation is provided to Licensor, Licensor shall not be obligated to enter into this Agreement.**

C. Subject to the provisions of this Agreement, Licensor will issue to Licensee for any lawful communications purpose, revocable, nonexclusive Licenses authorizing the placement of Licensee’s Attachment to Licensor’s Poles.

D. No use, however extended, of Licensor’s Poles nor payment of any fees or charges required under this Agreement or License issued under this Agreement shall create or vest in Licensee any ownership or property rights in said Poles, but Licensee’s rights therein shall be and remain a mere license. Nothing herein contained shall be construed to compel Licensor to construct, retain, extend, place, or maintain any facilities not needed for its own service requirements, unless otherwise required by law. Nothing contained in this Agreement or in any License issued hereunder shall in any way affect, restrict or impair the right of Licensor to convey, transfer, mortgage, or assign to any other person or entity any interest in real or personal property, including any Poles in which Licensee has attached or placed Licensee’s Attachments pursuant to Licenses issued under this or other license agreements.

E. Licensee recognizes that Licensor has entered into, or may in the future enter into, agreements and arrangements with others which are not a party to this Agreement regarding the Poles covered by this Agreement. Nothing herein contained shall be construed as a limitation, restriction or prohibition against Licensor with respect to such other agreements or arrangements. The rights of Licensee shall at all times be subject to any present or future joint use or joint ownership arrangement between Licensor and any other party.

F. This Agreement does NOT create any right for Licensee to access or place facilities in Licensor central offices, conduit or to place wireless communication equipment on Poles. A separate agreement is required for any access to Licensor facilities other than those outlined in this Agreement.

3. DEFINITIONS.

Certain capitalized terms used in this Agreement are listed in and have the meaning as set forth in Exhibit A. Exhibit A is incorporated and made a part of this Agreement by reference.

4. TERM AND TERMINATION OF AGREEMENT

A. This Agreement shall become effective upon the Effective Date and if not terminated in accordance with the provisions of this Agreement, shall continue in effect for a term of one (1) year (“Initial Term”) and shall continue on a year –to – year basis. Notwithstanding the foregoing, any time after the Initial Term and anytime thereafter the rates, fees and charges set forth may be increased or decreased by written notice from Licensor to Licensee.

B. Either Party may terminate this Agreement for any reason after the Initial Term with at least thirty (30) day written notice to the other party. Licensor may terminate this Agreement in the event of default as set forth under Article 20 of this Agreement.

C. Upon termination of the Agreement in accordance with any of its terms, all outstanding Licenses in connection therewith shall terminate and shall be surrendered and Licensee shall immediately, and at its sole expense remove all Attachments located on Poles within sixty (60) days of date of termination.

5. TERMINATION OF LICENSES

A. In addition to other termination rights set forth in this Agreement, upon notice from Licensor to Licensee that Licensor has been advised by a governmental authority or private property owners that the use of any Poles is not authorized and is objected to by such governmental authority or private property owner, as the case may be or that any Poles is to be removed, sold or otherwise disposed of, Licensee shall, immediately remove its cables, equipment, and facilities at once from the affected Poles or shall make arrangements for the removal of its cable, equipment, and facilities from the affected portion of Licensor's Poles at Licensee's sole expense. If not so removed within sixty (60) days or such timeframe as stated on the Notice, Licensor shall have the right to remove Licensee's Attachments from Licensor's Poles at the cost and expense of Licensee and without any liability thereto.

B. Licensee may at any time remove its Attachments from any Poles of Licensor, but shall immediately give Licensor written notice of such removal and surrender of License in the form of a Notification of Surrender attached hereto as Exhibit C and incorporated by reference and made a part of this Agreement. If Licensee surrenders its License but fails to remove its Attachments from Licensor's Poles, Licensor shall have the right but not the obligation to remove Licensee's Attachments at Licensee's expense without any liability on the part of Licensor for damage or injury to Licensee's Attachments or interruption to Services. Licensee's obligations with regard to maintenance and fees continue until Attachments are removed from the Poles. In the event that Licensee's Attachments shall be removed from any Poles as provided by this Agreement, no Attachment shall again be made to such Poles unless

Licensee shall have first complied with all of the provisions of this Agreement as though no Attachment had previously been made.

6. RATES, FEES AND CHARGES.

A. All rates, charges and fees set forth in this Agreement and those shown in Exhibit D (Schedule of Rates, Fees, and Charges) shall be subject to and calculated in accordance with applicable law, and Licensor may in its sole discretion revise the rates, charges and fees as set forth in Exhibit D upon 30 day notice to Licensee. Exhibit D is incorporated and made a part of this Agreement by reference. The fees, rates and charges set forth in Exhibit D or elsewhere in this Agreement are effective during the term of this Agreement and subject to change as set forth herein.

B. Pole Attachment Fee. For the purpose of computing the annual Pole Attachment Fee due under this Agreement the Pole Attachment Fee shall be based each year upon the number of Poles where Licensor has issued a License as of the date of annual billing multiplied by the Attachment Rate set forth on Exhibit D, as may be modified by Licensor from time to time. If Licensee is a regulated cable system provider which begins to offer telecommunication Services, Licensee must notify Licensor within thirty (30) days of the change in use if it shall begin to use any attachment for telecommunication Services and Licensor may adjust the Attachment Rate and Pole Attachment Fee as appropriate consistent with the applicable FCC formula for telecommunication providers.

C. All charges for inspections, engineering, replacement or rearrangements of Licensee's Attachments from Licensor's Poles and, without limitation, any other work performed for Licensee shall be based upon the full cost and expense, including reasonable overhead, incurred by Licensor or its representative for performing such work for Licensee to include without limitation costs to transfer or moving of Licensor facilities and removal of old Poles. The cost to Licensee shall be determined in accordance with the regular and customary methods used by Licensor in determining such costs.

D. All other Attachment related inquiry, verification, application, administrative and miscellaneous rates, fees and charges shall be calculated and paid in accordance with Exhibit D and the terms of this Agreement.

E. Upon termination or surrender of a License granted hereunder, no refund of any Pole Attachment Fees shall be made and Licensee shall remain liable for all fees and charges set forth in this Agreement until Licensee has removed its Attachments.

7. PAYMENT, SECURITY BOND AND LIEN.

A. All bills for such other charges for work performed by Licensor and the fees set forth in the Agreement shall be payable upon presentment to Licensee, and shall be deemed delinquent if not paid within thirty (30) days after the date of the invoice.

B. Bond. Licensee shall furnish a bond or other security, and keep in place during the term of this Agreement, satisfactory to Licensor, the amount of \$5,000 or an amount equal to two (2) years of Pole Attachment Fees, whichever is greater, to guarantee the performance of Licensee obligations including payment of any such sums (including Unauthorized Attachment charges and liquidated damages) which may become due to Licensor arising out of this Agreement including, but not limited to rent, fees due hereunder or charges for work performed for the benefit of Licensee under this Agreement, including the

removal of Licensee's facilities upon termination of this Agreement by any of its provisions or upon termination of any License issued hereunder. Such bond shall include that Licensor received 30 days prior notice of cancellation. Cancellation of a bond shall be an event of default by Licensee. Upon signing this Agreement and prior to issuance of a License, Licensee shall furnish the bond to be sent to person identified in Exhibit E. Licensor may in its sole discretion change the bond amount or cancellation notice requirement from time to time upon at least thirty (30) day notice to Licensee. Licensor shall not be obligated to issue any License hereunder until Licensee has provided the bond as set forth herein.

C. Lien. Should Licensor under the terms and conditions of this Agreement remove Licensee's Attachments from Licensor's Poles, Licensor will deliver to Licensee the cable, equipment or facilities so removed upon payment by Licensee of the cost of removal, storage and delivery, and all other amounts due Licensor hereunder. Licensor is hereby given a lien on Licensee's cable, equipment or facilities attached to Licensor's Poles or removed therefrom, with power of public or private sale, to cover any amounts due Licensor under the provisions of this Agreement. Such liens shall not operate to prevent Licensor from pursuing, at its option, any other remedy in law, equity or otherwise, including any other remedy provided for in this Agreement.

8. ATTACHMENT REQUEST AND LICENSE PROCESS

A. Before Licensee shall have a right to place Attachments to any Poles of Licensor, Licensee shall make application for and receive a revocable, nonexclusive License which shall be in the form of a Licensor countersigned Application for Pole License (Exhibit B). Each Exhibit B Application for Pole License shall contain no more than twenty-five (25) Poles and Licensee may submit up to twelve (12) Exhibit B, Application for Pole License within a rolling thirty (30) day period. Licensor will process Applications for Pole Licenses in the order in which they are received; provided, however, that when Licensee has multiple Applications for Pole Licenses on file with Licensor, Licensee may designate its desired priority of completion with respect to all such Application for Pole Licenses. **Licensee shall not under any circumstances attach any equipment to any guy wires or anchors owned by Licensor.**

B. Application For Pole License and Engineering Survey. Licensee shall submit an Application for Pole License in the form of Exhibit B and shall include a drawing of the proposed route, the pole detail and contact information (name, telephone, facsimile, and email information). Upon receipt of a complete Application for Pole License, Licensor will conduct an engineering survey to determine whether and where Licensee's Attachment is feasible, and what Make Ready Work is required by Licensor or other existing attachers to accommodate Licensee's Attachment. Upon completion of the engineering survey, Licensor shall inform Licensee of its estimated make-ready charges for Licensor Make Ready Work ("Make Ready Estimate"). If during this process, Licensor determines the request is denied based on insufficient capacity or for reasons of safety, reliability and generally applicable engineering purpose Licensor shall inform Licensee that the Application for Pole License is denied together with the reason. All expenses incurred by Licensor in reviewing Licensee's Application for Pole License shall be borne by Licensee even if such request is denied by Licensor.

C. Advance Payment of Make Ready Work Estimate and Expedited Charges. If Licensee upon review of the Make Ready Estimate desires to proceed with the process to obtain a License from Licensor, Licensee shall submit payment in the amount of the Make Ready Estimate together with the Application Fee and engineering survey costs to Licensor within fourteen (14) days of receipt of the Make Ready Estimate and invoice for such amounts. Licensee shall be solely responsible for negotiating with existing attachers for Make-Ready Work relating to such other existing attacher facilities located on,

within or in Licensor's Poles and shall be responsible for paying all charges incurred in transferring or rearranging existing attacher facilities to accommodate the placement of Licensee's Attachment on, within or in Licensor's Poles. In the event, Licensee declines to proceed with the project Licensee shall reimburse Licensor any costs and expenses incurred by Licensor to date including but not limited to Application Fee, engineering and administrative expenses and costs.

D. Completion of Make Ready Work and Issuance of License. Licensor shall undertake to complete any Make Ready Work of its owned facilities upon receipt of Licensee's payment of the Make Ready Estimate. Upon completion of all Make Ready Work and receipt of all fees and charges due from Licensee to Licensor, Licensor shall issue Licensee an approved License which shall be in the form of a Licensor countersigned Application for Pole License. At that time Licensee will be considered to have been granted a License with respect to the Poles approved in the License and may attach to Licensor's Poles in accordance with the terms and conditions of this Agreement.

E. Licensee shall maintain a copy of all Application for Pole Licenses and approved Licenses. Licensor may provide upon request copies of the same to the extent available and Licensee shall reimburse Licensor for its costs in preparing and sending requested copies.

9. AUTHORITY FOR PLACEMENT OF ATTACHMENT

A. Before any placement of Attachments by Licensee, regardless of whether a License may have been issued, Licensee represents and warrants that it has the authority to maintain Attachments within public rights-of-way, or on private rights-of-way or on private property, and shall upon request provide a copy of documentation evidencing such right to Licensor. Licensee shall be solely responsible for obtaining all licenses, easements, authorizations, permits and consents from federal, state and local authorities or private land owners that may be required to place and maintain Attachments on Licensor's Poles.

B. Licensor and Licensee agree that neither party has the right to restrict or interfere with the other party's lawful access to and use of public right-of-way, including public right-of-way, which pass over property owned by either party. Except as otherwise specifically provided in this Agreement, Licensor and Licensee shall each be responsible for obtaining their own right-of-way and permission to use real or personal property owned or controlled by any governmental body or private entity or person.

C. Licensor may, without incurring any liability, remove Attachments of Licensee from Licensor's Poles, at Licensee's sole expense where in Licensor's sole judgment such removal is required in connection with the performance of Licensor's service obligation or the safety of Licensor's employees. Whenever such removal has been made, Licensee will be notified.

10. CONSTRUCTION AND MAINTENANCE

A. Licensee's Attachments shall be placed and maintained in accordance with the following:

- 1.** any and all Licensor requirements and specifications of Licensor, and
- 2.** the terms and conditions of this Agreement, and
- 3.** the National Electric Safety Code (most recent edition), and
- 4.** the National Electric Code (most recent edition), and

5. in compliance with any other rules or orders now in effect or that may hereafter be issued by any state utility commission or other authority (state, federal, local) having jurisdiction over including but not limited to Poles, rights-of-way, and Hazardous Materials.

Each of Section 10(A)(1-5) is incorporated by reference and made a part of this Agreement, and in the event of a conflict or difference between any of these specifications and requirements, the more stringent will apply. Licensee agrees to rearrange its Attachments, within a commercially reasonable timeframe, in accordance with changes in the standards referenced herein in this Section 10(A) of this Agreement, or if required by law.

B. Licensee shall, at its own expense, make and maintain its Attachments and use Licensor Poles in a safe condition and in thorough repair, and in a manner acceptable to Licensor, and so as not to conflict with the use of said Poles by Licensor or by other authorized users of said Poles, or interfere with other facilities thereon or which may from time to time be placed thereon. Licensee shall, at its sole expense, upon written notice from Licensor, relocate or replace its Attachments placed on said Poles or transfer them to substituted Poles that may be authorized by Licensor, or perform any other work in connection with said Attachments that may be required. Licensor shall give such written notice as is reasonable in the circumstances, provided, however, that in cases of emergency, as determined by Licensor in its sole discretion, Licensor may arrange to relocate, remove or replace Licensee Attachments placed on said Poles, transfer such Attachments to substituted Poles or perform any other work in connection with said Attachments that may be required in the maintenance, replacement, removal or relocation of said Poles or Licensor or existing attacher facilities thereon or which may be placed thereon, or for the service needs of Licensor, and Licensee shall reimburse Licensor for the expense thereby incurred. For the purpose of this Section, Licensee Attachments shall be understood to include Attachments of Licensee in space reserved for Licensor, or space which Licensor has the right to use, on poles of other companies with which Licensor now has or may hereafter have agreements for joint use and occupancy; and the use of such space by Licensee shall be subject to the terms and conditions of the agreements between Licensor and said other companies.

C. Licensee shall be responsible at all times for the condition of Licensee's Attachments and its compliance with the requirements, specifications, rules, regulations, ordinances and laws specified in this Agreement. Licensor shall have no duty to Licensee to inspect, monitor or maintain the condition of Licensee's Attachments (including, but not limited to, splices and other facilities connections) located on, within or in Licensor's Poles. Licensor may make periodic or spot inspections at any time of any part of Licensee's Attachments as Licensor determines reasonable or necessary in its sole judgment, pursuant to Section 16 of this Agreement.

D. Licensee shall not authorize any person or entity acting on Licensee's behalf ("Licensee Contractor") to perform any work on, within or in Licensor's Poles without first verifying, to the extent practicable, on each date when such work is to be performed and, that the condition of the Poles is suitable for the work to be performed. If Licensee or Licensee Contractor determines that the condition of the Poles is not suitable for the work to be performed, Licensee shall notify Licensor of the condition of the Poles in question and shall not proceed with construction activities until Licensee is satisfied that the work can be safely performed.

E. Licensee shall be solely responsible for paying all persons and entities that provide materials, labor, access to real or personal property, or other goods or services in connection with the construction and placement of Licensee's Attachments and for directing the activities of all Licensee Contractors while

they are physically present on, within or in the vicinity of Licensor's Poles. Licensee shall not permit any mechanic's lien, material man's lien, or any other lien, claim or security interest to attach to or encumber any of Licensor's real or personal property at any time.

F. Licensee's main line Attachments shall be tagged at maximum intervals of 300 feet so as to identify Licensee as the owner of the Attachment. Licensee shall place fiber wrap/ID at the specific Licensor Poles attaching point and at any aerial span splice location and/or slack loop. The tags shall be of sufficient size and lettering so as to be easily read from ground level.

11. OVERLASHING

A. Licensee may, upon notice to Licensor, overlash its own existing authorized Attachment and this does not constitute a separate Attachment, as it relates to the billing of Pole Attachment Fees, unless multiple/separate Attachment points are physically made at the Poles itself outside of the scope of a single Attachment. Such notice shall be in the form of an Exhibit B Application for Pole License, and any additional Attachments being installed on Poles, regardless of it being an overlash of existing Attachment or as a new Attachment, will require an engineering analysis to determine if the additional loading negatively impacts the Poles capacity. Any additional load which causes the Pole to exceed its rated capacity or no longer provides for ample ground clearance of the Attachments or other facilities will necessitate the need for the Licensee to pay any and all Make Ready Work necessary. Each overlash strand shall not exceed a 2" maximum diameter.

B. In no event shall Licensee allow a third party to overlash to Licensee's Attachments without prior notice to and consent from Licensor. Any third party must execute a License Agreement with Licensor and obtain a license thereunder.

12. MODIFICATIONS, ADDITIONS, REPLACEMENTS OR REARRANGEMENTS

A. Licensee shall not modify, overlash, add to, or replace Attachments on any Poles without first notifying Licensor in writing of the intended modification, addition or replacement at least thirty (30) days prior to the date the activity is scheduled to begin. The required notification shall include:

1. the date the activity is scheduled to begin including the Pole location and Pole number,
2. a description of the planned modification, addition, or replacement,
3. a representation that the modification, addition, or replacement will not require any space other than the space previously designated for Licensee's Attachments, and
4. a representation that the modification, addition, or replacement will not impair the structural integrity of the Poles involved.

B. Upon Licensor's receipt of a complete Exhibit B Application for Pole License, Licensor will perform, at Licensee's sole expense, a field check and if Licensor determine that the modification, addition, or replacement specified by Licensee in its notice will require more space than that allocated to Licensee or will require the rearrangements of, reinforcement of, replacement of, or an addition of support equipment to the Poles involved in order to accommodate Licensee's modification, addition, or replacement, Licensor will so notify Licensee and the parties will follow the Make Ready Work process

as set forth in Section 8 of this Agreement in order to obtain authorization for the modification, addition, or replacement of its Attachments.

C. Should Licensee request Licensor to expand capacity or purchase additional plant and should Licensor so agree, Licensee agrees to pay all cost and expenses thereby incurred by Licensor. If another party that has been granted a license joins in the request and will benefit from the expansion or purchase, Licensee agrees to pay a percentage of all costs proportionate to Licensee's share of the benefit received from the expansion or purchase, but Licensee shall be responsible for all costs and expenses not paid by the other party.

D. When multiple applications, including those of Licensee, are received by Licensor with respect to any Poles which must be replaced or rearranged to provide additional space prior to commencement of the work on such Poles, Licensor's facilities may need to be transferred in which case Licensee shall pay for all costs for such transfers.

E. In the event Licensor plans to modify or alter any Poles upon which Licensee has placed Attachments, Licensor, except in emergency situations, shall provide Licensee written notice of the proposed modification or alteration at least sixty (60) days prior to the time the proposed modification or alteration is scheduled to take place. Should Licensee decide to modify or alter Licensee's Attachments on Poles, Licensee shall so notify Licensor in writing at least thirty (30) days prior to the day the work is to begin. In such event, Licensee shall bear a proportionate share of the total costs incurred by Licensor to make Licensor Poles accessible.

F. In the event Licensor is required to move the location of, or replace, any Licensor Poles for reasons beyond its control, Licensee concurrently shall relocate Licensee's Attachments. Licensee shall be solely responsible for the costs of the relocation of Licensee's Attachments. When it is mutually agreed that it is in the best interest of Licensor and Licensee, Licensor may, after proper notification has been provided, transfer Licensee's Attachments at the same time that Licensor transfers its facilities and shall invoice Licensee for the actual costs incurred in performing the transfer of Licensee's Attachments.

13. EMERGENCY RESTORATION

A. In the event of an emergency, restoration procedures may be affected by the presence of Licensee's Attachments. While Licensor shall not be responsible for the repair of damaged Attachments, Licensor shall nonetheless control access to its Poles if the restoration is to be achieved in an orderly fashion.

B. Where Licensor and Licensee are involved in emergency restorations, access to Licensor's Poles will be controlled by Licensor according to the following guidelines.

1. Service Disruptions/Outages

- a) While exercising its right to first access, Licensor shall make all reasonable efforts to grant access to as many other entities with attachments as is reasonably safe.
- b) Where simultaneous access is not possible, Licensor will grant access on first come, first served basis.

2. Service Affecting Emergencies

- a) While exercising its right to first access, Licensor shall make all reasonable efforts to grant access to as many other entities with attachments as is reasonably safe.
- b) Where Licensor is unable to grant simultaneous access to all other entities with attachments, access will be granted according to the level of damage to the attachments of each entity and the likelihood that a given level of damage will result in service disruption. Where the likelihood that a service disruption will result is not clearly discernible, access will be on a first come, first served basis.

C. Without limiting any other indemnification or hold harmless provisions of this Agreement, Licensee agrees that any decision by Licensor regarding access to its Attachments, or any action or failure to act by Licensor, under this section shall not be the basis for any claim by Licensee against Licensor for any damage to Licensee's Attachments or disruption of Licensee's Services, or any other direct or indirect damages of any kind whatsoever incurred by Licensee.

14. FAILURE TO PLACE ATTACHMENTS

Once Licensee has been issued a License, Licensee shall have ninety (90) calendar days from the date of the License was issued to begin the placement of its Attachments on the Licensor Poles covered by the License. If Licensee has not begun placing its Attachments within the ninety (90) day period, Licensee shall so advise Licensor with a written explanation and notice for the delay. If Licensee fails to advise Licensor of its delay by notice thereof or if Licensee fails to act in good faith by not making a bona fide effort to begin placing its Attachments within the ninety (90) calendar days prescribed by this section, the License shall be automatically rescinded by Licensor and deemed null and void, and Licensee shall have no further right to place the Attachments pursuant to such voided License.

15. ABANDONMENT

Nothing in this Agreement shall prevent or be construed to prevent Licensor from abandoning, selling, assigning, or otherwise disposing of any Poles. Licensor shall notify Licensee of any sale, assignment, or other disposition of any Poles or other Licensor property used for Licensee's Attachments.

16. INSPECTIONS AND INVENTORIES

A. **Post construction and/or periodic inspection of Licensee Attachments.** Licensor shall have the right, but not the obligation, to make a post construction inspection and periodic inspections at any time of any part of Licensee's Attachments on Poles and any other associated facilities for the limited purpose of determining whether Licensee's Attachments are in compliance with the terms of this Agreement and any Licenses issued hereunder. Such inspections shall be conducted at Licensor's expense with the exception of (1) a post construction inspection, (2) follow-up inspection to confirm remedial action after an observed Licensee violation of the requirements of this Agreement; and (3) inspection of Licensee Facilities in compliance with a specific mandate of appropriate governmental authority, for which inspections the cost shall be borne solely by Licensee.

B. Inventories. Upon written notice to Licensee, the total number and location of Licensee's Attachments on Licensor's Poles may be determined, at Licensor's discretion, through a survey which may be made not more than once per calendar year by Licensor. If so requested, Licensee and /or any other entity owning or jointly using the Poles with Licensor may participate in the survey. The costs incurred by Licensor to conduct the survey shall be reimbursed to Licensor by Licensee upon demand by Licensor regardless of whether or not Licensee participates in the survey. If the Attachments of more than one licensee are surveyed, each such licensee shall contribute a proportionate share of the costs reimbursed to Licensor.

C. No Duty to Licensee. Neither the act of inspection or survey by Licensor of Licensee's Attachments nor any failure to inspect such Attachments shall operate to impose on Licensor any liability of any kind whatsoever or to relieve Licensee of any responsibility, obligations or liability under this Agreement, any License issued hereunder, or applicable law, or to any third party contractor, Licensee Contractor, or otherwise.

17. UNAUTHORIZED ATTACHMENTS

A. If any Licensee Attachment shall be found on Poles for which no License has been granted by Licensor pursuant to the terms of this Agreement ("Unauthorized Attachment"), Licensor, without prejudice to its other rights or remedies under this Agreement or otherwise, may:

1. impose charges as set forth herein, and
2. require Licensee to remove such Unauthorized Attachment or Licensor may remove such Unauthorized Attachment without liability and the expense of removal shall be borne by Licensee.

B. For the purpose of determining the charges, Licensee shall pay an amount per Unauthorized Attachment equal to the Pole Attachment Fee that would have applied if Licensee had properly obtained a License based upon the then current Attachment Rate for the number of years the Unauthorized Attachment have existed (or, if that cannot be determined, the number of years since the most recent inventory or five (5) years, whichever is less), plus interest at a rate the greater of 1.5% per month or the maximum allowed by law. In addition, if the Unauthorized Attachment is discovered during a survey where Licensee declined to participate an additional fee of \$100 per Unauthorized Attachment shall be charged to Licensee. Licensee agrees and acknowledges in the event of an Unauthorized Attachment actual damages would be difficult to determine and the charges described herein are liquidated damages, not penalties, and represent a fair and reasonable estimate of the damages which may be incurred by Licensor for Unauthorized Attachments on Licensor's Poles including wear and tear, lost revenue, increased maintenance and repair costs for having to work on a Pole where the owner of a facility is unknown, and the risk of liability for safety violations that may be the result of an Unauthorized Attachment.

C. Any such charge as set forth in Section 17(B) imposed by Licensor shall be in addition to its rights to any other sums due and payable, including without limitation Make Ready Work costs, the actual costs of any audit or survey which established the existence of the Unauthorized Attachment and to any claims to said fees.

D. No act by Licensor with regard to any unauthorized use shall be deemed as a ratification or the licensing of the unauthorized use, and if any License should subsequently be issued, after application and payment of all applicable fees therefore, said License shall not operate retroactively or constitute a waiver by Licensor of any of its rights or privileges under this Agreement or otherwise, and Licensee shall be subject to all liabilities, obligations and responsibilities of this Agreement in regard to said unauthorized use from its inception.

E. An Unauthorized Attachment shall include, but not limited to:

1. an Attachment to Poles which is not identified in any License issued in accordance with this Agreement;
2. an Attachment that occupies more space than that allocated to Licensee by Licensor in a License;
3. an Attachment that is not placed in accordance with the provisions of this Agreement or the appropriate License issued pursuant to this Agreement, unless Licensee can demonstrate to Licensor's reasonable satisfaction that said misplacement is not due to any act or omission of Licensee or Licensee's agents;
4. an addition or modification by Licensee to its pre-existing Attachment(s) that impairs the structural integrity of the involved Licensor Poles.
5. an Attachment that consists of facilities owned or controlled by, and for the use of a party other than Licensee that is overlashed to Licensee Attachments without approval by Licensor as required under this Agreement.

F. Once Licensor has notified Licensee of an Unauthorized Attachment. Licensee shall submit an Exhibit B Application for Pole License to request an authorization for the Attachment. An Exhibit B Application for Pole License submitted per this provision will be treated like any other Exhibit B Application for Pole License subject to this Agreement. Licensee will be responsible for all fees associated with an Exhibit B Application for Pole License (as identified in this Agreement). If an Exhibit B Application for Pole License is not received by Licensor within ten (10) days of Licensor's notice of an Unauthorized Attachment, Licensee has sixty (60) days from the date of the Unauthorized Attachment notification to vacate the Pole. If Licensee fails to remove Licensee's facilities within such sixty (60) day period, Licensor shall have the right to remove Licensee's facilities at Licensee's expense and without any liability on the part of Licensor for damage or injury to Licensee's facilities or disruption of Licensee's Services.

18. COMPLIANCE WITH LAW, ASSUMPTION OF RISK, AND DISCLAIMER OF WARRANTIES

A. Notwithstanding anything to the contrary in this Agreement, Licensee shall ensure that any and all activities it undertakes pursuant to this Agreement shall comply with all applicable laws, including, without limitation, all applicable provisions of:

1. Workers' compensation laws

2. Unemployment compensation laws
3. The Federal Social Security Law
4. The Fair Labor Standards Act, and
5. All laws, regulations, rules, guidelines, policies, orders, permits and approvals or any governmental authority relating to environmental matters including but not limited to Hazardous Materials and/or Occupational Safety and Health Act (“OSHA”).

B. LICENSEE ACKNOWLEDGES AND AGREES THAT LICENSOR DOES NOT MAKE ANY REPRESENTATION OR WARRANTIES AS TO THE CONDITION OR SAFETY OF LICENSOR’S POLES ANY ASSOCIATED FACILITIES AND EQUIPMENT ON, WITHIN OR SURROUNDING THE SAME, OR THE PREMISES SURROUNDING THE SAME, LICENSEE HEREBY ASSUMES ALL RISKS OF ANY DAMAGE. INJURY OR LOSS OF ANY NATURE WHATSOEVER CAUSED BY OR IN CONNECTION WITH THE USE OF POLES AND ASSOCIATED FACILITIES AND EQUIPMENT ON, WITHIN OR SURROUNDING THE SAME, AND THE PREMISES SURROUNDING THE SAME AND LICENSEE IS SOLELY RESPONSIBLE FOR ALL ALLEGED DAMAGES CLAIMED BY THIRD PARTIES ACCESSING OR WORKING ON OR NEAR LICENSOR’S POLES.

C. EXCEPT AS OTHERWISE PROVIDED HEREIN, LICENSOR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED, WITH REGARD TO THIS AGREEMENT AND ANY LICENSE ISSUED HEREUNDER INCLUDING, WITHOUT LIMITATION, ACCESS TO LICENSOR’S POLES OR OTHER FACILITIES.

19. LICENSEE CONTRACTOR QUALIFICATIONS

- A.** The parties acknowledge that from time to time Licensee may use a Licensee Contractor to perform work for Licensee on, within or in Licensor’s Poles.
- B.** Licensee represents and warrants that any of its employees or Licensee Contractors shall not climb or work on any of Licensor’s Poles, or work within Licensor’s Right-Of-Way unless such person has the training, skill, and experience required to recognize potentially dangerous conditions relating to Poles and to perform the work safely.
- C.** Licensee assumes all risk of Licensee Contractors and agrees to indemnify, defend and hold harmless Licensor from all claims, losses, damages and liabilities, costs and expenses (including, but not limited to, reasonable attorney’s fees) associated thereto in accordance with the indemnification provision of this License Agreement.
- D.** When Licensee Contractors are working on, within or in the vicinity of any part of Licensor’s Poles or Right-Of-Way, all such Licensee Contractors shall follow procedures which Licensee deems appropriate for the protection of persons and property. Licensee shall be responsible at all times for determining and implementing the specific steps required to protect persons and property at the site. Licensee will provide all traffic control and warning devices required to protect pedestrian and vehicular

traffic, workers and property from danger. Licensee has sole responsibility for the safety of all its employees and Licensee Contractors, for the safety of bystanders, and for insuring that all operations conform to terms and conditions set forth in this Agreement. Licensor reserves the right to suspend Licensee's activities on, within or in the vicinity of Licensor's Poles or Right-Of-Way if, in Licensor's sole judgment, any hazardous condition arises due to the activity (including both acts and omissions) of any Licensee Contractor or Licensee employee, which suspension shall cease when the condition has been rectified.

E. Licensee represents and warrants that all Licensee Contractors shall maintain the same insurance coverage and limits as are required of Licensee under this Agreement, and if not Licensee's insurance will provide such coverage.

F. Licensee acknowledges that all Licensee Contractors are not Licensor's employees or agents and Licensee assumes full responsibility for their actions or omissions to act. Licensee shall be solely responsible for the payment of compensation of Licensee's employees, contractors or agents assigned to perform work hereunder and such employees, contractors and agents shall be informed that they are not entitled to the provision of any Licensor benefits. Licensor shall not be responsible for payment of workman's compensation, disability benefits, and unemployment insurance or for withholding or paying employment related taxes for any employee of Licensee, but such responsibility shall be solely that of Licensee. In the event that any federal, state or local government agency, any court or any other applicable entity determines that the personnel provided by Licensee or any permitted Licensee Contractor are employees of Licensor for any purpose, Licensee agrees to indemnify, defend and save harmless Licensor from all liabilities, costs, and expenses (including, but not limited to, reasonable attorney fees) associated with such determination in accordance with the indemnification provision of this License Agreement.

G. Any work by Licensee Contractors on, within or in Licensor's Poles or Right-Of-Way shall be done only when specific authorization for such work has been obtained in writing in advance from Licensor pursuant to the terms and conditions of this Agreement. The parties agree that all work shall be performed according to existing industry standards and practices and the requirements and specifications set forth in this Agreement and any License issued hereunder.

20. DEFAULT

A. In addition to other events of defaults defined anywhere else in this Agreement, any one of the following shall be deemed the occurrence of a default under this Agreement:

1. failure by Licensee to pay when due any fee or other sum required to be paid under the terms of this Agreement.
2. failure by either party to perform or observe any other term, condition, covenant, obligation, or provision of this Agreement and such default continues for a period of thirty (30) days after written notice thereof from the other party (provided that if such default is not curable within a thirty (30) day period, the period may be extended if the party substantially commences to cure such default and proceeds diligently thereafter to effect such cure).

3. the filing of any tax or lien against Poles because of any act or omission by Licensee which is not bonded or discharged within thirty (30) days of the date of notice to Licensee that such lien has been filed;
4. Licensee's voluntary or involuntary bankruptcy;
5. Licensee's use or maintenance of its Attachments in violation of any law or regulation, or in aid of any unlawful act or undertaking;
6. if any authorization which may be required of Licensee by any governmental or private authority for the placement, operation, or maintenance of Licensee's Attachments is denied or revoked.

B. In the event of a default and subject to any other applicable provision of this Agreement, the non-defaulting party, without any further notice to the defaulting party (except where expressly provided for below or required by applicable law), may do any one or more of the following:

1. perform on behalf and at the expense of the defaulting party, any obligation of the defaulting party under this Agreement which the defaulting party has failed to perform and of which the non-defaulting party shall have given the defaulting party notice, the cost of which performance shall be paid by the defaulting party to the non-defaulting party upon demand;
2. terminate this Agreement by giving sixty (60) days written notice of such termination to Licensee and remove Licensee's Attachments and store Licensee's facilities in a public warehouse or elsewhere at the expense of and for the account of Licensee without Licensor being deemed guilty of trespass or conversion, and without Licensor becoming liable for any loss or damages to Licensee occasioned thereby; or
3. exercise any other legal or equitable right or remedy that the non-defaulting party may have.

C. The defaulting party shall repay to the non-defaulting party upon demand any costs and expenses incurred by the non-defaulting party (including, without limitation, reasonable attorneys' fees) in successfully enforcing this Agreement.

D. Upon termination of this Agreement by the non-defaulting party, the defaulting party shall remain liable to the non-defaulting party for any and all fees, other payments and damages which may be due or sustained in accord with this Agreement prior to such termination, all reasonable costs, fees and expenses, including, without limitation, reasonable attorney' fees incurred by the non-defaulting party in pursuit of its remedies hereunder.

E. All rights and remedies of the non-defaulting party set forth in this Agreement shall be cumulative and none shall exclude any other right or remedy, now or hereafter allowed by or available under any statute, ordinance, rule of court, or the common law, either at law or in equity, or both.

21. INDEMNIFICATION AND LIMITATION OF LIABILITY

A. Licensee shall compensate Licensor for the full actual loss, damage or destruction of Licensor's property that in any way arises from or is related to this Agreement or activities undertaken pursuant to this Agreement (including, without limitation, the installation, construction, operation, or maintenance of Licensee's Attachments).

B. Licensee agrees to defend, indemnify, protect and hold harmless Licensor and its officers, directors, employees, shareholders, successors, assigns, agents, affiliates, representatives, partners, and contractors from and against any and all claims, actions, administrative proceedings (including, without limitation, informal proceedings), judgments, damages, penalties, fines, cost, liabilities, interests, or loss, including, without limitation, reasonable attorneys' fees and expenses, consultant fees, and expert fees, together with all other costs and expenses of any kind or nature suffered by or asserted against Licensor in any way arising out of or connected with this Agreement or activities undertaken pursuant to this Agreement (including, without limitation, the installation, construction, operation or maintenance of Licensee's Attachments, unless caused solely by the negligence or willful misconduct of Licensor or Licensor's affiliates, agents, officers, employees and assigns). Licensee expressly assumes all liability for actions by its affiliates, agents, officers, employees, or Licensee Contractors and expressly waives any immunity from the enforcement of this indemnification provision that might otherwise be provided by workers' compensation law or by other state or federal laws.

C. Without limiting any of the foregoing, Licensee assumes all risk of, and agrees to relieve Licensor of any and all liability for, loss or damage (and the consequences of loss or damage) to any facilities placed on Licensor's property and any other financial loss sustained by Licensee, except to the extent caused by the sole negligence or willful misconduct on the part of Licensor or Licensor's agents, officers, employees, and assigns.

D. Without limiting the foregoing, Licensee expressly agrees to indemnify, defend, and hold harmless Licensor and Licensor's agents, officers, employees and assigns from any and all claims asserted by end users/customers of Licensee in any way arising out of or in connection with this Agreement or Licensee's Attachments, except to the extent caused solely by the negligence or willful misconduct of Licensor or Licensor's agents, officers, employees, and assigns, or its contractors.

E. Notwithstanding anything to the contrary in this Agreement, Licensee further shall indemnify and hold harmless Licensor, its agents, officers, employees, and assigns from and against any claims, liabilities, losses, damages, fines, penalties, and costs (including, without limitation, reasonable attorneys' fees) whether foreseen or unforeseen, which the Licensor suffers or incurs because of:

1. any discharge of Hazardous Materials resulting from acts or omissions of Licensee, Licensee Contractors or Licensee's predecessor in interest;
2. acts or omissions of Licensee, its agents, employees, Licensees, or representatives in connection with any cleanup required by law, or
3. failure of Licensee or Licensee Contractors to comply with Environmental, Safety and Health Laws.

F. Licensee shall indemnify, protect, and hold harmless Licensor from and against any and all claims for libel and slander, copyright and/or patent infringement arising directly or indirectly by reason of installation of Licensee's Attachments pursuant to this Agreement.

G. In the event of any claim, demand or litigation specified the indemnity provision, the party to be indemnified (the "Indemnified Party") shall give prompt notice to the other party (the "Indemnifying Party") of such claim, demand or litigation. The Indemnifying Party shall have sole control of the defense of any action or litigation on such a claim or demand (including the selection of appropriate counsel) and all negotiations for the settlement or compromise of the same, except that the Indemnifying Party may not make any non-monetary settlement or compromise without the Indemnified Party's consent, which consent shall not be unreasonably withheld. The Indemnified Party shall cooperate with the Indemnifying Party in the defense and/or settlement of any claim, demand or litigation. Nothing herein shall be deemed to prevent the Indemnified Party from participating in the defense and/or settlement of any claim, demand or litigation by the Indemnified Party's own counsel at the Indemnified Party's own expense.

H. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THE AGREEMENT, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES SUFFERED BY SUCH PARTY OR BY ANY SUBSCRIBER, CUSTOMER OR PURCHASER OF SUCH PARTY FOR LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, WHETHER BY VIRTUE OF ANY STATUTE, IN TORT OR IN CONTRACT, UNDER ANY PROVISION OF INDEMNITY, OR OTHERWISE, REGARDLESS OF THE THEORY OF LIABILITY UPON WHICH ANY SUCH CLAIM MAY BE BASED OR WHETHER IT (a) HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES OR (b) IS NEGLIGENT.

22. INSURANCE

A. Licensee shall obtain and maintain, in full force and effect at all times, during operations covered by this Agreement, such minimum insurance as will cover the obligations and liabilities of Licensee, its agents, and its employees which may arise from the operations under this Agreement. Insurance shall have limits of not less than Commercial General Liability policy of minimum limits of:

General Aggregate	\$ 2,000,000 per policy period
Products/Completed Operations Aggregate	\$ 2,000,000 per policy period
Personal Injury/Advertising	\$ 2,000,000 per occurrence
Each Occurrence	\$ 2,000,000 per occurrence
Fire Legal Liability	\$ 50,000 any one fire

B. The policy will be endorsed to show the above aggregate limits applying to "each" job site or, as an alternative, the General Aggregate will be increased to \$4,000,000 per policy period. Policy will also specifically state the coverage applies to all operations conducted by the Licensee, its employees, or agents on behalf of Licensee or subsidiary.

C. Where the performance of the work involves structural property, underground property, or blasting, Licensee's Commercial General Liability insurance policy shall provide coverage to the insured for legal liability arising from operations under this Agreement for property damage:

1. arising out of blasting,
2. arising out of collapse of, or structural injury to, any building or structure or
3. To underground facilities and utilities.

D. Other general liability forms are acceptable in lieu of the Commercial General Liability Form however they are not to be used without written approval from Licensor.

1. Business Automobile Liability policy with minimum limits of:

Bodily Injury	\$2,000,000 per accident
Property Damage	\$ 2,000,000 per accident
OR	
Combined Single Limit	\$ 2,000,000 per accident

The policy will be issued using symbol "1 - any auto" coverage.

2. Workers Compensation:

Part 1 - Medical Benefits Statutory

Part 2 - Employer's Liability as indicated:

Bodily Injury by Accident	\$ 1,000,000 each accident
Bodily Injury by Disease	\$ 1,000,000 each employee
Bodily Injury by Disease	\$ 1,000,000 policy limit

E. The policy will show the state in which operation on behalf of the Licensee and/or subsidiary is being conducted. For operations conducted within monopolistic (state fund) states, Licensee will furnish a certificate of compliance from the appropriate state fund administrator.

F. In each and every policy except workers' compensation, Licensor and its subsidiaries shall be named an "additional insured" with respect to activities performed on behalf of the Licensee and its subsidiaries.

G. Coverage provided by the policies listed in this paragraph will be issued by an insurance company, licensed in the state in which operations on behalf of the Licensee are to be conducted. It is acceptable to use both primary and excess/umbrella policies to obtain necessary limits. The worker's compensation policy must contain a waiver of subrogation clause.

H. Licensee will furnish to Licensor, a certificate evidencing insurance coverage under sub-paragraphs 22(A) and (D). Such certificate or Licensee shall provide for a thirty (30) day prior notice to the Licensor of any cancellation or material changes in coverage and shall be signed by a legal representative of the issuing insurance company. The certificate of insurance shall be sent to Licensor's contact identified in Exhibit E.

I. The provisions of sub-paragraphs 22 (A) and (D) shall also apply to all Licensee Contractors and Licensee shall be responsible for their compliance herewith.

23. NOTICES

Any and all notices to a party required or permitted under this Agreement shall be in writing and shall be: (a) delivered personally; (b) delivered by express overnight delivery service; (c) mailed, via certified mail or first class U.S. Postal Service, with postage prepaid, and a return receipt requested; or (d) delivered by electronic mail; provided that a paper copy is also sent via methods (a), (b), or (c) of this Section. Notices will be deemed given as of the earliest of: the date of actual receipt; the next business day when sent via express overnight delivery service; five (5) calendar days after mailing in the case of first class or certified U.S. Postal Service, or on the date set forth on the confirmation produced by the sent confirmation when sent prior to 5:00 p.m. in the recipient's time zone, but the next business day when delivered at 5:00 p.m. or later in the recipient's time zone. Notices will be addressed to the parties as set forth in Exhibit E as may be updated in writing by the parties from time to time in accordance with method set forth under this Section 23.

24. CONFIDENTIALITY

Neither party shall at any time disclose, provide, demonstrate or otherwise make available to any third party any of the terms or conditions of this Agreement or any materials provided by either party specifically marked as confidential, except upon written consent of the other party, or as may be required by applicable law or governmental authorities. Notwithstanding the foregoing, nothing in this Section shall prevent disclosure to a party's authorized legal counsel who shall be subject to this confidentiality section, nor shall it preclude the use of this Agreement by the parties to obtain financing, to make or report matters related to this Agreement in any securities statements, or to respond to any requests by governmental or judicial authorities; provided, however, that any such disclosure shall be limited to the extent necessary, and shall be made only after attempting to obtain confidentiality assurances. Notwithstanding the foregoing, prior to making any disclosure in response to a request of a governmental authority or legal process, the party called upon to make such disclosure shall provide notice to the other party of such proposed disclosure sufficient to provide the other with an opportunity to timely object to such disclosure. Notwithstanding the foregoing, Licensor may, without notice to Licensee: (i) negotiate or enter into any agreement with any other person(s) or entity(ies) that is identical or similar to this Agreement; and (ii) provide the text of all or part of this Agreement to any other party, so long as Licensor shall redact therefrom all references to Licensee and shall not associate such text with Licensee or identify Licensee as having agreed to such text or terms.

25. DISPUTE RESOLUTION

A. Except in the case of:

1. a suit, action, or proceeding by one party to compel the other party to comply with its obligation to indemnify the other party pursuant to this Agreement, or
2. a suit, action or proceeding to compel either party to comply with the dispute resolution procedures set forth in this section, the parties agree to use the following procedure to resolve any dispute, controversy, or claim arising out of or relating to this Agreement or its breach.

B. At the written request of a party, each party shall designate a knowledgeable, responsible representative to meet and negotiate in good faith to resolve any dispute, controversy, or claim arising

under this Agreement. The parties intend that these negotiations be conducted by non-lawyer, business representatives. The substance of the negotiations shall be left to the discretion of the representatives. Upon mutual agreement, the representatives may utilize other alternative nonbinding dispute resolution procedures such as mediation to assist in the negotiations. Discussions and correspondence between the representatives for the purposes of these negotiations shall be treated as confidential, undertaken for purposes of settlement, shall be exempt from discovery and production, and shall not be admissible in any subsequent proceeding without the concurrence of all parties. Documents identified in or provided during such negotiations, which are not prepared for purposes of the negotiations, shall not be so exempt and may, if otherwise admissible, be admitted as evidence in any subsequent proceeding.

C. If a resolution of the dispute, controversy or claim is not reached within ninety (90) days of the initial written request referred to in this Section 25, the dispute, controversy, or claim may be filed with the State utility commission or the Federal Communication Commission, if applicable, for review and determination, provided the party invoking the commission's intervention process has in good faith negotiated, or attempted to negotiate, with the other party pursuant to this Section 25.

D. Except as otherwise provided in this Agreement under the Indemnification or Default provision or elsewhere, each party shall bear its own costs, including attorneys' fee, incurred in connection with any of the foregoing procedures. A party seeking discovery shall reimburse the responding party the cost of reproducing documents (to include search time and reproduction time costs).

26. TAXES

Each party shall pay all taxes and assessments lawfully levied on its own property and services subject to this Agreement.

27. WAIVER

Failure by either party to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in full force and effect.

28. NO THIRD PARTY BENEFICIARIES

Except as otherwise provided in this Agreement, this Agreement is intended to benefit only the parties and may be enforced solely by the parties, their successors in interest or permitted assigns. It is not intended to, and shall not, create rights, remedies or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the parties, except as provided herein.

29. FORCE MAJEURE

Neither party shall be liable for any delay or failure in performance of any part of this License Agreement or License issued hereunder from any cause beyond its reasonable control and without its fault, omission or negligence, such as acts of God, acts of civil or military authority, embargoes, epidemics, war, terrorist acts, riots, insurrections, fires, explosions, earthquakes, nuclear accidents, floods, power blackouts, labor strikes, lockouts or work stoppages or severe weather ("Force Majeure Event"). In the event of a Force Majeure Event, upon giving prompt notice to the other party, the due date for performance by the affected party of its original obligation(s) shall be extended by a term equal to the

time lost by reason of the Force Majeure Event. In the event that the affected party is able to partially perform its obligations, it shall perform its obligations at a performance level no less than that which it uses for its own operations.

30. ASSIGNMENT

Licensee shall not assign; transfer or sublet the privileges hereby granted, or sell, lease or otherwise permit the use of its facilities on or any part thereof (all of the foregoing being "Transfers"), without prior consent in writing of Licensor. No such consent granted by Licensor shall be effective until Licensee's assignee, sublessee or other transferee has agreed, on an enforceable separate document signed and delivered to Licensor, to assume all obligations and liabilities of Licensee under this Agreement. Licensor may condition such consent upon the assignee's sublessee's or transferee's agreement to reasonable additional or modified terms or conditions. If there is a change of control of Licensee, then Licensor shall have the right, in its reasonable discretion, immediately to terminate this Agreement in its entirety without further liability. Licensor may assign or otherwise transfer this Agreement or any of its rights and interests to any firm, corporation or individual, without the prior consent of Licensee.

31. APPLICABLE LAW

This Agreement, and the rights and obligations contained in it, shall be governed and construed under the laws of the state in which the Attachments hereunder are to be located. The terms and conditions of this Agreement shall be subject to any and all applicable laws, rules, regulations or guidelines now in effect and that subsequently may be prescribed by any federal, state or local governmental authority. To the extent required by any such prescribed law, rule, regulation or guideline, the Parties agree to modify, in writing, the affected term(s) and conditions(s) of this Agreement to bring them into compliance with such law, rule, regulation or guideline. Should any term of this Agreement be determined by a court or agency with competent jurisdiction to be unenforceable, all other terms of this Agreement shall remain in full force and effect.

32. WAIVER OF JURY TRIAL

Licensor and Licensee each expressly waive its right to a jury trial.

33. ENTIRE AGREEMENT, MODIFICATIONS, SURVIVAL AND CONFLICTS AND TARIFFS

A. This Agreement cancels and supersedes all previous agreements whether written or oral, except for any sums due thereunder, between Licensor and Licensee with respect to the Licensee's Attachments to Licensor's Poles; and there are no other provisions, terms or conditions to this Agreement except as expressed herein. All currently effective Licenses and authorizations for Attachments granted pursuant to such previous agreements shall continue in effect subject to the terms and conditions of this Agreement.

B. This Agreement may be amended or supplemented at any time only upon written agreement by the parties hereto. Notwithstanding the foregoing, all Exhibits, fees, Licensor procedures and specifications may be modified by Licensor upon thirty (30) day notice to Licensee.

C. Notwithstanding the termination of this Agreement for any reason, Section 18 Compliance with Laws, Assumption of Risk and Disclaimer of Warranties, Section 21 Indemnification and Limitation of

Liability, Section 22 Insurance, Section 24 Confidentiality and any other provision intended to survive, shall survive termination to the maximum extent permitted under applicable law. Notwithstanding any provisions to the contrary, all rights, remedies, or obligations which arose or accrued prior to the termination or expiration of the terms hereof shall survive and be fully enforceable for the applicable statute of limitations period.

D. It is the intent of the parties that the terms and conditions of this Agreement and any applicable Licensor's state tariffs be construed as being consistent where possible. However, in the event of a conflict or difference between the terms and conditions of this Agreement and Licensor's state tariff, the terms of the applicable state tariff shall control.

34. AUTHORITY AND COUNTERPARTS AND ELECTRONIC SIGNATURES

A. Each party represents and warrants that it is a corporation duly organized, validly existing and in good standing under the laws of the state in which the obligations under this License Agreement are to be performed. Each party warrants that it has full power and authority to execute and deliver this License Agreement and to perform its obligations hereunder.

B. This Agreement may be executed using facsimile or electronic signatures and such facsimile or electronic version of the Agreement shall have the same legally binding effect as an original paper version. This Agreement may be executed in counterparts, each of which shall be deemed an original.

LICENSOR

LICENSEE

(INSERT WIN ENTITY NAME)

(INSERT CATV/CLEC ENTITY)

BY: _____

BY: _____

NAME: _____

NAME: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

EXHIBIT A **DEFINITIONS**

“Application for Pole License” - A written request submitted in the form of Exhibit B from Licensee to Licensor requesting authorization to attach Licensee owned facilities to Poles in accordance with this Agreement.

“Attachment(s)” – any facilities, cables or equipment attached to Poles or any other property owned or controlled by Licensor.

“Effective Date” - is the date this Agreement is last signed by the parties.

“Force Majeure Event” – shall have the meaning set forth in Section 29 of the Agreement.

“Hazardous Materials” -

Any substance, material or waste now or hereafter defined or characterized as hazardous, toxic or dangerous as defined by the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”) of 1980, as amended, and other federal, state, and local health, safety, and environmental laws, ordinances, statutes, and rules, including but not limited to the Occupational Safety and Health Act (“OSHA”).

Any substance, material or waste now or hereafter classified as a contaminant or pollutant under any law, rules, ordinance, or authority.

Any other substance, material or waste, the manufacture, processing, distribution, use, treatment, storage, placement, disposal, removal or transportation of which is now or hereafter subject to regulation under any law, ordinance, statute, rule or regulation of any governmental body or authority.

“License” – is the specific nonexclusive and revocable permission from Licensor, in the form of a Licensor countersigned and returned Application for License, to Licensee authorizing Licensee to attach its facilities as applied for to Licensor Poles in accordance with this Agreement.

“Licensee Contractors” - shall have the meaning set forth in Section 10(D) of the Agreement.

“Make Ready Estimate” – is Licensor’s estimated cost to perform Make Ready Work on Licensor’s facilities on Poles to accommodate Licensee’s Attachment as requested in an Application for Pole License.

“Make Ready Work” - all Licensor, joint owner or other existing attacher work to prepare Licensor’s Poles and related facilities for the requested Attachment of Licensee’s facilities but not the actual placement of Attachments or administrative activities related to inquiries, verifications, requests or applications.

“Overlashing or overlashed” – lashing of an additional Licensee owned cable to Licensee’s own existing cable and/or strand attached to a Pole as set forth in Section 11 of this Agreement.

“Pole(s)” - a pole owned solely or jointly by Licensor or Poles owned by others to the extent that and for so long as Licensor has the right to permit others to be attached in the communications space.

“Pole Attachment Fee” - the fee paid annually per Attachment on a Pole. For billing purposes, a single Attachment includes the point of Attachment and all facilities located in the usable space on the Poles in the space assigned to Licensee (typically six inches above and six inches below the point of Attachment). If Licensee occupies more than one foot of usable space on Poles, separate Pole Attachment Fees shall apply to each one foot of space occupied.

“Right-of-Way” - right-of-way owned or controlled by Licensor.

“Unauthorized Attachment” – shall have the meaning set forth in Section 17(A) and 17(E) of the Agreement.

EXHIBIT B

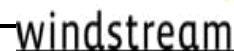
FORM APPLICATION FOR POLE LICENSE

NOTE TO LICENSEE IF LICENSEE CHOOSES NOT TO PROCEED WITH THE APPLICATION - LICENSEE WILL BE BILLED FOR LICENSOR/WINDSTREAM'S ENGINEERING AND ADMINISTRATIVE TIME.

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

**PROPOSAL #:
Submit in Dupli**

Name of Firm/Licensee Applying: _____ Contact Name, Phone # _____
 Street Address, City, ST, ZIP of Firm Applying _____ EMAIL ADDRESS _____
 Licensee Authorized Signature & Date: _____



By this application & signature, Licensee agrees to pay all engineering and administrative fees associated with this application even if Licensee chooses NOT to proceed with the project. All ESTIMATED fees, including engineering & make-ready, MUST BE PAID IN FULL UP FRONT. NON PAYMENT OF FEES WILL RESULT IN THIS APPLICATION AND ALL FUTURE APPLICATIONS BEING PLACED ON HOLD. NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Town, Zip Code	Height, Class, Ownership of highest Pole	Hgt of highest Tel Cable	Hgt of highest Fiber Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	# & type of Attachments to attach	Height of Licensee	Licensee Work Description	
1											
2											
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ESTIMATED TOTAL COSTS											

EXHIBIT B CONTINUED

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: [Windstream .jointuse@windstream.com](mailto:Windstream_jointuse@windstream.com)

Acknowledged and Agreed to by Licensor: _____
 Name Title Date

Windstream Pole Attachment Data Sheet
EXHIBIT B - PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER																	
STREET LOCATION		NAME OF ATTACHER																	
CITY/SBORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME																
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy																			
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT																
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		TOP OF CONDUIT RISER HEIGHT																	
		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; if yes => <input type="checkbox"/> Primary <input type="checkbox"/> Secondary																	
MAKE READY WORK	REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, PROVIDE ADDITIONAL DETAIL																	
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: center;">POLE NO. =></td> <td style="width:25%; text-align: center;">BEFORE</td> <td style="width:25%; text-align: center;">AFTER</td> </tr> <tr> <td style="text-align: center;">*TYPE OF POWER ATTACHMENT =></td> <td style="text-align: center;"><input type="checkbox"/> Neutral</td> <td style="text-align: center;"><input type="checkbox"/> Secondary</td> </tr> </table>			POLE NO. =>	BEFORE	AFTER	*TYPE OF POWER ATTACHMENT =>	<input type="checkbox"/> Neutral	<input type="checkbox"/> Secondary										
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	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%; text-align: center;">MID-SPAN HEIGHT Fl.</td> <td colspan="3" style="text-align: center;">SPAN CROSSES OVER (Check all that apply)</td> </tr> <tr> <td></td> <td style="text-align: center;"><input type="checkbox"/> Body of Water</td> <td style="text-align: center;"><input type="checkbox"/> Street</td> <td style="text-align: center;"><input type="checkbox"/> Driveway</td> <td style="text-align: center;"><input type="checkbox"/> Field</td> <td style="text-align: center;"><input type="checkbox"/> Interstate</td> </tr> <tr> <td></td> <td style="text-align: center;"><input type="checkbox"/> Swimming Pool</td> <td style="text-align: center;"><input type="checkbox"/> Building</td> <td style="text-align: center;"><input type="checkbox"/> Railroad</td> <td style="text-align: center;"><input type="checkbox"/> Yard</td> <td style="text-align: center;"><input type="checkbox"/> Parking Lot</td> </tr> </table>			MID-SPAN HEIGHT Fl.	SPAN CROSSES OVER (Check all that apply)				<input type="checkbox"/> Body of Water	<input type="checkbox"/> Street	<input type="checkbox"/> Driveway	<input type="checkbox"/> Field	<input type="checkbox"/> Interstate		<input type="checkbox"/> Swimming Pool	<input type="checkbox"/> Building	<input type="checkbox"/> Railroad	<input type="checkbox"/> Yard	<input type="checkbox"/> Parking Lot
	MID-SPAN HEIGHT Fl.	SPAN CROSSES OVER (Check all that apply)																	
		<input type="checkbox"/> Body of Water	<input type="checkbox"/> Street	<input type="checkbox"/> Driveway	<input type="checkbox"/> Field	<input type="checkbox"/> Interstate													
	<input type="checkbox"/> Swimming Pool	<input type="checkbox"/> Building	<input type="checkbox"/> Railroad	<input type="checkbox"/> Yard	<input type="checkbox"/> Parking Lot														
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NOTE																			

EXHIBIT C

REMOVAL NOTICE AND LICENSE SURRENDER FORM

NOTIFICATION OF SURRENDER

Notification No. _____ **Date:** _____
City & State: _____

In accordance with the terms and conditions of the license agreement between us, dated _____, notice is hereby given that the License covering Attachments to the outside plant structures, as shown on the attached sketch, is surrendered.

Licensee: _____
Signature: _____
By (Print/Type): _____
Title: _____
Date: _____

Date Surrender Notice Received: _____

Licensor: _____
Signature: _____
By (Print/Type): _____
Title: _____
Date: _____

EXHIBIT D

SCHEDULE OF RATES, FEES AND CHARGES

	Annual
Attachment Rate (per Attachment) **	\$ _____
Agreement Fee	\$ <u>400.00</u>
Application for Pole License Fee	\$ <u>75.00 per application</u>
Unauthorized Attachment fee	\$ <u>Per Section 17 of the Agreement</u>

**** If Attachments are in a non-tariffed state, the rental rate is subject to annual adjustment based on FCC Calculation.**

EXHIBIT E

NOTICES CONTACT INFORMATION

IF TO LICENSOR

Email: windstream.poles@windstream.com

(INSERT WINDSTREAM ENTITY)

PO Box 25410

Little Rock, AR 72221

IF TO LICENSEE:

ENGINEERING CONTACT FOR LICENSEE

Company Name	
Name of Responsible Party	
Address	
Phone	
Fax	
Email	

INVOICING / BILLING CONTACT FOR LICENSEE

Name	
Address	
Phone	
Fax	
Email	

From: Anita Larson <Anita.Larson@metronetinc.com>
Sent: Wednesday, November 22, 2017 9:27 AM
To: King, Daniel <Daniel.King@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Dan: Thanks for the quick response!

Michelle: Would you please email me Windstream's pole attachment agreement for Kentucky? I appreciate it. I look forward to working with you.

Thanks again!
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, November 22, 2017 9:24 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Anita:

Good to hear from you. The person that you want to speak with is Michelle McLaughlin. I have copied her on this response. She negotiates and manages our pole agreements and can provide you with our template for Kentucky.

I assume that you are asking so that MetroNet can begin the process of negotiating a pole attachment agreement with us in connection with its expansion into Lexington. Congratulations on the announcement.

Hope you have a great Thanksgiving!

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]

Sent: Wednesday, November 22, 2017 9:08 AM

To: King, Daniel <Daniel.King@windstream.com>

Subject: Pole Attachment

Dan: Do you know whom I would reach out to in order to get Windstream's pole attachment agreement for Kentucky?

Hope you have a great holiday!

Thanks!

Anita

Anita Larson

Vice President and Counsel

8837 Bond Street

Overland Park, KS 66214

Office: 812.213.1095

Mobile: 785.331.7296

Email: anita.larson@qservicesco.com

This email message and any attachments are for the sole use of the intended recipient(s). Any unauthorized review, use, disclosure or distribution is prohibited. If you are not the intended recipient, please contact the sender by reply email and destroy all copies of the original message and any attachments.

From: King, Daniel
Sent: Wednesday, November 22, 2017 9:24 AM
To: 'Anita Larson' <Anita.Larson@metronetinc.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

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Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: Lloyd, James

Sent: Thursday, January 18, 2018 10:49 AM

To: Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>; Edwards, Kimberly <Kimberly.Edwards@windstream.com>

Subject: RE: Pole Attachment tariff

Kim,

Will you send Anita a copy of our standard pole application and pole data sheet?

MetroNet will soon be applying to attach in Kentucky. They do not have a PAA with us in Kentucky but will be applying under the Kentucky Tariff. The normal charges and process will be the same.

Let me know if you have any questions or concerns.

Thank you,

James Lloyd

Manager – NOS | Windstream

11101 Anderson Drive | Little Rock, AR 72212

James.Lloyd@windstream.com

o: 501.748.7538 | m: 501.339.6594 | f: 330.486.4315

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]

Sent: Thursday, January 18, 2018 9:58 AM

To: King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: RE: Pole Attachment tariff

Good morning! Just want to confirm that you received the email below. Please let us know what forms we should use. We appreciate your help!

Thanks again,

Anita

Anita Larson

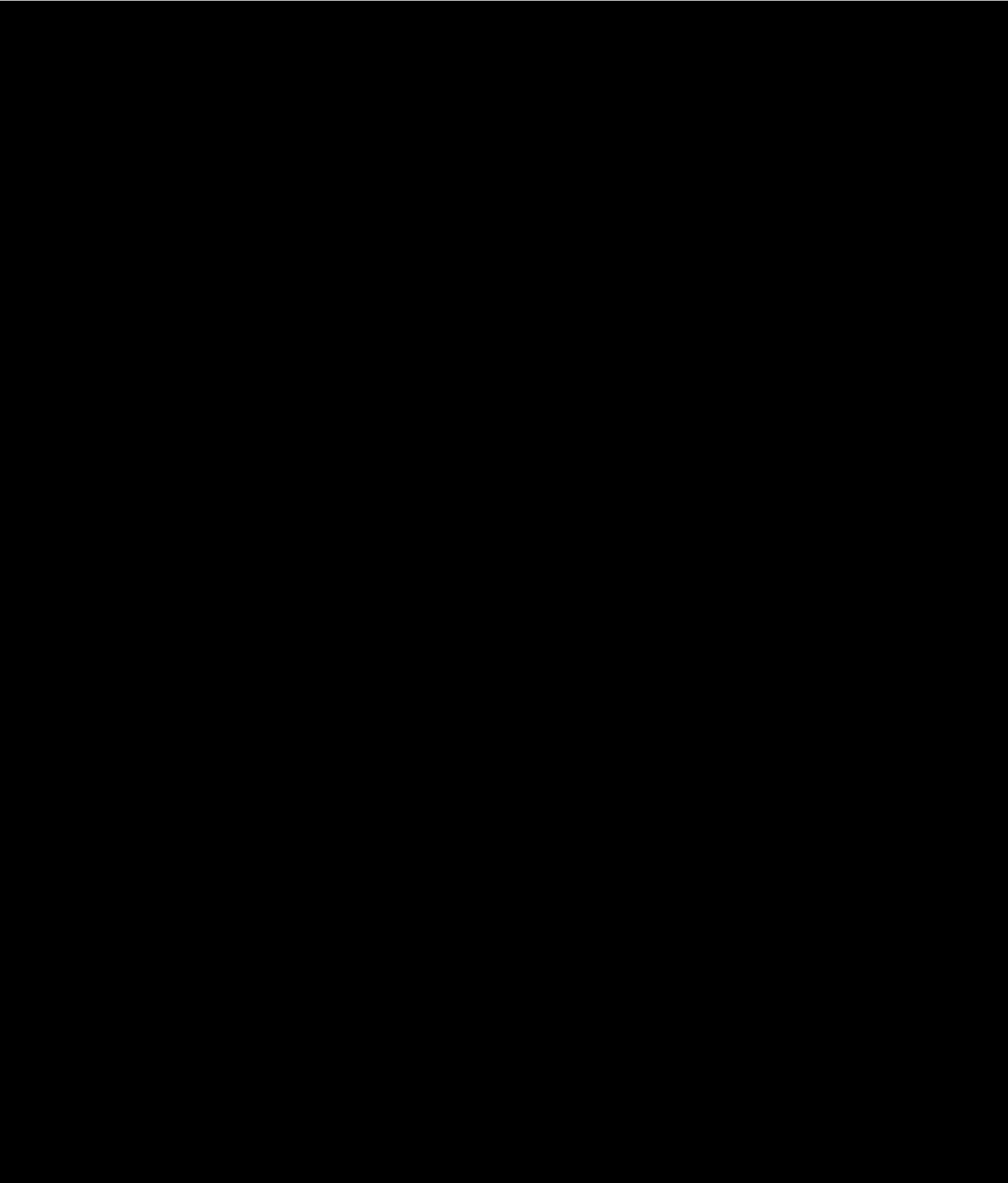
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com
Email: anita.larson@metronetinc.com

From: Anita Larson
Sent: Friday, January 12, 2018 4:58 PM
To: King, Daniel <Daniel.King@windstream.com>; 'McLaughlin, Michelle M' <Michelle.McLaughlin@windstream.com>; 'Lloyd, James' <James.Lloyd@windstream.com>
Subject: Pole Attachment tariff

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Sent: Thursday, January 18, 2018 9:58 AM

To: King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

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8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: Edwards, Kimberly

Sent: Thursday, January 18, 2018 11:46 AM

To: Lloyd, James <James.Lloyd@windstream.com>; Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>

Subject: RE: Pole Attachment tariff

Anita,

Please see the attached Windstream Pole Attachment Application and Pole Data Sheet. 25 poles is the maximum per application and a pole data sheet is required for each pole.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Lloyd, James

Sent: Thursday, January 18, 2018 10:49 AM

To: Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>; Edwards, Kimberly <Kimberly.Edwards@windstream.com>

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James Lloyd

Manager – NOS | Windstream

11101 Anderson Drive | Little Rock, AR 72212

James.Lloyd@windstream.com

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Overland Park, KS 66214

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Mobile: 785.331.7296

Email: anita.larson@qservicesco.com

NOTE TO LICENSEE IF LICENSEE CHOOSES NOT TO PROCEED WITH THE APPLICATION - LICENSEE WILL BE BILLED FOR LICENSOR/WINDSTREAM'S ENGINEERING AND ADMINISTRATIVE TIME.

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: _____

Submit in Duplicate

Name of Firm/Licensee Applying: _____ Contact Name, Phone # _____

EMAIL ADDRESS _____

Street Address, City, ST, ZIP of Firm Applying _____ Licensee Authorized Signature & Date: _____

By this application & signature, Licensee agrees to pay all engineering fees associated with this application even if Licensee chooses NOT to proceed with the project.

All **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**

NON PAYMENT OF FEES WILL RESULT IN THIS APPLICATION AND ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12	
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N	
1												
2												
3												
4												
5												
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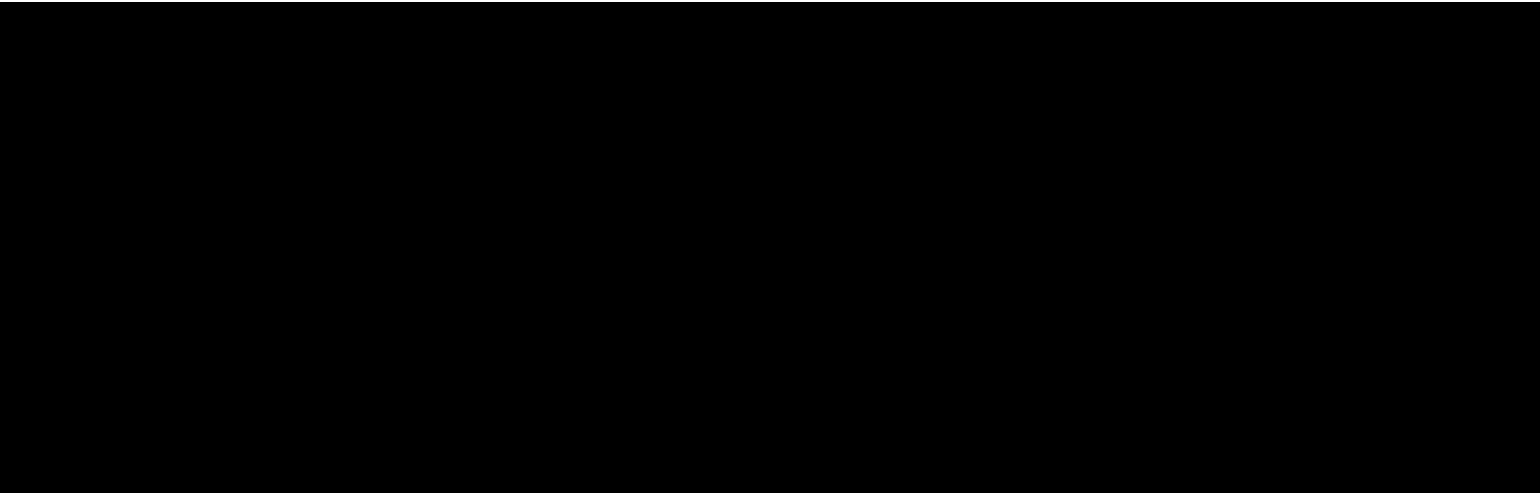
ESTIMATED TOTAL COSTS

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream Corporation, Attn: Windstream Joint Use via email at: Windstream.Jointuse@windstream.com

WIN3851

Acknowledged and Agreed to by Licensor: _____
Name
Title
Date



From: Mclaughlin, Michelle M
Sent: Wednesday, November 22, 2017 10:10 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>
Subject: RE: Pole Attachment

Good morning, Anita-

Lexington is in the Windstream Kentucky East territory. I also prepared a Windstream Kentucky West agreement in case you wanted all of Kentucky covered. Also attached is our application in excel format for easier use. Please contact me after your review. I look forward to working with you as well.

Michelle
Analyst II
319-790-6910

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, November 22, 2017 9:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Mclaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
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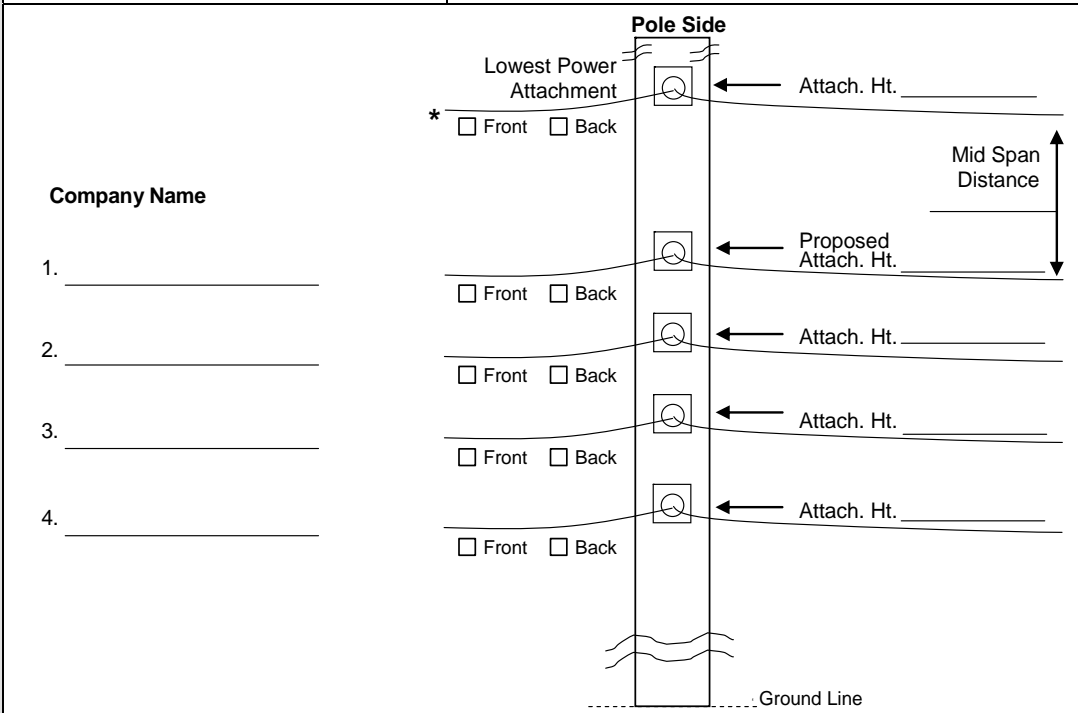
Windstream Pole Attachment Data Sheet

EXHIBIT B – PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER	
STREET LOCATION		NAME OF ATTACHER	
CITY/BORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy			
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT TOP OF CONDUIT RISER HEIGHT
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; If yes ➡ <input type="checkbox"/> Primary <input type="checkbox"/> Secondary	

MAKE READY WORK	REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, PROVIDE ADDITIONAL DETAIL
------------------------	---	-----------------------------------

POLE DRAWING	POLE NO. ➡	BEFORE	AFTER
	*TYPE OF POWER ATTACHMENT ➡	<input type="checkbox"/> Neutral <input type="checkbox"/> Secondary	



Company Name

1. _____

2. _____

3. _____

4. _____

SPAN	MID-SPAN HEIGHT Ft.	SPAN CROSSES OVER (Check all that apply)
		<input type="checkbox"/> Body of Water <input type="checkbox"/> Street <input type="checkbox"/> Driveway <input type="checkbox"/> Field <input type="checkbox"/> Interstate <input type="checkbox"/> Swimming Pool <input type="checkbox"/> Building <input type="checkbox"/> Railroad <input type="checkbox"/> Yard <input type="checkbox"/> Parking Lot

NOTE	
-------------	--



POLE ATTACHMENT LICENSE AGREEMENT

BY AND BETWEEN

WINDSTREAM KENTUCKY EAST, LLC

AND



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ATTACHED AND INCORPORATED EXHIBITS

EXHIBIT A – DEFINITIONS

EXHIBIT B – FORM APPLICATION FOR POLE LICENSE

EXHIBIT C – NOTIFICATION OF SURRENDER OF LICENSE

EXHIBIT D – SCHEDULE OF RATES, FEES AND CHARGES

EXHIBIT E – NOTICE CONTACTS AND ADDRESSES

1. PARTIES.

This Pole Attachment License Agreement (“Agreement”) is entered into as of the date last signed by all the parties (“Effective Date”) by and between Windstream Kentucky East, LLC, a Windstream company organized and existing under the State of Delaware (“Licensor”), and [REDACTED], a company organized and existing under the State of [REDACTED] (“Licensee”). Licensor and Licensee may sometimes be referred to in this Agreement individually as a “party” and collectively as the “parties”.

2. SCOPE.

A. The purpose of this Agreement is to set forth the rates, terms, conditions, and procedures under which the Licensor will provide Licensee access to Licensor’s Poles (as defined herein) in the State of Kentucky for the purpose of Licensee attaching wireline facilities.

B. The parties acknowledge that Licensor is entering into this Agreement because Licensee has represented it is a regulated "telecommunications carrier" or “cable television system” provider as such terms are defined in the Communications Act of 1934, as amended (hereinafter the "Communications Act") and desires to provide telecommunications service or cable service (“Services”), as defined in the Communications Act; and that Licensee is authorized to provide these Services under its franchise or other lawful authority within its service area where Licensor owns Poles. In the event Licensee no longer has the status as a “telecommunications carrier” or “cable television system” provider or the authority to offer these Services in the state where the Poles are located, Licensor shall have the right to immediately terminate this Agreement and require Licensee to remove all of its facilities from Licensor’s Poles. **As a condition precedent to entering into this Agreement, Licensee shall submit to Licensor a copy of its certification evidencing its status as either a regulated telecommunication carrier or cable television system provider, and until such documentation is provided to Licensor, Licensor shall not be obligated to enter into this Agreement.**

C. Subject to the provisions of this Agreement, Licensor will issue to Licensee for any lawful communications purpose, revocable, nonexclusive Licenses authorizing the placement of Licensee's Attachment to Licensor's Poles.

D. No use, however extended, of Licensor's Poles nor payment of any fees or charges required under this Agreement or License issued under this Agreement shall create or vest in Licensee any ownership or property rights in said Poles, but Licensee's rights therein shall be and remain a mere license. Nothing herein contained shall be construed to compel Licensor to construct, retain, extend, place, or maintain any facilities not needed for its own service requirements, unless otherwise required by law. Nothing contained in this Agreement or in any License issued hereunder shall in any way affect, restrict or impair the right of Licensor to convey, transfer, mortgage, or assign to any other person or entity any interest in real or personal property, including any Poles in which Licensee has attached or placed Licensee’s Attachments pursuant to Licenses issued under this or other license agreements.

E. Licensee recognizes that Licensor has entered into, or may in the future enter into, agreements and arrangements with others which are not a party to this Agreement regarding the Poles covered by this Agreement. Nothing herein contained shall be construed as a limitation, restriction or prohibition against Licensor with respect to such other agreements or arrangements. The rights of Licensee shall at all times be subject to any present or future joint use or joint ownership arrangement between Licensor and any other party.

F. This Agreement does NOT create any right for Licensee to access or place facilities in Licensor central offices, conduit or to place wireless communication equipment on Poles. A separate agreement is required for any access to Licensor facilities other than those outlined in this Agreement.

3. DEFINITIONS.

Certain capitalized terms used in this Agreement are listed in and have the meaning as set forth in Exhibit A. Exhibit A is incorporated and made a part of this Agreement by reference.

4. TERM AND TERMINATION OF AGREEMENT

A. This Agreement shall become effective upon the Effective Date and if not terminated in accordance with the provisions of this Agreement, shall continue in effect for a term of one (1) year (“Initial Term”) and shall continue on a year –to – year basis. Notwithstanding the foregoing, any time after the Initial Term and anytime thereafter the rates, fees and charges set forth may be increased or decreased by written notice from Licensor to Licensee.

B. Either Party may terminate this Agreement for any reason after the Initial Term with at least thirty (30) day written notice to the other party. Licensor may terminate this Agreement in the event of default as set forth under Article 20 of this Agreement.

C. Upon termination of the Agreement in accordance with any of its terms, all outstanding Licenses in connection therewith shall terminate and shall be surrendered and Licensee shall immediately, and at its sole expense remove all Attachments located on Poles within sixty (60) days of date of termination.

5. TERMINATION OF LICENSES

A. In addition to other termination rights set forth in this Agreement, upon notice from Licensor to Licensee that Licensor has been advised by a governmental authority or private property owners that the use of any Poles is not authorized and is objected to by such governmental authority or private property owner, as the case may be or that any Poles is to be removed, sold or otherwise disposed of, Licensee shall, immediately remove its cables, equipment, and facilities at once from the affected Poles or shall make arrangements for the removal of its cable, equipment, and facilities from the affected portion of Licensor's Poles at Licensee's sole expense. If not so removed within sixty (60) days or such timeframe as stated on the Notice, Licensor shall have the right to remove Licensee's Attachments from Licensor's Poles at the cost and expense of Licensee and without any liability thereto.

B. Licensee may at any time remove its Attachments from any Poles of Licensor, but shall immediately give Licensor written notice of such removal and surrender of License in the form of a Notification of Surrender attached hereto as Exhibit C and incorporated by reference and made a part of this Agreement. If Licensee surrenders its License but fails to remove its Attachments from Licensor's Poles, Licensor shall have the right but not the obligation to remove Licensee's Attachments at Licensee's expense without any liability on the part of Licensor for damage or injury to Licensee's Attachments or interruption to Services. Licensee's obligations with regard to maintenance and fees continue until Attachments are removed from the Poles. In the event that Licensee's Attachments shall be removed from any Poles as provided by this Agreement, no Attachment shall again be made to such Poles unless

Licensee shall have first complied with all of the provisions of this Agreement as though no Attachment had previously been made.

6. RATES, FEES AND CHARGES.

A. All rates, charges and fees set forth in this Agreement and those shown in Exhibit D (Schedule of Rates, Fees, and Charges) shall be subject to and calculated in accordance with applicable law, and Licensor may in its sole discretion revise the rates, charges and fees as set forth in Exhibit D upon 30 day notice to Licensee. Exhibit D is incorporated and made a part of this Agreement by reference. The fees, rates and charges set forth in Exhibit D or elsewhere in this Agreement are effective during the term of this Agreement and subject to change as set forth herein.

B. Pole Attachment Fee. For the purpose of computing the annual Pole Attachment Fee due under this Agreement the Pole Attachment Fee shall be based each year upon the number of Poles where Licensor has issued a License as of the date of annual billing multiplied by the Attachment Rate set forth on Exhibit D, as may be modified by Licensor from time to time. If Licensee is a regulated cable system provider which begins to offer telecommunication Services, Licensee must notify Licensor within thirty (30) days of the change in use if it shall begin to use any attachment for telecommunication Services and Licensor may adjust the Attachment Rate and Pole Attachment Fee as appropriate consistent with the applicable FCC formula for telecommunication providers.

C. All charges for inspections, engineering, replacement or rearrangements of Licensee's Attachments from Licensor's Poles and, without limitation, any other work performed for Licensee shall be based upon the full cost and expense, including reasonable overhead, incurred by Licensor or its representative for performing such work for Licensee to include without limitation costs to transfer or moving of Licensor facilities and removal of old Poles. The cost to Licensee shall be determined in accordance with the regular and customary methods used by Licensor in determining such costs.

D. All other Attachment related inquiry, verification, application, administrative and miscellaneous rates, fees and charges shall be calculated and paid in accordance with Exhibit D and the terms of this Agreement.

E. Upon termination or surrender of a License granted hereunder, no refund of any Pole Attachment Fees shall be made and Licensee shall remain liable for all fees and charges set forth in this Agreement until Licensee has removed its Attachments.

7. PAYMENT, SECURITY BOND AND LIEN.

A. All bills for such other charges for work performed by Licensor and the fees set forth in the Agreement shall be payable upon presentment to Licensee, and shall be deemed delinquent if not paid within thirty (30) days after the date of the invoice.

B. Bond. Licensee shall furnish a bond or other security, and keep in place during the term of this Agreement, satisfactory to Licensor, the amount of \$5,000 or an amount equal to two (2) years of Pole Attachment Fees, whichever is greater, to guarantee the performance of Licensee obligations including payment of any such sums (including Unauthorized Attachment charges and liquidated damages) which may become due to Licensor arising out of this Agreement including, but not limited to rent, fees due hereunder or charges for work performed for the benefit of Licensee under this Agreement, including the

removal of Licensee's facilities upon termination of this Agreement by any of its provisions or upon termination of any License issued hereunder. Such bond shall include that Licensor received 30 days prior notice of cancellation. Cancellation of a bond shall be an event of default by Licensee. Upon signing this Agreement and prior to issuance of a License, Licensee shall furnish the bond to be sent to person identified in Exhibit E. Licensor may in its sole discretion change the bond amount or cancellation notice requirement from time to time upon at least thirty (30) day notice to Licensee. Licensor shall not be obligated to issue any License hereunder until Licensee has provided the bond as set forth herein.

C. **Lien.** Should Licensor under the terms and conditions of this Agreement remove Licensee's Attachments from Licensor's Poles, Licensor will deliver to Licensee the cable, equipment or facilities so removed upon payment by Licensee of the cost of removal, storage and delivery, and all other amounts due Licensor hereunder. Licensor is hereby given a lien on Licensee's cable, equipment or facilities attached to Licensor's Poles or removed therefrom, with power of public or private sale, to cover any amounts due Licensor under the provisions of this Agreement. Such liens shall not operate to prevent Licensor from pursuing, at its option, any other remedy in law, equity or otherwise, including any other remedy provided for in this Agreement.

8. ATTACHMENT REQUEST AND LICENSE PROCESS

A. Before Licensee shall have a right to place Attachments to any Poles of Licensor, Licensee shall make application for and receive a revocable, nonexclusive License which shall be in the form of a Licensor countersigned Application for Pole License (Exhibit B). Each Exhibit B Application for Pole License shall contain no more than twenty-five (25) Poles and Licensee may submit up to twelve (12) Exhibit B, Application for Pole License within a rolling thirty (30) day period. Licensor will process Applications for Pole Licenses in the order in which they are received; provided, however, that when Licensee has multiple Applications for Pole Licenses on file with Licensor, Licensee may designate its desired priority of completion with respect to all such Application for Pole Licenses. **Licensee shall not under any circumstances attach any equipment to any guy wires or anchors owned by Licensor.**

B. **Application For Pole License and Engineering Survey.** Licensee shall submit an Application for Pole License in the form of Exhibit B and shall include a drawing of the proposed route, the pole detail and contact information (name, telephone, facsimile, and email information). Upon receipt of a complete Application for Pole License, Licensor will conduct an engineering survey to determine whether and where Licensee's Attachment is feasible, and what Make Ready Work is required by Licensor or other existing attachers to accommodate Licensee's Attachment. Upon completion of the engineering survey, Licensor shall inform Licensee of its estimated make-ready charges for Licensor Make Ready Work ("Make Ready Estimate"). If during this process, Licensor determines the request is denied based on insufficient capacity or for reasons of safety, reliability and generally applicable engineering purpose Licensor shall inform Licensee that the Application for Pole License is denied together with the reason. All expenses incurred by Licensor in reviewing Licensee's Application for Pole License shall be borne by Licensee even if such request is denied by Licensor.

C. **Advance Payment of Make Ready Work Estimate and Expedited Charges.** If Licensee upon review of the Make Ready Estimate desires to proceed with the process to obtain a License from Licensor, Licensee shall submit payment in the amount of the Make Ready Estimate together with the Application Fee and engineering survey costs to Licensor within fourteen (14) days of receipt of the Make Ready Estimate and invoice for such amounts. Licensee shall be solely responsible for negotiating with existing attachers for Make-Ready Work relating to such other existing attacher facilities located on,

within or in Licensor's Poles and shall be responsible for paying all charges incurred in transferring or rearranging existing attacher facilities to accommodate the placement of Licensee's Attachment on, within or in Licensor's Poles. In the event, Licensee declines to proceed with the project Licensee shall reimburse Licensor any costs and expenses incurred by Licensor to date including but not limited to Application Fee, engineering and administrative expenses and costs.

D. Completion of Make Ready Work and Issuance of License. Licensor shall undertake to complete any Make Ready Work of its owned facilities upon receipt of Licensee's payment of the Make Ready Estimate. Upon completion of all Make Ready Work and receipt of all fees and charges due from Licensee to Licensor, Licensor shall issue Licensee an approved License which shall be in the form of a Licensor countersigned Application for Pole License. At that time Licensee will be considered to have been granted a License with respect to the Poles approved in the License and may attach to Licensor's Poles in accordance with the terms and conditions of this Agreement.

E. Licensee shall maintain a copy of all Application for Pole Licenses and approved Licenses. Licensor may provide upon request copies of the same to the extent available and Licensee shall reimburse Licensor for its costs in preparing and sending requested copies.

9. AUTHORITY FOR PLACEMENT OF ATTACHMENT

A. Before any placement of Attachments by Licensee, regardless of whether a License may have been issued, Licensee represents and warrants that it has the authority to maintain Attachments within public rights-of-way, or on private rights-of-way or on private property, and shall upon request provide a copy of documentation evidencing such right to Licensor. Licensee shall be solely responsible for obtaining all licenses, easements, authorizations, permits and consents from federal, state and local authorities or private land owners that may be required to place and maintain Attachments on Licensor's Poles.

B. Licensor and Licensee agree that neither party has the right to restrict or interfere with the other party's lawful access to and use of public right-of-way, including public right-of-way, which pass over property owned by either party. Except as otherwise specifically provided in this Agreement, Licensor and Licensee shall each be responsible for obtaining their own right-of-way and permission to use real or personal property owned or controlled by any governmental body or private entity or person.

C. Licensor may, without incurring any liability, remove Attachments of Licensee from Licensor's Poles, at Licensee's sole expense where in Licensor's sole judgment such removal is required in connection with the performance of Licensor's service obligation or the safety of Licensor's employees. Whenever such removal has been made, Licensee will be notified.

10. CONSTRUCTION AND MAINTENANCE

A. Licensee's Attachments shall be placed and maintained in accordance with the following:

- 1.** any and all Licensor requirements and specifications of Licensor, and
- 2.** the terms and conditions of this Agreement, and
- 3.** the National Electric Safety Code (most recent edition), and
- 4.** the National Electric Code (most recent edition), and

5. in compliance with any other rules or orders now in effect or that may hereafter be issued by any state utility commission or other authority (state, federal, local) having jurisdiction over including but not limited to Poles, rights-of-way, and Hazardous Materials.

Each of Section 10(A)(1-5) is incorporated by reference and made a part of this Agreement, and in the event of a conflict or difference between any of these specifications and requirements, the more stringent will apply. Licensee agrees to rearrange its Attachments, within a commercially reasonable timeframe, in accordance with changes in the standards referenced herein in this Section 10(A) of this Agreement, or if required by law.

B. Licensee shall, at its own expense, make and maintain its Attachments and use Licensor Poles in a safe condition and in thorough repair, and in a manner acceptable to Licensor, and so as not to conflict with the use of said Poles by Licensor or by other authorized users of said Poles, or interfere with other facilities thereon or which may from time to time be placed thereon. Licensee shall, at its sole expense, upon written notice from Licensor, relocate or replace its Attachments placed on said Poles or transfer them to substituted Poles that may be authorized by Licensor, or perform any other work in connection with said Attachments that may be required. Licensor shall give such written notice as is reasonable in the circumstances, provided, however, that in cases of emergency, as determined by Licensor in its sole discretion, Licensor may arrange to relocate, remove or replace Licensee Attachments placed on said Poles, transfer such Attachments to substituted Poles or perform any other work in connection with said Attachments that may be required in the maintenance, replacement, removal or relocation of said Poles or Licensor or existing attacher facilities thereon or which may be placed thereon, or for the service needs of Licensor, and Licensee shall reimburse Licensor for the expense thereby incurred. For the purpose of this Section, Licensee Attachments shall be understood to include Attachments of Licensee in space reserved for Licensor, or space which Licensor has the right to use, on poles of other companies with which Licensor now has or may hereafter have agreements for joint use and occupancy; and the use of such space by Licensee shall be subject to the terms and conditions of the agreements between Licensor and said other companies.

C. Licensee shall be responsible at all times for the condition of Licensee's Attachments and its compliance with the requirements, specifications, rules, regulations, ordinances and laws specified in this Agreement. Licensor shall have no duty to Licensee to inspect, monitor or maintain the condition of Licensee's Attachments (including, but not limited to, splices and other facilities connections) located on, within or in Licensor's Poles. Licensor may make periodic or spot inspections at any time of any part of Licensee's Attachments as Licensor determines reasonable or necessary in its sole judgment, pursuant to Section 16 of this Agreement.

D. Licensee shall not authorize any person or entity acting on Licensee's behalf ("Licensee Contractor") to perform any work on, within or in Licensor's Poles without first verifying, to the extent practicable, on each date when such work is to be performed and, that the condition of the Poles is suitable for the work to be performed. If Licensee or Licensee Contractor determines that the condition of the Poles is not suitable for the work to be performed, Licensee shall notify Licensor of the condition of the Poles in question and shall not proceed with construction activities until Licensee is satisfied that the work can be safely performed.

E. Licensee shall be solely responsible for paying all persons and entities that provide materials, labor, access to real or personal property, or other goods or services in connection with the construction and placement of Licensee's Attachments and for directing the activities of all Licensee Contractors while

they are physically present on, within or in the vicinity of Licensor's Poles. Licensee shall not permit any mechanic's lien, material man's lien, or any other lien, claim or security interest to attach to or encumber any of Licensor's real or personal property at any time.

F. Licensee's main line Attachments shall be tagged at maximum intervals of 300 feet so as to identify Licensee as the owner of the Attachment. Licensee shall place fiber wrap/ID at the specific Licensor Poles attaching point and at any aerial span splice location and/or slack loop. The tags shall be of sufficient size and lettering so as to be easily read from ground level.

11. OVERLASHING

A. Licensee may, upon notice to Licensor, overlash its own existing authorized Attachment and this does not constitute a separate Attachment, as it relates to the billing of Pole Attachment Fees, unless multiple/separate Attachment points are physically made at the Poles itself outside of the scope of a single Attachment. Such notice shall be in the form of an Exhibit B Application for Pole License, and any additional Attachments being installed on Poles, regardless of it being an overlash of existing Attachment or as a new Attachment, will require an engineering analysis to determine if the additional loading negatively impacts the Poles capacity. Any additional load which causes the Pole to exceed its rated capacity or no longer provides for ample ground clearance of the Attachments or other facilities will necessitate the need for the Licensee to pay any and all Make Ready Work necessary. Each overlash strand shall not exceed a 2" maximum diameter.

B. In no event shall Licensee allow a third party to overlash to Licensee's Attachments without prior notice to and consent from Licensor. Any third party must execute a License Agreement with Licensor and obtain a license thereunder.

12. MODIFICATIONS, ADDITIONS, REPLACEMENTS OR REARRANGEMENTS

A. Licensee shall not modify, overlash, add to, or replace Attachments on any Poles without first notifying Licensor in writing of the intended modification, addition or replacement at least thirty (30) days prior to the date the activity is scheduled to begin. The required notification shall include:

1. the date the activity is scheduled to begin including the Pole location and Pole number,
2. a description of the planned modification, addition, or replacement,
3. a representation that the modification, addition, or replacement will not require any space other than the space previously designated for Licensee's Attachments, and
4. a representation that the modification, addition, or replacement will not impair the structural integrity of the Poles involved.

B. Upon Licensor's receipt of a complete Exhibit B Application for Pole License, Licensor will perform, at Licensee's sole expense, a field check and if Licensor determine that the modification, addition, or replacement specified by Licensee in its notice will require more space than that allocated to Licensee or will require the rearrangements of, reinforcement of, replacement of, or an addition of support equipment to the Poles involved in order to accommodate Licensee's modification, addition, or replacement, Licensor will so notify Licensee and the parties will follow the Make Ready Work process

as set forth in Section 8 of this Agreement in order to obtain authorization for the modification, addition, or replacement of its Attachments.

C. Should Licensee request Licensor to expand capacity or purchase additional plant and should Licensor so agree, Licensee agrees to pay all cost and expenses thereby incurred by Licensor. If another party that has been granted a license joins in the request and will benefit from the expansion or purchase, Licensee agrees to pay a percentage of all costs proportionate to Licensee's share of the benefit received from the expansion or purchase, but Licensee shall be responsible for all costs and expenses not paid by the other party.

D. When multiple applications, including those of Licensee, are received by Licensor with respect to any Poles which must be replaced or rearranged to provide additional space prior to commencement of the work on such Poles, Licensor's facilities may need to be transferred in which case Licensee shall pay for all costs for such transfers.

E. In the event Licensor plans to modify or alter any Poles upon which Licensee has placed Attachments, Licensor, except in emergency situations, shall provide Licensee written notice of the proposed modification or alteration at least sixty (60) days prior to the time the proposed modification or alteration is scheduled to take place. Should Licensee decide to modify or alter Licensee's Attachments on Poles, Licensee shall so notify Licensor in writing at least thirty (30) days prior to the day the work is to begin. In such event, Licensee shall bear a proportionate share of the total costs incurred by Licensor to make Licensor Poles accessible.

F. In the event Licensor is required to move the location of, or replace, any Licensor Poles for reasons beyond its control, Licensee concurrently shall relocate Licensee's Attachments. Licensee shall be solely responsible for the costs of the relocation of Licensee's Attachments. When it is mutually agreed that it is in the best interest of Licensor and Licensee, Licensor may, after proper notification has been provided, transfer Licensee's Attachments at the same time that Licensor transfers its facilities and shall invoice Licensee for the actual costs incurred in performing the transfer of Licensee's Attachments.

13. EMERGENCY RESTORATION

A. In the event of an emergency, restoration procedures may be affected by the presence of Licensee's Attachments. While Licensor shall not be responsible for the repair of damaged Attachments, Licensor shall nonetheless control access to its Poles if the restoration is to be achieved in an orderly fashion.

B. Where Licensor and Licensee are involved in emergency restorations, access to Licensor's Poles will be controlled by Licensor according to the following guidelines.

1. Service Disruptions/Outages

- a) While exercising its right to first access, Licensor shall make all reasonable efforts to grant access to as many other entities with attachments as is reasonably safe.
- b) Where simultaneous access is not possible, Licensor will grant access on first come, first served basis.

2. Service Affecting Emergencies

- a) While exercising its right to first access, Licensor shall make all reasonable efforts to grant access to as many other entities with attachments as is reasonably safe.
- b) Where Licensor is unable to grant simultaneous access to all other entities with attachments, access will be granted according to the level of damage to the attachments of each entity and the likelihood that a given level of damage will result in service disruption. Where the likelihood that a service disruption will result is not clearly discernible, access will be on a first come, first served basis.

C. Without limiting any other indemnification or hold harmless provisions of this Agreement, Licensee agrees that any decision by Licensor regarding access to its Attachments, or any action or failure to act by Licensor, under this section shall not be the basis for any claim by Licensee against Licensor for any damage to Licensee's Attachments or disruption of Licensee's Services, or any other direct or indirect damages of any kind whatsoever incurred by Licensee.

14. FAILURE TO PLACE ATTACHMENTS

Once Licensee has been issued a License, Licensee shall have ninety (90) calendar days from the date of the License was issued to begin the placement of its Attachments on the Licensor Poles covered by the License. If Licensee has not begun placing its Attachments within the ninety (90) day period, Licensee shall so advise Licensor with a written explanation and notice for the delay. If Licensee fails to advise Licensor of its delay by notice thereof or if Licensee fails to act in good faith by not making a bona fide effort to begin placing its Attachments within the ninety (90) calendar days prescribed by this section, the License shall be automatically rescinded by Licensor and deemed null and void, and Licensee shall have no further right to place the Attachments pursuant to such voided License.

15. ABANDONMENT

Nothing in this Agreement shall prevent or be construed to prevent Licensor from abandoning, selling, assigning, or otherwise disposing of any Poles. Licensor shall notify Licensee of any sale, assignment, or other disposition of any Poles or other Licensor property used for Licensee's Attachments.

16. INSPECTIONS AND INVENTORIES

A. **Post construction and/or periodic inspection of Licensee Attachments.** Licensor shall have the right, but not the obligation, to make a post construction inspection and periodic inspections at any time of any part of Licensee's Attachments on Poles and any other associated facilities for the limited purpose of determining whether Licensee's Attachments are in compliance with the terms of this Agreement and any Licenses issued hereunder. Such inspections shall be conducted at Licensor's expense with the exception of (1) a post construction inspection, (2) follow-up inspection to confirm remedial action after an observed Licensee violation of the requirements of this Agreement; and (3) inspection of Licensee Facilities in compliance with a specific mandate of appropriate governmental authority, for which inspections the cost shall be borne solely by Licensee.

B. Inventories. Upon written notice to Licensee, the total number and location of Licensee's Attachments on Licensor's Poles may be determined, at Licensor's discretion, through a survey which may be made not more than once per calendar year by Licensor. If so requested, Licensee and /or any other entity owning or jointly using the Poles with Licensor may participate in the survey. The costs incurred by Licensor to conduct the survey shall be reimbursed to Licensor by Licensee upon demand by Licensor regardless of whether or not Licensee participates in the survey. If the Attachments of more than one licensee are surveyed, each such licensee shall contribute a proportionate share of the costs reimbursed to Licensor.

C. No Duty to Licensee. Neither the act of inspection or survey by Licensor of Licensee's Attachments nor any failure to inspect such Attachments shall operate to impose on Licensor any liability of any kind whatsoever or to relieve Licensee of any responsibility, obligations or liability under this Agreement, any License issued hereunder, or applicable law, or to any third party contractor, Licensee Contractor, or otherwise.

17. UNAUTHORIZED ATTACHMENTS

A. If any Licensee Attachment shall be found on Poles for which no License has been granted by Licensor pursuant to the terms of this Agreement ("Unauthorized Attachment"), Licensor, without prejudice to its other rights or remedies under this Agreement or otherwise, may:

1. impose charges as set forth herein, and
2. require Licensee to remove such Unauthorized Attachment or Licensor may remove such Unauthorized Attachment without liability and the expense of removal shall be borne by Licensee.

B. For the purpose of determining the charges, Licensee shall pay an amount per Unauthorized Attachment equal to the Pole Attachment Fee that would have applied if Licensee had properly obtained a License based upon the then current Attachment Rate for the number of years the Unauthorized Attachment have existed (or, if that cannot be determined, the number of years since the most recent inventory or five (5) years, whichever is less), plus interest at a rate the greater of 1.5% per month or the maximum allowed by law. In addition, if the Unauthorized Attachment is discovered during a survey where Licensee declined to participate an additional fee of \$100 per Unauthorized Attachment shall be charged to Licensee. Licensee agrees and acknowledges in the event of an Unauthorized Attachment actual damages would be difficult to determine and the charges described herein are liquidated damages, not penalties, and represent a fair and reasonable estimate of the damages which may be incurred by Licensor for Unauthorized Attachments on Licensor's Poles including wear and tear, lost revenue, increased maintenance and repair costs for having to work on a Pole where the owner of a facility is unknown, and the risk of liability for safety violations that may be the result of an Unauthorized Attachment.

C. Any such charge as set forth in Section 17(B) imposed by Licensor shall be in addition to its rights to any other sums due and payable, including without limitation Make Ready Work costs, the actual costs of any audit or survey which established the existence of the Unauthorized Attachment and to any claims to said fees.

D. No act by Licensor with regard to any unauthorized use shall be deemed as a ratification or the licensing of the unauthorized use, and if any License should subsequently be issued, after application and payment of all applicable fees therefore, said License shall not operate retroactively or constitute a waiver by Licensor of any of its rights or privileges under this Agreement or otherwise, and Licensee shall be subject to all liabilities, obligations and responsibilities of this Agreement in regard to said unauthorized use from its inception.

E. An Unauthorized Attachment shall include, but not limited to:

1. an Attachment to Poles which is not identified in any License issued in accordance with this Agreement;
2. an Attachment that occupies more space than that allocated to Licensee by Licensor in a License;
3. an Attachment that is not placed in accordance with the provisions of this Agreement or the appropriate License issued pursuant to this Agreement, unless Licensee can demonstrate to Licensor's reasonable satisfaction that said misplacement is not due to any act or omission of Licensee or Licensee's agents;
4. an addition or modification by Licensee to its pre-existing Attachment(s) that impairs the structural integrity of the involved Licensor Poles.
5. an Attachment that consists of facilities owned or controlled by, and for the use of a party other than Licensee that is overlashed to Licensee Attachments without approval by Licensor as required under this Agreement.

F. Once Licensor has notified Licensee of an Unauthorized Attachment. Licensee shall submit an Exhibit B Application for Pole License to request an authorization for the Attachment. An Exhibit B Application for Pole License submitted per this provision will be treated like any other Exhibit B Application for Pole License subject to this Agreement. Licensee will be responsible for all fees associated with an Exhibit B Application for Pole License (as identified in this Agreement). If an Exhibit B Application for Pole License is not received by Licensor within ten (10) days of Licensor's notice of an Unauthorized Attachment, Licensee has sixty (60) days from the date of the Unauthorized Attachment notification to vacate the Pole. If Licensee fails to remove Licensee's facilities within such sixty (60) day period, Licensor shall have the right to remove Licensee's facilities at Licensee's expense and without any liability on the part of Licensor for damage or injury to Licensee's facilities or disruption of Licensee's Services.

18. COMPLIANCE WITH LAW, ASSUMPTION OF RISK, AND DISCLAIMER OF WARRANTIES

A. Notwithstanding anything to the contrary in this Agreement, Licensee shall ensure that any and all activities it undertakes pursuant to this Agreement shall comply with all applicable laws, including, without limitation, all applicable provisions of:

1. Workers' compensation laws

2. Unemployment compensation laws
3. The Federal Social Security Law
4. The Fair Labor Standards Act, and
5. All laws, regulations, rules, guidelines, policies, orders, permits and approvals or any governmental authority relating to environmental matters including but not limited to Hazardous Materials and/or Occupational Safety and Health Act (“OSHA”).

B. LICENSEE ACKNOWLEDGES AND AGREES THAT LICENSOR DOES NOT MAKE ANY REPRESENTATION OR WARRANTIES AS TO THE CONDITION OR SAFETY OF LICENSOR’S POLES ANY ASSOCIATED FACILITIES AND EQUIPMENT ON, WITHIN OR SURROUNDING THE SAME, OR THE PREMISES SURROUNDING THE SAME, LICENSEE HEREBY ASSUMES ALL RISKS OF ANY DAMAGE. INJURY OR LOSS OF ANY NATURE WHATSOEVER CAUSED BY OR IN CONNECTION WITH THE USE OF POLES AND ASSOCIATED FACILITIES AND EQUIPMENT ON, WITHIN OR SURROUNDING THE SAME, AND THE PREMISES SURROUNDING THE SAME AND LICENSEE IS SOLELY RESPONSIBLE FOR ALL ALLEGED DAMAGES CLAIMED BY THIRD PARTIES ACCESSING OR WORKING ON OR NEAR LICENSOR’S POLES.

C. EXCEPT AS OTHERWISE PROVIDED HEREIN, LICENSOR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED, WITH REGARD TO THIS AGREEMENT AND ANY LICENSE ISSUED HEREUNDER INCLUDING, WITHOUT LIMITATION, ACCESS TO LICENSOR’S POLES OR OTHER FACILITIES.

19. LICENSEE CONTRACTOR QUALIFICATIONS

- A.** The parties acknowledge that from time to time Licensee may use a Licensee Contractor to perform work for Licensee on, within or in Licensor’s Poles.
- B.** Licensee represents and warrants that any of its employees or Licensee Contractors shall not climb or work on any of Licensor’s Poles, or work within Licensor’s Right-Of-Way unless such person has the training, skill, and experience required to recognize potentially dangerous conditions relating to Poles and to perform the work safely.
- C.** Licensee assumes all risk of Licensee Contractors and agrees to indemnify, defend and hold harmless Licensor from all claims, losses, damages and liabilities, costs and expenses (including, but not limited to, reasonable attorney’s fees) associated thereto in accordance with the indemnification provision of this License Agreement.
- D.** When Licensee Contractors are working on, within or in the vicinity of any part of Licensor’s Poles or Right-Of-Way, all such Licensee Contractors shall follow procedures which Licensee deems appropriate for the protection of persons and property. Licensee shall be responsible at all times for determining and implementing the specific steps required to protect persons and property at the site. Licensee will provide all traffic control and warning devices required to protect pedestrian and vehicular

traffic, workers and property from danger. Licensee has sole responsibility for the safety of all its employees and Licensee Contractors, for the safety of bystanders, and for insuring that all operations conform to terms and conditions set forth in this Agreement. Licensor reserves the right to suspend Licensee's activities on, within or in the vicinity of Licensor's Poles or Right-Of-Way if, in Licensor's sole judgment, any hazardous condition arises due to the activity (including both acts and omissions) of any Licensee Contractor or Licensee employee, which suspension shall cease when the condition has been rectified.

E. Licensee represents and warrants that all Licensee Contractors shall maintain the same insurance coverage and limits as are required of Licensee under this Agreement, and if not Licensee's insurance will provide such coverage.

F. Licensee acknowledges that all Licensee Contractors are not Licensor's employees or agents and Licensee assumes full responsibility for their actions or omissions to act. Licensee shall be solely responsible for the payment of compensation of Licensee's employees, contractors or agents assigned to perform work hereunder and such employees, contractors and agents shall be informed that they are not entitled to the provision of any Licensor benefits. Licensor shall not be responsible for payment of workman's compensation, disability benefits, and unemployment insurance or for withholding or paying employment related taxes for any employee of Licensee, but such responsibility shall be solely that of Licensee. In the event that any federal, state or local government agency, any court or any other applicable entity determines that the personnel provided by Licensee or any permitted Licensee Contractor are employees of Licensor for any purpose, Licensee agrees to indemnify, defend and save harmless Licensor from all liabilities, costs, and expenses (including, but not limited to, reasonable attorney fees) associated with such determination in accordance with the indemnification provision of this License Agreement.

G. Any work by Licensee Contractors on, within or in Licensor's Poles or Right-Of-Way shall be done only when specific authorization for such work has been obtained in writing in advance from Licensor pursuant to the terms and conditions of this Agreement. The parties agree that all work shall be performed according to existing industry standards and practices and the requirements and specifications set forth in this Agreement and any License issued hereunder.

20. DEFAULT

A. In addition to other events of defaults defined anywhere else in this Agreement, any one of the following shall be deemed the occurrence of a default under this Agreement:

1. failure by Licensee to pay when due any fee or other sum required to be paid under the terms of this Agreement.
2. failure by either party to perform or observe any other term, condition, covenant, obligation, or provision of this Agreement and such default continues for a period of thirty (30) days after written notice thereof from the other party (provided that if such default is not curable within a thirty (30) day period, the period may be extended if the party substantially commences to cure such default and proceeds diligently thereafter to effect such cure).

3. the filing of any tax or lien against Poles because of any act or omission by Licensee which is not bonded or discharged within thirty (30) days of the date of notice to Licensee that such lien has been filed;
4. Licensee's voluntary or involuntary bankruptcy;
5. Licensee's use or maintenance of its Attachments in violation of any law or regulation, or in aid of any unlawful act or undertaking;
6. if any authorization which may be required of Licensee by any governmental or private authority for the placement, operation, or maintenance of Licensee's Attachments is denied or revoked.

B. In the event of a default and subject to any other applicable provision of this Agreement, the non-defaulting party, without any further notice to the defaulting party (except where expressly provided for below or required by applicable law), may do any one or more of the following:

1. perform on behalf and at the expense of the defaulting party, any obligation of the defaulting party under this Agreement which the defaulting party has failed to perform and of which the non-defaulting party shall have given the defaulting party notice, the cost of which performance shall be paid by the defaulting party to the non-defaulting party upon demand;
2. terminate this Agreement by giving sixty (60) days written notice of such termination to Licensee and remove Licensee's Attachments and store Licensee's facilities in a public warehouse or elsewhere at the expense of and for the account of Licensee without Licensor being deemed guilty of trespass or conversion, and without Licensor becoming liable for any loss or damages to Licensee occasioned thereby; or
3. exercise any other legal or equitable right or remedy that the non-defaulting party may have.

C. The defaulting party shall repay to the non-defaulting party upon demand any costs and expenses incurred by the non-defaulting party (including, without limitation, reasonable attorneys' fees) in successfully enforcing this Agreement.

D. Upon termination of this Agreement by the non-defaulting party, the defaulting party shall remain liable to the non-defaulting party for any and all fees, other payments and damages which may be due or sustained in accord with this Agreement prior to such termination, all reasonable costs, fees and expenses, including, without limitation, reasonable attorney' fees incurred by the non-defaulting party in pursuit of its remedies hereunder.

E. All rights and remedies of the non-defaulting party set forth in this Agreement shall be cumulative and none shall exclude any other right or remedy, now or hereafter allowed by or available under any statute, ordinance, rule of court, or the common law, either at law or in equity, or both.

21. INDEMNIFICATION AND LIMITATION OF LIABILITY

A. Licensee shall compensate Licensor for the full actual loss, damage or destruction of Licensor's property that in any way arises from or is related to this Agreement or activities undertaken pursuant to this Agreement (including, without limitation, the installation, construction, operation, or maintenance of Licensee's Attachments).

B. Licensee agrees to defend, indemnify, protect and hold harmless Licensor and its officers, directors, employees, shareholders, successors, assigns, agents, affiliates, representatives, partners, and contractors from and against any and all claims, actions, administrative proceedings (including, without limitation, informal proceedings), judgments, damages, penalties, fines, cost, liabilities, interests, or loss, including, without limitation, reasonable attorneys' fees and expenses, consultant fees, and expert fees, together with all other costs and expenses of any kind or nature suffered by or asserted against Licensor in any way arising out of or connected with this Agreement or activities undertaken pursuant to this Agreement (including, without limitation, the installation, construction, operation or maintenance of Licensee's Attachments, unless caused solely by the negligence or willful misconduct of Licensor or Licensor's affiliates, agents, officers, employees and assigns). Licensee expressly assumes all liability for actions by its affiliates, agents, officers, employees, or Licensee Contractors and expressly waives any immunity from the enforcement of this indemnification provision that might otherwise be provided by workers' compensation law or by other state or federal laws.

C. Without limiting any of the foregoing, Licensee assumes all risk of, and agrees to relieve Licensor of any and all liability for, loss or damage (and the consequences of loss or damage) to any facilities placed on Licensor's property and any other financial loss sustained by Licensee, except to the extent caused by the sole negligence or willful misconduct on the part of Licensor or Licensor's agents, officers, employees, and assigns.

D. Without limiting the foregoing, Licensee expressly agrees to indemnify, defend, and hold harmless Licensor and Licensor's agents, officers, employees and assigns from any and all claims asserted by end users/customers of Licensee in any way arising out of or in connection with this Agreement or Licensee's Attachments, except to the extent caused solely by the negligence or willful misconduct of Licensor or Licensor's agents, officers, employees, and assigns, or its contractors.

E. Notwithstanding anything to the contrary in this Agreement, Licensee further shall indemnify and hold harmless Licensor, its agents, officers, employees, and assigns from and against any claims, liabilities, losses, damages, fines, penalties, and costs (including, without limitation, reasonable attorneys' fees) whether foreseen or unforeseen, which the Licensor suffers or incurs because of:

1. any discharge of Hazardous Materials resulting from acts or omissions of Licensee, Licensee Contractors or Licensee's predecessor in interest;
2. acts or omissions of Licensee, its agents, employees, Licensees, or representatives in connection with any cleanup required by law, or
3. failure of Licensee or Licensee Contractors to comply with Environmental, Safety and Health Laws.

F. Licensee shall indemnify, protect, and hold harmless Licensor from and against any and all claims for libel and slander, copyright and/or patent infringement arising directly or indirectly by reason of installation of Licensee's Attachments pursuant to this Agreement.

G. In the event of any claim, demand or litigation specified the indemnity provision, the party to be indemnified (the "Indemnified Party") shall give prompt notice to the other party (the "Indemnifying Party") of such claim, demand or litigation. The Indemnifying Party shall have sole control of the defense of any action or litigation on such a claim or demand (including the selection of appropriate counsel) and all negotiations for the settlement or compromise of the same, except that the Indemnifying Party may not make any non-monetary settlement or compromise without the Indemnified Party's consent, which consent shall not be unreasonably withheld. The Indemnified Party shall cooperate with the Indemnifying Party in the defense and/or settlement of any claim, demand or litigation. Nothing herein shall be deemed to prevent the Indemnified Party from participating in the defense and/or settlement of any claim, demand or litigation by the Indemnified Party's own counsel at the Indemnified Party's own expense.

H. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THE AGREEMENT, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES SUFFERED BY SUCH PARTY OR BY ANY SUBSCRIBER, CUSTOMER OR PURCHASER OF SUCH PARTY FOR LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, WHETHER BY VIRTUE OF ANY STATUTE, IN TORT OR IN CONTRACT, UNDER ANY PROVISION OF INDEMNITY, OR OTHERWISE, REGARDLESS OF THE THEORY OF LIABILITY UPON WHICH ANY SUCH CLAIM MAY BE BASED OR WHETHER IT (a) HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES OR (b) IS NEGLIGENT.

22. INSURANCE

A. Licensee shall obtain and maintain, in full force and effect at all times, during operations covered by this Agreement, such minimum insurance as will cover the obligations and liabilities of Licensee, its agents, and its employees which may arise from the operations under this Agreement. Insurance shall have limits of not less than Commercial General Liability policy of minimum limits of:

General Aggregate	\$ 2,000,000 per policy period
Products/Completed Operations Aggregate	\$ 2,000,000 per policy period
Personal Injury/Advertising	\$ 2,000,000 per occurrence
Each Occurrence	\$ 2,000,000 per occurrence
Fire Legal Liability	\$ 50,000 any one fire

B. The policy will be endorsed to show the above aggregate limits applying to "each" job site or, as an alternative, the General Aggregate will be increased to \$4,000,000 per policy period. Policy will also specifically state the coverage applies to all operations conducted by the Licensee, its employees, or agents on behalf of Licensee or subsidiary.

C. Where the performance of the work involves structural property, underground property, or blasting, Licensee's Commercial General Liability insurance policy shall provide coverage to the insured for legal liability arising from operations under this Agreement for property damage:

1. arising out of blasting,
2. arising out of collapse of, or structural injury to, any building or structure or
3. To underground facilities and utilities.

D. Other general liability forms are acceptable in lieu of the Commercial General Liability Form however they are not to be used without written approval from Licensor.

1. Business Automobile Liability policy with minimum limits of:

Bodily Injury	\$2,000,000 per accident
Property Damage	\$ 2,000,000 per accident
OR	
Combined Single Limit	\$ 2,000,000 per accident

The policy will be issued using symbol "1 - any auto" coverage.

2. Workers Compensation:

Part 1 - Medical Benefits	Statutory
---------------------------	-----------

Part 2 - Employer's Liability as indicated:

Bodily Injury by Accident	\$ 1,000,000 each accident
Bodily Injury by Disease	\$ 1,000,000 each employee
Bodily Injury by Disease	\$ 1,000,000 policy limit

E. The policy will show the state in which operation on behalf of the Licensee and/or subsidiary is being conducted. For operations conducted within monopolistic (state fund) states, Licensee will furnish a certificate of compliance from the appropriate state fund administrator.

F. In each and every policy except workers' compensation, Licensor and its subsidiaries shall be named an "additional insured" with respect to activities performed on behalf of the Licensee and its subsidiaries.

G. Coverage provided by the policies listed in this paragraph will be issued by an insurance company, licensed in the state in which operations on behalf of the Licensee are to be conducted. It is acceptable to use both primary and excess/umbrella policies to obtain necessary limits. The worker's compensation policy must contain a waiver of subrogation clause.

H. Licensee will furnish to Licensor, a certificate evidencing insurance coverage under sub-paragraphs 22(A) and (D). Such certificate or Licensee shall provide for a thirty (30) day prior notice to the Licensor of any cancellation or material changes in coverage and shall be signed by a legal representative of the issuing insurance company. The certificate of insurance shall be sent to Licensor's contact identified in Exhibit E.

I. The provisions of sub-paragraphs 22 (A) and (D) shall also apply to all Licensee Contractors and Licensee shall be responsible for their compliance herewith.

23. NOTICES

Any and all notices to a party required or permitted under this Agreement shall be in writing and shall be: (a) delivered personally; (b) delivered by express overnight delivery service; (c) mailed, via certified mail or first class U.S. Postal Service, with postage prepaid, and a return receipt requested; or (d) delivered by electronic mail; provided that a paper copy is also sent via methods (a), (b), or (c) of this Section. Notices will be deemed given as of the earliest of: the date of actual receipt; the next business day when sent via express overnight delivery service; five (5) calendar days after mailing in the case of first class or certified U.S. Postal Service, or on the date set forth on the confirmation produced by the sent confirmation when sent prior to 5:00 p.m. in the recipient's time zone, but the next business day when delivered at 5:00 p.m. or later in the recipient's time zone. Notices will be addressed to the parties as set forth in Exhibit E as may be updated in writing by the parties from time to time in accordance with method set forth under this Section 23.

24. CONFIDENTIALITY

Neither party shall at any time disclose, provide, demonstrate or otherwise make available to any third party any of the terms or conditions of this Agreement or any materials provided by either party specifically marked as confidential, except upon written consent of the other party, or as may be required by applicable law or governmental authorities. Notwithstanding the foregoing, nothing in this Section shall prevent disclosure to a party's authorized legal counsel who shall be subject to this confidentiality section, nor shall it preclude the use of this Agreement by the parties to obtain financing, to make or report matters related to this Agreement in any securities statements, or to respond to any requests by governmental or judicial authorities; provided, however, that any such disclosure shall be limited to the extent necessary, and shall be made only after attempting to obtain confidentiality assurances. Notwithstanding the foregoing, prior to making any disclosure in response to a request of a governmental authority or legal process, the party called upon to make such disclosure shall provide notice to the other party of such proposed disclosure sufficient to provide the other with an opportunity to timely object to such disclosure. Notwithstanding the foregoing, Licensor may, without notice to Licensee: (i) negotiate or enter into any agreement with any other person(s) or entity(ies) that is identical or similar to this Agreement; and (ii) provide the text of all or part of this Agreement to any other party, so long as Licensor shall redact therefrom all references to Licensee and shall not associate such text with Licensee or identify Licensee as having agreed to such text or terms.

25. DISPUTE RESOLUTION

A. Except in the case of:

1. a suit, action, or proceeding by one party to compel the other party to comply with its obligation to indemnify the other party pursuant to this Agreement, or
2. a suit, action or proceeding to compel either party to comply with the dispute resolution procedures set forth in this section, the parties agree to use the following procedure to resolve any dispute, controversy, or claim arising out of or relating to this Agreement or its breach.

B. At the written request of a party, each party shall designate a knowledgeable, responsible representative to meet and negotiate in good faith to resolve any dispute, controversy, or claim arising

under this Agreement. The parties intend that these negotiations be conducted by non-lawyer, business representatives. The substance of the negotiations shall be left to the discretion of the representatives. Upon mutual agreement, the representatives may utilize other alternative nonbinding dispute resolution procedures such as mediation to assist in the negotiations. Discussions and correspondence between the representatives for the purposes of these negotiations shall be treated as confidential, undertaken for purposes of settlement, shall be exempt from discovery and production, and shall not be admissible in any subsequent proceeding without the concurrence of all parties. Documents identified in or provided during such negotiations, which are not prepared for purposes of the negotiations, shall not be so exempt and may, if otherwise admissible, be admitted as evidence in any subsequent proceeding.

C. If a resolution of the dispute, controversy or claim is not reached within ninety (90) days of the initial written request referred to in this Section 25, the dispute, controversy, or claim may be filed with the State utility commission or the Federal Communication Commission, if applicable, for review and determination, provided the party invoking the commission's intervention process has in good faith negotiated, or attempted to negotiate, with the other party pursuant to this Section 25.

D. Except as otherwise provided in this Agreement under the Indemnification or Default provision or elsewhere, each party shall bear its own costs, including attorneys' fee, incurred in connection with any of the foregoing procedures. A party seeking discovery shall reimburse the responding party the cost of reproducing documents (to include search time and reproduction time costs).

26. TAXES

Each party shall pay all taxes and assessments lawfully levied on its own property and services subject to this Agreement.

27. WAIVER

Failure by either party to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in full force and effect.

28. NO THIRD PARTY BENEFICIARIES

Except as otherwise provided in this Agreement, this Agreement is intended to benefit only the parties and may be enforced solely by the parties, their successors in interest or permitted assigns. It is not intended to, and shall not, create rights, remedies or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the parties, except as provided herein.

29. FORCE MAJEURE

Neither party shall be liable for any delay or failure in performance of any part of this License Agreement or License issued hereunder from any cause beyond its reasonable control and without its fault, omission or negligence, such as acts of God, acts of civil or military authority, embargoes, epidemics, war, terrorist acts, riots, insurrections, fires, explosions, earthquakes, nuclear accidents, floods, power blackouts, labor strikes, lockouts or work stoppages or severe weather ("Force Majeure Event"). In the event of a Force Majeure Event, upon giving prompt notice to the other party, the due date for performance by the affected party of its original obligation(s) shall be extended by a term equal to the

time lost by reason of the Force Majeure Event. In the event that the affected party is able to partially perform its obligations, it shall perform its obligations at a performance level no less than that which it uses for its own operations.

30. ASSIGNMENT

Licensee shall not assign; transfer or sublet the privileges hereby granted, or sell, lease or otherwise permit the use of its facilities on or any part thereof (all of the foregoing being "Transfers"), without prior consent in writing of Licensor. No such consent granted by Licensor shall be effective until Licensee's assignee, sublessee or other transferee has agreed, on an enforceable separate document signed and delivered to Licensor, to assume all obligations and liabilities of Licensee under this Agreement. Licensor may condition such consent upon the assignee's sublessee's or transferee's agreement to reasonable additional or modified terms or conditions. If there is a change of control of Licensee, then Licensor shall have the right, in its reasonable discretion, immediately to terminate this Agreement in its entirety without further liability. Licensor may assign or otherwise transfer this Agreement or any of its rights and interests to any firm, corporation or individual, without the prior consent of Licensee.

31. APPLICABLE LAW

This Agreement, and the rights and obligations contained in it, shall be governed and construed under the laws of the state in which the Attachments hereunder are to be located. The terms and conditions of this Agreement shall be subject to any and all applicable laws, rules, regulations or guidelines now in effect and that subsequently may be prescribed by any federal, state or local governmental authority. To the extent required by any such prescribed law, rule, regulation or guideline, the Parties agree to modify, in writing, the affected term(s) and conditions(s) of this Agreement to bring them into compliance with such law, rule, regulation or guideline. Should any term of this Agreement be determined by a court or agency with competent jurisdiction to be unenforceable, all other terms of this Agreement shall remain in full force and effect.

32. WAIVER OF JURY TRIAL

Licensor and Licensee each expressly waive its right to a jury trial.

33. ENTIRE AGREEMENT, MODIFICATIONS, SURVIVAL AND CONFLICTS AND TARIFFS

A. This Agreement cancels and supersedes all previous agreements whether written or oral, except for any sums due thereunder, between Licensor and Licensee with respect to the Licensee's Attachments to Licensor's Poles; and there are no other provisions, terms or conditions to this Agreement except as expressed herein. All currently effective Licenses and authorizations for Attachments granted pursuant to such previous agreements shall continue in effect subject to the terms and conditions of this Agreement.

B. This Agreement may be amended or supplemented at any time only upon written agreement by the parties hereto. Notwithstanding the foregoing, all Exhibits, fees, Licensor procedures and specifications may be modified by Licensor upon thirty (30) day notice to Licensee.

C. Notwithstanding the termination of this Agreement for any reason, Section 18 Compliance with Laws, Assumption of Risk and Disclaimer of Warranties, Section 21 Indemnification and Limitation of

Liability, Section 22 Insurance, Section 24 Confidentiality and any other provision intended to survive, shall survive termination to the maximum extent permitted under applicable law. Notwithstanding any provisions to the contrary, all rights, remedies, or obligations which arose or accrued prior to the termination or expiration of the terms hereof shall survive and be fully enforceable for the applicable statute of limitations period.

D. It is the intent of the parties that the terms and conditions of this Agreement and any applicable Licensor's state tariffs be construed as being consistent where possible. However, in the event of a conflict or difference between the terms and conditions of this Agreement and Licensor's state tariff, the terms of the applicable state tariff shall control.

34. AUTHORITY AND COUNTERPARTS AND ELECTRONIC SIGNATURES

A. Each party represents and warrants that it is a corporation duly organized, validly existing and in good standing under the laws of the state in which the obligations under this License Agreement are to be performed. Each party warrants that it has full power and authority to execute and deliver this License Agreement and to perform its obligations hereunder.

B. This Agreement may be executed using facsimile or electronic signatures and such facsimile or electronic version of the Agreement shall have the same legally binding effect as an original paper version. This Agreement may be executed in counterparts, each of which shall be deemed an original.

LICENSOR

LICENSEE

Windstream Kentucky East, LLC

(INSERT CATV/CLEC ENTITY)

BY: _____

BY: _____

NAME: _____

NAME: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

EXHIBIT A **DEFINITIONS**

“Application for Pole License” - A written request submitted in the form of Exhibit B from Licensee to Licensor requesting authorization to attach Licensee owned facilities to Poles in accordance with this Agreement.

“Attachment(s)” – any facilities, cables or equipment attached to Poles or any other property owned or controlled by Licensor.

“Effective Date” - is the date this Agreement is last signed by the parties.

“Force Majeure Event” – shall have the meaning set forth in Section 29 of the Agreement.

“Hazardous Materials” -

Any substance, material or waste now or hereafter defined or characterized as hazardous, toxic or dangerous as defined by the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”) of 1980, as amended, and other federal, state, and local health, safety, and environmental laws, ordinances, statutes, and rules, including but not limited to the Occupational Safety and Health Act (“OSHA”).

Any substance, material or waste now or hereafter classified as a contaminant or pollutant under any law, rules, ordinance, or authority.

Any other substance, material or waste, the manufacture, processing, distribution, use, treatment, storage, placement, disposal, removal or transportation of which is now or hereafter subject to regulation under any law, ordinance, statute, rule or regulation of any governmental body or authority.

“License” – is the specific nonexclusive and revocable permission from Licensor, in the form of a Licensor countersigned and returned Application for License, to Licensee authorizing Licensee to attach its facilities as applied for to Licensor Poles in accordance with this Agreement.

“Licensee Contractors” - shall have the meaning set forth in Section 10(D) of the Agreement.

“Make Ready Estimate” – is Licensor’s estimated cost to perform Make Ready Work on Licensor’s facilities on Poles to accommodate Licensee’s Attachment as requested in an Application for Pole License.

“Make Ready Work” - all Licensor, joint owner or other existing attacher work to prepare Licensor’s Poles and related facilities for the requested Attachment of Licensee’s facilities but not the actual placement of Attachments or administrative activities related to inquiries, verifications, requests or applications.

“Overlashing or overlashed” – lashing of an additional Licensee owned cable to Licensee’s own existing cable and/or strand attached to a Pole as set forth in Section 11 of this Agreement.

“Pole(s)” - a pole owned solely or jointly by Licensor or Poles owned by others to the extent that and for so long as Licensor has the right to permit others to be attached in the communications space.

“Pole Attachment Fee” - the fee paid annually per Attachment on a Pole. For billing purposes, a single Attachment includes the point of Attachment and all facilities located in the usable space on the Poles in the space assigned to Licensee (typically six inches above and six inches below the point of Attachment). If Licensee occupies more than one foot of usable space on Poles, separate Pole Attachment Fees shall apply to each one foot of space occupied.

“Right-of-Way” - right-of-way owned or controlled by Licensor.

“Unauthorized Attachment” – shall have the meaning set forth in Section 17(A) and 17(E) of the Agreement.

EXHIBIT B

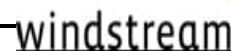
FORM APPLICATION FOR POLE LICENSE

NOTE TO LICENSEE IF LICENSEE CHOOSES NOT TO PROCEED WITH THE APPLICATION - LICENSEE WILL BE BILLED FOR LICENSOR/WINDSTREAM'S ENGINEERING AND ADMINISTRATIVE TIME.

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

**PROPOSAL #:
Submit in Dupli**

Name of Firm/Licensee Applying: _____ Contact Name, Phone # _____
 Street Address, City, ST, ZIP of Firm Applying _____ EMAIL ADDRESS _____
 Licensee Authorized Signature & Date: _____



By this application & signature, Licensee agrees to pay all engineering and administrative fees associated with this application even if Licensee chooses NOT to proceed with the project. All ESTIMATED fees, including engineering & make-ready, MUST BE PAID IN FULL UP FRONT. NON PAYMENT OF FEES WILL RESULT IN THIS APPLICATION AND ALL FUTURE APPLICATIONS BEING PLACED ON HOLD. NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Town, Zip Code	Height, Class, Ownership of highest Pole	Hgt of highest Tel Cable	Hgt of highest Fiber Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	# & type of Attachments	Height of Licensee to attach #	Licensee to attach #	Licenser Work Description
1											
2											
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25											
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

EXHIBIT B CONTINUED

Submit to: [Windstream .jointuse@windstream.com](mailto:Windstream_jointuse@windstream.com)

Acknowledged and Agreed to by Licensor: _____
 Name Title Date

Windstream Pole Attachment Data Sheet
EXHIBIT B - PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER																
STREET LOCATION		NAME OF ATTACHER																
CITY/SBORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME															
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy																		
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT															
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		TOP OF CONDUIT RISER HEIGHT																
		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; if yes => <input type="checkbox"/> Primary <input type="checkbox"/> Secondary																
MAKE READY WORK	REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, PROVIDE ADDITIONAL DETAIL																
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="width:25%;">BEFORE</td> <td style="width:25%;">AFTER</td> </tr> <tr> <td>POLE NO. =></td> <td colspan="2"></td> </tr> <tr> <td>*TYPE OF POWER ATTACHMENT =></td> <td colspan="2"><input type="checkbox"/> Neutral <input type="checkbox"/> Secondary</td> </tr> </table>				BEFORE	AFTER	POLE NO. =>			*TYPE OF POWER ATTACHMENT =>	<input type="checkbox"/> Neutral <input type="checkbox"/> Secondary							
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*TYPE OF POWER ATTACHMENT =>	<input type="checkbox"/> Neutral <input type="checkbox"/> Secondary																	
POLE DRAWING	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%;"></td> <td style="width:25%; text-align: center;">Pole Side</td> <td style="width:25%;"></td> </tr> <tr> <td style="text-align: center;"> Company Name 1. _____ 2. _____ 3. _____ 4. _____ </td> <td style="text-align: center;"> </td> <td style="text-align: center;"> Attach. Ht. _____ Attach. Ht. _____ Attach. Ht. _____ Attach. Ht. _____ Ground Line </td> </tr> <tr> <td></td> <td style="text-align: center;"> * <input type="checkbox"/> Front <input type="checkbox"/> Back </td> <td style="text-align: center;"> ← Attach. Ht. _____ </td> </tr> <tr> <td></td> <td style="text-align: center;"> <input type="checkbox"/> Front <input type="checkbox"/> Back </td> <td style="text-align: center;"> ← Proposed Attach. Ht. _____ </td> </tr> <tr> <td></td> <td style="text-align: center;"> <input type="checkbox"/> Front <input type="checkbox"/> Back </td> <td style="text-align: center;"> ← Attach. Ht. _____ </td> </tr> </table>				Pole Side		Company Name 1. _____ 2. _____ 3. _____ 4. _____		Attach. Ht. _____ Attach. Ht. _____ Attach. Ht. _____ Attach. Ht. _____ Ground Line		* <input type="checkbox"/> Front <input type="checkbox"/> Back	← Attach. Ht. _____		<input type="checkbox"/> Front <input type="checkbox"/> Back	← Proposed Attach. Ht. _____		<input type="checkbox"/> Front <input type="checkbox"/> Back	← Attach. Ht. _____
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SPAN	MID-SPAN HEIGHT Fl.	SPAN CROSSES OVER (Check all that apply) <input type="checkbox"/> Body of Water <input type="checkbox"/> Street <input type="checkbox"/> Driveway <input type="checkbox"/> Field <input type="checkbox"/> Interstate <input type="checkbox"/> Swimming Pool <input type="checkbox"/> Building <input type="checkbox"/> Railroad <input type="checkbox"/> Yard <input type="checkbox"/> Parking Lot																
NOTE																		

EXHIBIT C

REMOVAL NOTICE AND LICENSE SURRENDER FORM

NOTIFICATION OF SURRENDER

Notification No. _____ **Date:** _____
City & State: _____

In accordance with the terms and conditions of the license agreement between us, dated _____, notice is hereby given that the License covering Attachments to the outside plant structures, as shown on the attached sketch, is surrendered.

Licensee: _____
Signature: _____
By (Print/Type): _____
Title: _____
Date: _____

Date Surrender Notice Received: _____

Licensor: _____
Signature: _____
By (Print/Type): _____
Title: _____
Date: _____

EXHIBIT D

SCHEDULE OF RATES, FEES AND CHARGES

Annual Attachment Rate (per Attachment)**	\$ <u>\$12.12 2-User, \$5.64 3-User</u>
Agreement Fee	\$ <u>400.00</u>
Application for Pole License Fee	\$ <u>75.00 per application</u>
Unauthorized Attachment fee	\$ <u>Per Section 17 of the Agreement</u>

**** If Attachments are in a non-tariffed state, the rental rate is subject to annual adjustment based on FCC Calculation.**

EXHIBIT E

NOTICES CONTACT INFORMATION

IF TO LICENSOR

Email: windstream.poles@windstream.com

Windstream Kentucky East, LLC

PO Box 25410

Little Rock, AR 72221

IF TO LICENSEE:

ENGINEERING CONTACT FOR LICENSEE

Company Name	
Name of Responsible Party	
Address	
Phone	
Fax	
Email	

INVOICING / BILLING CONTACT FOR LICENSEE

Name	
Address	
Phone	
Fax	
Email	



POLE ATTACHMENT LICENSE AGREEMENT

BY AND BETWEEN

WINDSTREAM KENTUCKY WEST, LLC

AND



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ATTACHED AND INCORPORATED EXHIBITS

EXHIBIT A – DEFINITIONS

EXHIBIT B – FORM APPLICATION FOR POLE LICENSE

EXHIBIT C – NOTIFICATION OF SURRENDER OF LICENSE

EXHIBIT D – SCHEDULE OF RATES, FEES AND CHARGES

EXHIBIT E – NOTICE CONTACTS AND ADDRESSES

1. PARTIES.

This Pole Attachment License Agreement (“Agreement”) is entered into as of the date last signed by all the parties (“Effective Date”) by and between Windstream Kentucky West, LLC, a Windstream company organized and existing under the State of Delaware (“Licensor”), and [REDACTED], a company organized and existing under the State of [REDACTED] (“Licensee”). Licensor and Licensee may sometimes be referred to in this Agreement individually as a “party” and collectively as the “parties”.

2. SCOPE.

A. The purpose of this Agreement is to set forth the rates, terms, conditions, and procedures under which the Licensor will provide Licensee access to Licensor’s Poles (as defined herein) in the State of Kentucky for the purpose of Licensee attaching wireline facilities.

B. The parties acknowledge that Licensor is entering into this Agreement because Licensee has represented it is a regulated "telecommunications carrier" or “cable television system” provider as such terms are defined in the Communications Act of 1934, as amended (hereinafter the "Communications Act") and desires to provide telecommunications service or cable service (“Services”), as defined in the Communications Act; and that Licensee is authorized to provide these Services under its franchise or other lawful authority within its service area where Licensor owns Poles. In the event Licensee no longer has the status as a “telecommunications carrier” or “cable television system” provider or the authority to offer these Services in the state where the Poles are located, Licensor shall have the right to immediately terminate this Agreement and require Licensee to remove all of its facilities from Licensor’s Poles. **As a condition precedent to entering into this Agreement, Licensee shall submit to Licensor a copy of its certification evidencing its status as either a regulated telecommunication carrier or cable television system provider, and until such documentation is provided to Licensor, Licensor shall not be obligated to enter into this Agreement.**

C. Subject to the provisions of this Agreement, Licensor will issue to Licensee for any lawful communications purpose, revocable, nonexclusive Licenses authorizing the placement of Licensee’s Attachment to Licensor’s Poles.

D. No use, however extended, of Licensor’s Poles nor payment of any fees or charges required under this Agreement or License issued under this Agreement shall create or vest in Licensee any ownership or property rights in said Poles, but Licensee’s rights therein shall be and remain a mere license. Nothing herein contained shall be construed to compel Licensor to construct, retain, extend, place, or maintain any facilities not needed for its own service requirements, unless otherwise required by law. Nothing contained in this Agreement or in any License issued hereunder shall in any way affect, restrict or impair the right of Licensor to convey, transfer, mortgage, or assign to any other person or entity any interest in real or personal property, including any Poles in which Licensee has attached or placed Licensee’s Attachments pursuant to Licenses issued under this or other license agreements.

E. Licensee recognizes that Licensor has entered into, or may in the future enter into, agreements and arrangements with others which are not a party to this Agreement regarding the Poles covered by this Agreement. Nothing herein contained shall be construed as a limitation, restriction or prohibition against Licensor with respect to such other agreements or arrangements. The rights of Licensee shall at all times be subject to any present or future joint use or joint ownership arrangement between Licensor and any other party.

F. This Agreement does NOT create any right for Licensee to access or place facilities in Licensor central offices, conduit or to place wireless communication equipment on Poles. A separate agreement is required for any access to Licensor facilities other than those outlined in this Agreement.

3. DEFINITIONS.

Certain capitalized terms used in this Agreement are listed in and have the meaning as set forth in Exhibit A. Exhibit A is incorporated and made a part of this Agreement by reference.

4. TERM AND TERMINATION OF AGREEMENT

A. This Agreement shall become effective upon the Effective Date and if not terminated in accordance with the provisions of this Agreement, shall continue in effect for a term of one (1) year (“Initial Term”) and shall continue on a year –to – year basis. Notwithstanding the foregoing, any time after the Initial Term and anytime thereafter the rates, fees and charges set forth may be increased or decreased by written notice from Licensor to Licensee.

B. Either Party may terminate this Agreement for any reason after the Initial Term with at least thirty (30) day written notice to the other party. Licensor may terminate this Agreement in the event of default as set forth under Article 20 of this Agreement.

C. Upon termination of the Agreement in accordance with any of its terms, all outstanding Licenses in connection therewith shall terminate and shall be surrendered and Licensee shall immediately, and at its sole expense remove all Attachments located on Poles within sixty (60) days of date of termination.

5. TERMINATION OF LICENSES

A. In addition to other termination rights set forth in this Agreement, upon notice from Licensor to Licensee that Licensor has been advised by a governmental authority or private property owners that the use of any Poles is not authorized and is objected to by such governmental authority or private property owner, as the case may be or that any Poles is to be removed, sold or otherwise disposed of, Licensee shall, immediately remove its cables, equipment, and facilities at once from the affected Poles or shall make arrangements for the removal of its cable, equipment, and facilities from the affected portion of Licensor's Poles at Licensee's sole expense. If not so removed within sixty (60) days or such timeframe as stated on the Notice, Licensor shall have the right to remove Licensee's Attachments from Licensor's Poles at the cost and expense of Licensee and without any liability thereto.

B. Licensee may at any time remove its Attachments from any Poles of Licensor, but shall immediately give Licensor written notice of such removal and surrender of License in the form of a Notification of Surrender attached hereto as Exhibit C and incorporated by reference and made a part of this Agreement. If Licensee surrenders its License but fails to remove its Attachments from Licensor's Poles, Licensor shall have the right but not the obligation to remove Licensee's Attachments at Licensee's expense without any liability on the part of Licensor for damage or injury to Licensee's Attachments or interruption to Services. Licensee's obligations with regard to maintenance and fees continue until Attachments are removed from the Poles. In the event that Licensee's Attachments shall be removed from any Poles as provided by this Agreement, no Attachment shall again be made to such Poles unless

Licensee shall have first complied with all of the provisions of this Agreement as though no Attachment had previously been made.

6. RATES, FEES AND CHARGES.

A. All rates, charges and fees set forth in this Agreement and those shown in Exhibit D (Schedule of Rates, Fees, and Charges) shall be subject to and calculated in accordance with applicable law, and Licensor may in its sole discretion revise the rates, charges and fees as set forth in Exhibit D upon 30 day notice to Licensee. Exhibit D is incorporated and made a part of this Agreement by reference. The fees, rates and charges set forth in Exhibit D or elsewhere in this Agreement are effective during the term of this Agreement and subject to change as set forth herein.

B. Pole Attachment Fee. For the purpose of computing the annual Pole Attachment Fee due under this Agreement the Pole Attachment Fee shall be based each year upon the number of Poles where Licensor has issued a License as of the date of annual billing multiplied by the Attachment Rate set forth on Exhibit D, as may be modified by Licensor from time to time. If Licensee is a regulated cable system provider which begins to offer telecommunication Services, Licensee must notify Licensor within thirty (30) days of the change in use if it shall begin to use any attachment for telecommunication Services and Licensor may adjust the Attachment Rate and Pole Attachment Fee as appropriate consistent with the applicable FCC formula for telecommunication providers.

C. All charges for inspections, engineering, replacement or rearrangements of Licensee's Attachments from Licensor's Poles and, without limitation, any other work performed for Licensee shall be based upon the full cost and expense, including reasonable overhead, incurred by Licensor or its representative for performing such work for Licensee to include without limitation costs to transfer or moving of Licensor facilities and removal of old Poles. The cost to Licensee shall be determined in accordance with the regular and customary methods used by Licensor in determining such costs.

D. All other Attachment related inquiry, verification, application, administrative and miscellaneous rates, fees and charges shall be calculated and paid in accordance with Exhibit D and the terms of this Agreement.

E. Upon termination or surrender of a License granted hereunder, no refund of any Pole Attachment Fees shall be made and Licensee shall remain liable for all fees and charges set forth in this Agreement until Licensee has removed its Attachments.

7. PAYMENT, SECURITY BOND AND LIEN.

A. All bills for such other charges for work performed by Licensor and the fees set forth in the Agreement shall be payable upon presentment to Licensee, and shall be deemed delinquent if not paid within thirty (30) days after the date of the invoice.

B. Bond. Licensee shall furnish a bond or other security, and keep in place during the term of this Agreement, satisfactory to Licensor, the amount of \$5,000 or an amount equal to two (2) years of Pole Attachment Fees, whichever is greater, to guarantee the performance of Licensee obligations including payment of any such sums (including Unauthorized Attachment charges and liquidated damages) which may become due to Licensor arising out of this Agreement including, but not limited to rent, fees due hereunder or charges for work performed for the benefit of Licensee under this Agreement, including the

removal of Licensee's facilities upon termination of this Agreement by any of its provisions or upon termination of any License issued hereunder. Such bond shall include that Licensor received 30 days prior notice of cancellation. Cancellation of a bond shall be an event of default by Licensee. Upon signing this Agreement and prior to issuance of a License, Licensee shall furnish the bond to be sent to person identified in Exhibit E. Licensor may in its sole discretion change the bond amount or cancellation notice requirement from time to time upon at least thirty (30) day notice to Licensee. Licensor shall not be obligated to issue any License hereunder until Licensee has provided the bond as set forth herein.

C. Lien. Should Licensor under the terms and conditions of this Agreement remove Licensee's Attachments from Licensor's Poles, Licensor will deliver to Licensee the cable, equipment or facilities so removed upon payment by Licensee of the cost of removal, storage and delivery, and all other amounts due Licensor hereunder. Licensor is hereby given a lien on Licensee's cable, equipment or facilities attached to Licensor's Poles or removed therefrom, with power of public or private sale, to cover any amounts due Licensor under the provisions of this Agreement. Such liens shall not operate to prevent Licensor from pursuing, at its option, any other remedy in law, equity or otherwise, including any other remedy provided for in this Agreement.

8. ATTACHMENT REQUEST AND LICENSE PROCESS

A. Before Licensee shall have a right to place Attachments to any Poles of Licensor, Licensee shall make application for and receive a revocable, nonexclusive License which shall be in the form of a Licensor countersigned Application for Pole License (Exhibit B). Each Exhibit B Application for Pole License shall contain no more than twenty-five (25) Poles and Licensee may submit up to twelve (12) Exhibit B, Application for Pole License within a rolling thirty (30) day period. Licensor will process Applications for Pole Licenses in the order in which they are received; provided, however, that when Licensee has multiple Applications for Pole Licenses on file with Licensor, Licensee may designate its desired priority of completion with respect to all such Application for Pole Licenses. **Licensee shall not under any circumstances attach any equipment to any guy wires or anchors owned by Licensor.**

B. Application For Pole License and Engineering Survey. Licensee shall submit an Application for Pole License in the form of Exhibit B and shall include a drawing of the proposed route, the pole detail and contact information (name, telephone, facsimile, and email information). Upon receipt of a complete Application for Pole License, Licensor will conduct an engineering survey to determine whether and where Licensee's Attachment is feasible, and what Make Ready Work is required by Licensor or other existing attachers to accommodate Licensee's Attachment. Upon completion of the engineering survey, Licensor shall inform Licensee of its estimated make-ready charges for Licensor Make Ready Work ("Make Ready Estimate"). If during this process, Licensor determines the request is denied based on insufficient capacity or for reasons of safety, reliability and generally applicable engineering purpose Licensor shall inform Licensee that the Application for Pole License is denied together with the reason. All expenses incurred by Licensor in reviewing Licensee's Application for Pole License shall be borne by Licensee even if such request is denied by Licensor.

C. Advance Payment of Make Ready Work Estimate and Expedited Charges. If Licensee upon review of the Make Ready Estimate desires to proceed with the process to obtain a License from Licensor, Licensee shall submit payment in the amount of the Make Ready Estimate together with the Application Fee and engineering survey costs to Licensor within fourteen (14) days of receipt of the Make Ready Estimate and invoice for such amounts. Licensee shall be solely responsible for negotiating with existing attachers for Make-Ready Work relating to such other existing attacher facilities located on,

within or in Licensor's Poles and shall be responsible for paying all charges incurred in transferring or rearranging existing attacher facilities to accommodate the placement of Licensee's Attachment on, within or in Licensor's Poles. In the event, Licensee declines to proceed with the project Licensee shall reimburse Licensor any costs and expenses incurred by Licensor to date including but not limited to Application Fee, engineering and administrative expenses and costs.

D. Completion of Make Ready Work and Issuance of License. Licensor shall undertake to complete any Make Ready Work of its owned facilities upon receipt of Licensee's payment of the Make Ready Estimate. Upon completion of all Make Ready Work and receipt of all fees and charges due from Licensee to Licensor, Licensor shall issue Licensee an approved License which shall be in the form of a Licensor countersigned Application for Pole License. At that time Licensee will be considered to have been granted a License with respect to the Poles approved in the License and may attach to Licensor's Poles in accordance with the terms and conditions of this Agreement.

E. Licensee shall maintain a copy of all Application for Pole Licenses and approved Licenses. Licensor may provide upon request copies of the same to the extent available and Licensee shall reimburse Licensor for its costs in preparing and sending requested copies.

9. AUTHORITY FOR PLACEMENT OF ATTACHMENT

A. Before any placement of Attachments by Licensee, regardless of whether a License may have been issued, Licensee represents and warrants that it has the authority to maintain Attachments within public rights-of-way, or on private rights-of-way or on private property, and shall upon request provide a copy of documentation evidencing such right to Licensor. Licensee shall be solely responsible for obtaining all licenses, easements, authorizations, permits and consents from federal, state and local authorities or private land owners that may be required to place and maintain Attachments on Licensor's Poles.

B. Licensor and Licensee agree that neither party has the right to restrict or interfere with the other party's lawful access to and use of public right-of-way, including public right-of-way, which pass over property owned by either party. Except as otherwise specifically provided in this Agreement, Licensor and Licensee shall each be responsible for obtaining their own right-of-way and permission to use real or personal property owned or controlled by any governmental body or private entity or person.

C. Licensor may, without incurring any liability, remove Attachments of Licensee from Licensor's Poles, at Licensee's sole expense where in Licensor's sole judgment such removal is required in connection with the performance of Licensor's service obligation or the safety of Licensor's employees. Whenever such removal has been made, Licensee will be notified.

10. CONSTRUCTION AND MAINTENANCE

A. Licensee's Attachments shall be placed and maintained in accordance with the following:

- 1.** any and all Licensor requirements and specifications of Licensor, and
- 2.** the terms and conditions of this Agreement, and
- 3.** the National Electric Safety Code (most recent edition), and
- 4.** the National Electric Code (most recent edition), and

5. in compliance with any other rules or orders now in effect or that may hereafter be issued by any state utility commission or other authority (state, federal, local) having jurisdiction over including but not limited to Poles, rights-of-way, and Hazardous Materials.

Each of Section 10(A)(1-5) is incorporated by reference and made a part of this Agreement, and in the event of a conflict or difference between any of these specifications and requirements, the more stringent will apply. Licensee agrees to rearrange its Attachments, within a commercially reasonable timeframe, in accordance with changes in the standards referenced herein in this Section 10(A) of this Agreement, or if required by law.

B. Licensee shall, at its own expense, make and maintain its Attachments and use Licensor Poles in a safe condition and in thorough repair, and in a manner acceptable to Licensor, and so as not to conflict with the use of said Poles by Licensor or by other authorized users of said Poles, or interfere with other facilities thereon or which may from time to time be placed thereon. Licensee shall, at its sole expense, upon written notice from Licensor, relocate or replace its Attachments placed on said Poles or transfer them to substituted Poles that may be authorized by Licensor, or perform any other work in connection with said Attachments that may be required. Licensor shall give such written notice as is reasonable in the circumstances, provided, however, that in cases of emergency, as determined by Licensor in its sole discretion, Licensor may arrange to relocate, remove or replace Licensee Attachments placed on said Poles, transfer such Attachments to substituted Poles or perform any other work in connection with said Attachments that may be required in the maintenance, replacement, removal or relocation of said Poles or Licensor or existing attacher facilities thereon or which may be placed thereon, or for the service needs of Licensor, and Licensee shall reimburse Licensor for the expense thereby incurred. For the purpose of this Section, Licensee Attachments shall be understood to include Attachments of Licensee in space reserved for Licensor, or space which Licensor has the right to use, on poles of other companies with which Licensor now has or may hereafter have agreements for joint use and occupancy; and the use of such space by Licensee shall be subject to the terms and conditions of the agreements between Licensor and said other companies.

C. Licensee shall be responsible at all times for the condition of Licensee's Attachments and its compliance with the requirements, specifications, rules, regulations, ordinances and laws specified in this Agreement. Licensor shall have no duty to Licensee to inspect, monitor or maintain the condition of Licensee's Attachments (including, but not limited to, splices and other facilities connections) located on, within or in Licensor's Poles. Licensor may make periodic or spot inspections at any time of any part of Licensee's Attachments as Licensor determines reasonable or necessary in its sole judgment, pursuant to Section 16 of this Agreement.

D. Licensee shall not authorize any person or entity acting on Licensee's behalf ("Licensee Contractor") to perform any work on, within or in Licensor's Poles without first verifying, to the extent practicable, on each date when such work is to be performed and, that the condition of the Poles is suitable for the work to be performed. If Licensee or Licensee Contractor determines that the condition of the Poles is not suitable for the work to be performed, Licensee shall notify Licensor of the condition of the Poles in question and shall not proceed with construction activities until Licensee is satisfied that the work can be safely performed.

E. Licensee shall be solely responsible for paying all persons and entities that provide materials, labor, access to real or personal property, or other goods or services in connection with the construction and placement of Licensee's Attachments and for directing the activities of all Licensee Contractors while

they are physically present on, within or in the vicinity of Licensor's Poles. Licensee shall not permit any mechanic's lien, material man's lien, or any other lien, claim or security interest to attach to or encumber any of Licensor's real or personal property at any time.

F. Licensee's main line Attachments shall be tagged at maximum intervals of 300 feet so as to identify Licensee as the owner of the Attachment. Licensee shall place fiber wrap/ID at the specific Licensor Poles attaching point and at any aerial span splice location and/or slack loop. The tags shall be of sufficient size and lettering so as to be easily read from ground level.

11. OVERLASHING

A. Licensee may, upon notice to Licensor, overlash its own existing authorized Attachment and this does not constitute a separate Attachment, as it relates to the billing of Pole Attachment Fees, unless multiple/separate Attachment points are physically made at the Poles itself outside of the scope of a single Attachment. Such notice shall be in the form of an Exhibit B Application for Pole License, and any additional Attachments being installed on Poles, regardless of it being an overlash of existing Attachment or as a new Attachment, will require an engineering analysis to determine if the additional loading negatively impacts the Poles capacity. Any additional load which causes the Pole to exceed its rated capacity or no longer provides for ample ground clearance of the Attachments or other facilities will necessitate the need for the Licensee to pay any and all Make Ready Work necessary. Each overlash strand shall not exceed a 2" maximum diameter.

B. In no event shall Licensee allow a third party to overlash to Licensee's Attachments without prior notice to and consent from Licensor. Any third party must execute a License Agreement with Licensor and obtain a license thereunder.

12. MODIFICATIONS, ADDITIONS, REPLACEMENTS OR REARRANGEMENTS

A. Licensee shall not modify, overlash, add to, or replace Attachments on any Poles without first notifying Licensor in writing of the intended modification, addition or replacement at least thirty (30) days prior to the date the activity is scheduled to begin. The required notification shall include:

1. the date the activity is scheduled to begin including the Pole location and Pole number,
2. a description of the planned modification, addition, or replacement,
3. a representation that the modification, addition, or replacement will not require any space other than the space previously designated for Licensee's Attachments, and
4. a representation that the modification, addition, or replacement will not impair the structural integrity of the Poles involved.

B. Upon Licensor's receipt of a complete Exhibit B Application for Pole License, Licensor will perform, at Licensee's sole expense, a field check and if Licensor determine that the modification, addition, or replacement specified by Licensee in its notice will require more space than that allocated to Licensee or will require the rearrangements of, reinforcement of, replacement of, or an addition of support equipment to the Poles involved in order to accommodate Licensee's modification, addition, or replacement, Licensor will so notify Licensee and the parties will follow the Make Ready Work process

as set forth in Section 8 of this Agreement in order to obtain authorization for the modification, addition, or replacement of its Attachments.

C. Should Licensee request Licensor to expand capacity or purchase additional plant and should Licensor so agree, Licensee agrees to pay all cost and expenses thereby incurred by Licensor. If another party that has been granted a license joins in the request and will benefit from the expansion or purchase, Licensee agrees to pay a percentage of all costs proportionate to Licensee's share of the benefit received from the expansion or purchase, but Licensee shall be responsible for all costs and expenses not paid by the other party.

D. When multiple applications, including those of Licensee, are received by Licensor with respect to any Poles which must be replaced or rearranged to provide additional space prior to commencement of the work on such Poles, Licensor's facilities may need to be transferred in which case Licensee shall pay for all costs for such transfers.

E. In the event Licensor plans to modify or alter any Poles upon which Licensee has placed Attachments, Licensor, except in emergency situations, shall provide Licensee written notice of the proposed modification or alteration at least sixty (60) days prior to the time the proposed modification or alteration is scheduled to take place. Should Licensee decide to modify or alter Licensee's Attachments on Poles, Licensee shall so notify Licensor in writing at least thirty (30) days prior to the day the work is to begin. In such event, Licensee shall bear a proportionate share of the total costs incurred by Licensor to make Licensor Poles accessible.

F. In the event Licensor is required to move the location of, or replace, any Licensor Poles for reasons beyond its control, Licensee concurrently shall relocate Licensee's Attachments. Licensee shall be solely responsible for the costs of the relocation of Licensee's Attachments. When it is mutually agreed that it is in the best interest of Licensor and Licensee, Licensor may, after proper notification has been provided, transfer Licensee's Attachments at the same time that Licensor transfers its facilities and shall invoice Licensee for the actual costs incurred in performing the transfer of Licensee's Attachments.

13. EMERGENCY RESTORATION

A. In the event of an emergency, restoration procedures may be affected by the presence of Licensee's Attachments. While Licensor shall not be responsible for the repair of damaged Attachments, Licensor shall nonetheless control access to its Poles if the restoration is to be achieved in an orderly fashion.

B. Where Licensor and Licensee are involved in emergency restorations, access to Licensor's Poles will be controlled by Licensor according to the following guidelines.

1. Service Disruptions/Outages

- a) While exercising its right to first access, Licensor shall make all reasonable efforts to grant access to as many other entities with attachments as is reasonably safe.
- b) Where simultaneous access is not possible, Licensor will grant access on first come, first served basis.

2. Service Affecting Emergencies

- a) While exercising its right to first access, Licensor shall make all reasonable efforts to grant access to as many other entities with attachments as is reasonably safe.
- b) Where Licensor is unable to grant simultaneous access to all other entities with attachments, access will be granted according to the level of damage to the attachments of each entity and the likelihood that a given level of damage will result in service disruption. Where the likelihood that a service disruption will result is not clearly discernible, access will be on a first come, first served basis.

C. Without limiting any other indemnification or hold harmless provisions of this Agreement, Licensee agrees that any decision by Licensor regarding access to its Attachments, or any action or failure to act by Licensor, under this section shall not be the basis for any claim by Licensee against Licensor for any damage to Licensee's Attachments or disruption of Licensee's Services, or any other direct or indirect damages of any kind whatsoever incurred by Licensee.

14. FAILURE TO PLACE ATTACHMENTS

Once Licensee has been issued a License, Licensee shall have ninety (90) calendar days from the date of the License was issued to begin the placement of its Attachments on the Licensor Poles covered by the License. If Licensee has not begun placing its Attachments within the ninety (90) day period, Licensee shall so advise Licensor with a written explanation and notice for the delay. If Licensee fails to advise Licensor of its delay by notice thereof or if Licensee fails to act in good faith by not making a bona fide effort to begin placing its Attachments within the ninety (90) calendar days prescribed by this section, the License shall be automatically rescinded by Licensor and deemed null and void, and Licensee shall have no further right to place the Attachments pursuant to such voided License.

15. ABANDONMENT

Nothing in this Agreement shall prevent or be construed to prevent Licensor from abandoning, selling, assigning, or otherwise disposing of any Poles. Licensor shall notify Licensee of any sale, assignment, or other disposition of any Poles or other Licensor property used for Licensee's Attachments.

16. INSPECTIONS AND INVENTORIES

A. **Post construction and/or periodic inspection of Licensee Attachments.** Licensor shall have the right, but not the obligation, to make a post construction inspection and periodic inspections at any time of any part of Licensee's Attachments on Poles and any other associated facilities for the limited purpose of determining whether Licensee's Attachments are in compliance with the terms of this Agreement and any Licenses issued hereunder. Such inspections shall be conducted at Licensor's expense with the exception of (1) a post construction inspection, (2) follow-up inspection to confirm remedial action after an observed Licensee violation of the requirements of this Agreement; and (3) inspection of Licensee Facilities in compliance with a specific mandate of appropriate governmental authority, for which inspections the cost shall be borne solely by Licensee.

B. Inventories. Upon written notice to Licensee, the total number and location of Licensee's Attachments on Licensor's Poles may be determined, at Licensor's discretion, through a survey which may be made not more than once per calendar year by Licensor. If so requested, Licensee and /or any other entity owning or jointly using the Poles with Licensor may participate in the survey. The costs incurred by Licensor to conduct the survey shall be reimbursed to Licensor by Licensee upon demand by Licensor regardless of whether or not Licensee participates in the survey. If the Attachments of more than one licensee are surveyed, each such licensee shall contribute a proportionate share of the costs reimbursed to Licensor.

C. No Duty to Licensee. Neither the act of inspection or survey by Licensor of Licensee's Attachments nor any failure to inspect such Attachments shall operate to impose on Licensor any liability of any kind whatsoever or to relieve Licensee of any responsibility, obligations or liability under this Agreement, any License issued hereunder, or applicable law, or to any third party contractor, Licensee Contractor, or otherwise.

17. UNAUTHORIZED ATTACHMENTS

A. If any Licensee Attachment shall be found on Poles for which no License has been granted by Licensor pursuant to the terms of this Agreement ("Unauthorized Attachment"), Licensor, without prejudice to its other rights or remedies under this Agreement or otherwise, may:

1. impose charges as set forth herein, and
2. require Licensee to remove such Unauthorized Attachment or Licensor may remove such Unauthorized Attachment without liability and the expense of removal shall be borne by Licensee.

B. For the purpose of determining the charges, Licensee shall pay an amount per Unauthorized Attachment equal to the Pole Attachment Fee that would have applied if Licensee had properly obtained a License based upon the then current Attachment Rate for the number of years the Unauthorized Attachment have existed (or, if that cannot be determined, the number or years since the most recent inventory or five (5) years, whichever is less), plus interest at a rate the greater of 1.5% per month or the maximum allowed by law. In addition, if the Unauthorized Attachment is discovered during a survey where Licensee declined to participate an additional fee of \$100 per Unauthorized Attachment shall be charged to Licensee. Licensee agrees and acknowledges in the event of an Unauthorized Attachment actual damages would be difficult to determine and the charges described herein are liquidated damages, not penalties, and represent a fair and reasonable estimate of the damages which may be incurred by Licensor for Unauthorized Attachments on Licensor's Poles including wear and tear, lost revenue, increased maintenance and repair costs for having to work on a Pole where the owner of a facility is unknown, and the risk of liability for safety violations that may be the result of an Unauthorized Attachment.

C. Any such charge as set forth in Section 17(B) imposed by Licensor shall be in addition to its rights to any other sums due and payable, including without limitation Make Ready Work costs, the actual costs of any audit or survey which established the existence of the Unauthorized Attachment and to any claims to said fees.

D. No act by Licensor with regard to any unauthorized use shall be deemed as a ratification or the licensing of the unauthorized use, and if any License should subsequently be issued, after application and payment of all applicable fees therefore, said License shall not operate retroactively or constitute a waiver by Licensor of any of its rights or privileges under this Agreement or otherwise, and Licensee shall be subject to all liabilities, obligations and responsibilities of this Agreement in regard to said unauthorized use from its inception.

E. An Unauthorized Attachment shall include, but not limited to:

1. an Attachment to Poles which is not identified in any License issued in accordance with this Agreement;
2. an Attachment that occupies more space than that allocated to Licensee by Licensor in a License;
3. an Attachment that is not placed in accordance with the provisions of this Agreement or the appropriate License issued pursuant to this Agreement, unless Licensee can demonstrate to Licensor's reasonable satisfaction that said misplacement is not due to any act or omission of Licensee or Licensee's agents;
4. an addition or modification by Licensee to its pre-existing Attachment(s) that impairs the structural integrity of the involved Licensor Poles.
5. an Attachment that consists of facilities owned or controlled by, and for the use of a party other than Licensee that is overlashed to Licensee Attachments without approval by Licensor as required under this Agreement.

F. Once Licensor has notified Licensee of an Unauthorized Attachment. Licensee shall submit an Exhibit B Application for Pole License to request an authorization for the Attachment. An Exhibit B Application for Pole License submitted per this provision will be treated like any other Exhibit B Application for Pole License subject to this Agreement. Licensee will be responsible for all fees associated with an Exhibit B Application for Pole License (as identified in this Agreement). If an Exhibit B Application for Pole License is not received by Licensor within ten (10) days of Licensor's notice of an Unauthorized Attachment, Licensee has sixty (60) days from the date of the Unauthorized Attachment notification to vacate the Pole. If Licensee fails to remove Licensee's facilities within such sixty (60) day period, Licensor shall have the right to remove Licensee's facilities at Licensee's expense and without any liability on the part of Licensor for damage or injury to Licensee's facilities or disruption of Licensee's Services.

18. COMPLIANCE WITH LAW, ASSUMPTION OF RISK, AND DISCLAIMER OF WARRANTIES

A. Notwithstanding anything to the contrary in this Agreement, Licensee shall ensure that any and all activities it undertakes pursuant to this Agreement shall comply with all applicable laws, including, without limitation, all applicable provisions of:

1. Workers' compensation laws

2. Unemployment compensation laws
3. The Federal Social Security Law
4. The Fair Labor Standards Act, and
5. All laws, regulations, rules, guidelines, policies, orders, permits and approvals or any governmental authority relating to environmental matters including but not limited to Hazardous Materials and/or Occupational Safety and Health Act (“OSHA”).

B. LICENSEE ACKNOWLEDGES AND AGREES THAT LICENSOR DOES NOT MAKE ANY REPRESENTATION OR WARRANTIES AS TO THE CONDITION OR SAFETY OF LICENSOR’S POLES ANY ASSOCIATED FACILITIES AND EQUIPMENT ON, WITHIN OR SURROUNDING THE SAME, OR THE PREMISES SURROUNDING THE SAME, LICENSEE HEREBY ASSUMES ALL RISKS OF ANY DAMAGE. INJURY OR LOSS OF ANY NATURE WHATSOEVER CAUSED BY OR IN CONNECTION WITH THE USE OF POLES AND ASSOCIATED FACILITIES AND EQUIPMENT ON, WITHIN OR SURROUNDING THE SAME, AND THE PREMISES SURROUNDING THE SAME AND LICENSEE IS SOLELY RESPONSIBLE FOR ALL ALLEGED DAMAGES CLAIMED BY THIRD PARTIES ACCESSING OR WORKING ON OR NEAR LICENSOR’S POLES.

C. EXCEPT AS OTHERWISE PROVIDED HEREIN, LICENSOR MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THE WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ALL OF WHICH ARE HEREBY EXPRESSLY DISCLAIMED, WITH REGARD TO THIS AGREEMENT AND ANY LICENSE ISSUED HEREUNDER INCLUDING, WITHOUT LIMITATION, ACCESS TO LICENSOR’S POLES OR OTHER FACILITIES.

19. LICENSEE CONTRACTOR QUALIFICATIONS

- A.** The parties acknowledge that from time to time Licensee may use a Licensee Contractor to perform work for Licensee on, within or in Licensor’s Poles.
- B.** Licensee represents and warrants that any of its employees or Licensee Contractors shall not climb or work on any of Licensor’s Poles, or work within Licensor’s Right-Of-Way unless such person has the training, skill, and experience required to recognize potentially dangerous conditions relating to Poles and to perform the work safely.
- C.** Licensee assumes all risk of Licensee Contractors and agrees to indemnify, defend and hold harmless Licensor from all claims, losses, damages and liabilities, costs and expenses (including, but not limited to, reasonable attorney’s fees) associated thereto in accordance with the indemnification provision of this License Agreement.
- D.** When Licensee Contractors are working on, within or in the vicinity of any part of Licensor’s Poles or Right-Of-Way, all such Licensee Contractors shall follow procedures which Licensee deems appropriate for the protection of persons and property. Licensee shall be responsible at all times for determining and implementing the specific steps required to protect persons and property at the site. Licensee will provide all traffic control and warning devices required to protect pedestrian and vehicular

traffic, workers and property from danger. Licensee has sole responsibility for the safety of all its employees and Licensee Contractors, for the safety of bystanders, and for insuring that all operations conform to terms and conditions set forth in this Agreement. Licensor reserves the right to suspend Licensee's activities on, within or in the vicinity of Licensor's Poles or Right-Of-Way if, in Licensor's sole judgment, any hazardous condition arises due to the activity (including both acts and omissions) of any Licensee Contractor or Licensee employee, which suspension shall cease when the condition has been rectified.

E. Licensee represents and warrants that all Licensee Contractors shall maintain the same insurance coverage and limits as are required of Licensee under this Agreement, and if not Licensee's insurance will provide such coverage.

F. Licensee acknowledges that all Licensee Contractors are not Licensor's employees or agents and Licensee assumes full responsibility for their actions or omissions to act. Licensee shall be solely responsible for the payment of compensation of Licensee's employees, contractors or agents assigned to perform work hereunder and such employees, contractors and agents shall be informed that they are not entitled to the provision of any Licensor benefits. Licensor shall not be responsible for payment of workman's compensation, disability benefits, and unemployment insurance or for withholding or paying employment related taxes for any employee of Licensee, but such responsibility shall be solely that of Licensee. In the event that any federal, state or local government agency, any court or any other applicable entity determines that the personnel provided by Licensee or any permitted Licensee Contractor are employees of Licensor for any purpose, Licensee agrees to indemnify, defend and save harmless Licensor from all liabilities, costs, and expenses (including, but not limited to, reasonable attorney fees) associated with such determination in accordance with the indemnification provision of this License Agreement.

G. Any work by Licensee Contractors on, within or in Licensor's Poles or Right-Of-Way shall be done only when specific authorization for such work has been obtained in writing in advance from Licensor pursuant to the terms and conditions of this Agreement. The parties agree that all work shall be performed according to existing industry standards and practices and the requirements and specifications set forth in this Agreement and any License issued hereunder.

20. DEFAULT

A. In addition to other events of defaults defined anywhere else in this Agreement, any one of the following shall be deemed the occurrence of a default under this Agreement:

1. failure by Licensee to pay when due any fee or other sum required to be paid under the terms of this Agreement.
2. failure by either party to perform or observe any other term, condition, covenant, obligation, or provision of this Agreement and such default continues for a period of thirty (30) days after written notice thereof from the other party (provided that if such default is not curable within a thirty (30) day period, the period may be extended if the party substantially commences to cure such default and proceeds diligently thereafter to effect such cure).

3. the filing of any tax or lien against Poles because of any act or omission by Licensee which is not bonded or discharged within thirty (30) days of the date of notice to Licensee that such lien has been filed;
4. Licensee's voluntary or involuntary bankruptcy;
5. Licensee's use or maintenance of its Attachments in violation of any law or regulation, or in aid of any unlawful act or undertaking;
6. if any authorization which may be required of Licensee by any governmental or private authority for the placement, operation, or maintenance of Licensee's Attachments is denied or revoked.

B. In the event of a default and subject to any other applicable provision of this Agreement, the non-defaulting party, without any further notice to the defaulting party (except where expressly provided for below or required by applicable law), may do any one or more of the following:

1. perform on behalf and at the expense of the defaulting party, any obligation of the defaulting party under this Agreement which the defaulting party has failed to perform and of which the non-defaulting party shall have given the defaulting party notice, the cost of which performance shall be paid by the defaulting party to the non-defaulting party upon demand;
2. terminate this Agreement by giving sixty (60) days written notice of such termination to Licensee and remove Licensee's Attachments and store Licensee's facilities in a public warehouse or elsewhere at the expense of and for the account of Licensee without Licensor being deemed guilty of trespass or conversion, and without Licensor becoming liable for any loss or damages to Licensee occasioned thereby; or
3. exercise any other legal or equitable right or remedy that the non-defaulting party may have.

C. The defaulting party shall repay to the non-defaulting party upon demand any costs and expenses incurred by the non-defaulting party (including, without limitation, reasonable attorneys' fees) in successfully enforcing this Agreement.

D. Upon termination of this Agreement by the non-defaulting party, the defaulting party shall remain liable to the non-defaulting party for any and all fees, other payments and damages which may be due or sustained in accord with this Agreement prior to such termination, all reasonable costs, fees and expenses, including, without limitation, reasonable attorney' fees incurred by the non-defaulting party in pursuit of its remedies hereunder.

E. All rights and remedies of the non-defaulting party set forth in this Agreement shall be cumulative and none shall exclude any other right or remedy, now or hereafter allowed by or available under any statute, ordinance, rule of court, or the common law, either at law or in equity, or both.

21. INDEMNIFICATION AND LIMITATION OF LIABILITY

A. Licensee shall compensate Licensor for the full actual loss, damage or destruction of Licensor's property that in any way arises from or is related to this Agreement or activities undertaken pursuant to this Agreement (including, without limitation, the installation, construction, operation, or maintenance of Licensee's Attachments).

B. Licensee agrees to defend, indemnify, protect and hold harmless Licensor and its officers, directors, employees, shareholders, successors, assigns, agents, affiliates, representatives, partners, and contractors from and against any and all claims, actions, administrative proceedings (including, without limitation, informal proceedings), judgments, damages, penalties, fines, cost, liabilities, interests, or loss, including, without limitation, reasonable attorneys' fees and expenses, consultant fees, and expert fees, together with all other costs and expenses of any kind or nature suffered by or asserted against Licensor in any way arising out of or connected with this Agreement or activities undertaken pursuant to this Agreement (including, without limitation, the installation, construction, operation or maintenance of Licensee's Attachments, unless caused solely by the negligence or willful misconduct of Licensor or Licensor's affiliates, agents, officers, employees and assigns). Licensee expressly assumes all liability for actions by its affiliates, agents, officers, employees, or Licensee Contractors and expressly waives any immunity from the enforcement of this indemnification provision that might otherwise be provided by workers' compensation law or by other state or federal laws.

C. Without limiting any of the foregoing, Licensee assumes all risk of, and agrees to relieve Licensor of any and all liability for, loss or damage (and the consequences of loss or damage) to any facilities placed on Licensor's property and any other financial loss sustained by Licensee, except to the extent caused by the sole negligence or willful misconduct on the part of Licensor or Licensor's agents, officers, employees, and assigns.

D. Without limiting the foregoing, Licensee expressly agrees to indemnify, defend, and hold harmless Licensor and Licensor's agents, officers, employees and assigns from any and all claims asserted by end users/customers of Licensee in any way arising out of or in connection with this Agreement or Licensee's Attachments, except to the extent caused solely by the negligence or willful misconduct of Licensor or Licensor's agents, officers, employees, and assigns, or its contractors.

E. Notwithstanding anything to the contrary in this Agreement, Licensee further shall indemnify and hold harmless Licensor, its agents, officers, employees, and assigns from and against any claims, liabilities, losses, damages, fines, penalties, and costs (including, without limitation, reasonable attorneys' fees) whether foreseen or unforeseen, which the Licensor suffers or incurs because of:

1. any discharge of Hazardous Materials resulting from acts or omissions of Licensee, Licensee Contractors or Licensee's predecessor in interest;
2. acts or omissions of Licensee, its agents, employees, Licensees, or representatives in connection with any cleanup required by law, or
3. failure of Licensee or Licensee Contractors to comply with Environmental, Safety and Health Laws.

F. Licensee shall indemnify, protect, and hold harmless Licensor from and against any and all claims for libel and slander, copyright and/or patent infringement arising directly or indirectly by reason of installation of Licensee's Attachments pursuant to this Agreement.

G. In the event of any claim, demand or litigation specified the indemnity provision, the party to be indemnified (the "Indemnified Party") shall give prompt notice to the other party (the "Indemnifying Party") of such claim, demand or litigation. The Indemnifying Party shall have sole control of the defense of any action or litigation on such a claim or demand (including the selection of appropriate counsel) and all negotiations for the settlement or compromise of the same, except that the Indemnifying Party may not make any non-monetary settlement or compromise without the Indemnified Party's consent, which consent shall not be unreasonably withheld. The Indemnified Party shall cooperate with the Indemnifying Party in the defense and/or settlement of any claim, demand or litigation. Nothing herein shall be deemed to prevent the Indemnified Party from participating in the defense and/or settlement of any claim, demand or litigation by the Indemnified Party's own counsel at the Indemnified Party's own expense.

H. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED IN THE AGREEMENT, NEITHER PARTY SHALL BE LIABLE TO THE OTHER PARTY FOR CONSEQUENTIAL, INCIDENTAL, PUNITIVE, EXEMPLARY OR INDIRECT DAMAGES SUFFERED BY SUCH PARTY OR BY ANY SUBSCRIBER, CUSTOMER OR PURCHASER OF SUCH PARTY FOR LOST PROFITS OR OTHER BUSINESS INTERRUPTION DAMAGES, WHETHER BY VIRTUE OF ANY STATUTE, IN TORT OR IN CONTRACT, UNDER ANY PROVISION OF INDEMNITY, OR OTHERWISE, REGARDLESS OF THE THEORY OF LIABILITY UPON WHICH ANY SUCH CLAIM MAY BE BASED OR WHETHER IT (a) HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES OR (b) IS NEGLIGENT.

22. INSURANCE

A. Licensee shall obtain and maintain, in full force and effect at all times, during operations covered by this Agreement, such minimum insurance as will cover the obligations and liabilities of Licensee, its agents, and its employees which may arise from the operations under this Agreement. Insurance shall have limits of not less than Commercial General Liability policy of minimum limits of:

General Aggregate	\$ 2,000,000 per policy period
Products/Completed Operations Aggregate	\$ 2,000,000 per policy period
Personal Injury/Advertising	\$ 2,000,000 per occurrence
Each Occurrence	\$ 2,000,000 per occurrence
Fire Legal Liability	\$ 50,000 any one fire

B. The policy will be endorsed to show the above aggregate limits applying to "each" job site or, as an alternative, the General Aggregate will be increased to \$4,000,000 per policy period. Policy will also specifically state the coverage applies to all operations conducted by the Licensee, its employees, or agents on behalf of Licensee or subsidiary.

C. Where the performance of the work involves structural property, underground property, or blasting, Licensee's Commercial General Liability insurance policy shall provide coverage to the insured for legal liability arising from operations under this Agreement for property damage:

1. arising out of blasting,
2. arising out of collapse of, or structural injury to, any building or structure or
3. To underground facilities and utilities.

D. Other general liability forms are acceptable in lieu of the Commercial General Liability Form however they are not to be used without written approval from Licensor.

1. Business Automobile Liability policy with minimum limits of:

Bodily Injury	\$2,000,000 per accident
Property Damage	\$ 2,000,000 per accident
OR	
Combined Single Limit	\$ 2,000,000 per accident

The policy will be issued using symbol "1 - any auto" coverage.

2. Workers Compensation:

Part 1 - Medical Benefits	Statutory
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Part 2 - Employer's Liability as indicated:

Bodily Injury by Accident	\$ 1,000,000 each accident
Bodily Injury by Disease	\$ 1,000,000 each employee
Bodily Injury by Disease	\$ 1,000,000 policy limit

E. The policy will show the state in which operation on behalf of the Licensee and/or subsidiary is being conducted. For operations conducted within monopolistic (state fund) states, Licensee will furnish a certificate of compliance from the appropriate state fund administrator.

F. In each and every policy except workers' compensation, Licensor and its subsidiaries shall be named an "additional insured" with respect to activities performed on behalf of the Licensee and its subsidiaries.

G. Coverage provided by the policies listed in this paragraph will be issued by an insurance company, licensed in the state in which operations on behalf of the Licensee are to be conducted. It is acceptable to use both primary and excess/umbrella policies to obtain necessary limits. The worker's compensation policy must contain a waiver of subrogation clause.

H. Licensee will furnish to Licensor, a certificate evidencing insurance coverage under sub-paragraphs 22(A) and (D). Such certificate or Licensee shall provide for a thirty (30) day prior notice to the Licensor of any cancellation or material changes in coverage and shall be signed by a legal representative of the issuing insurance company. The certificate of insurance shall be sent to Licensor's contact identified in Exhibit E.

I. The provisions of sub-paragraphs 22 (A) and (D) shall also apply to all Licensee Contractors and Licensee shall be responsible for their compliance herewith.

23. NOTICES

Any and all notices to a party required or permitted under this Agreement shall be in writing and shall be: (a) delivered personally; (b) delivered by express overnight delivery service; (c) mailed, via certified mail or first class U.S. Postal Service, with postage prepaid, and a return receipt requested; or (d) delivered by electronic mail; provided that a paper copy is also sent via methods (a), (b), or (c) of this Section. Notices will be deemed given as of the earliest of: the date of actual receipt; the next business day when sent via express overnight delivery service; five (5) calendar days after mailing in the case of first class or certified U.S. Postal Service, or on the date set forth on the confirmation produced by the sent confirmation when sent prior to 5:00 p.m. in the recipient's time zone, but the next business day when delivered at 5:00 p.m. or later in the recipient's time zone. Notices will be addressed to the parties as set forth in Exhibit E as may be updated in writing by the parties from time to time in accordance with method set forth under this Section 23.

24. CONFIDENTIALITY

Neither party shall at any time disclose, provide, demonstrate or otherwise make available to any third party any of the terms or conditions of this Agreement or any materials provided by either party specifically marked as confidential, except upon written consent of the other party, or as may be required by applicable law or governmental authorities. Notwithstanding the foregoing, nothing in this Section shall prevent disclosure to a party's authorized legal counsel who shall be subject to this confidentiality section, nor shall it preclude the use of this Agreement by the parties to obtain financing, to make or report matters related to this Agreement in any securities statements, or to respond to any requests by governmental or judicial authorities; provided, however, that any such disclosure shall be limited to the extent necessary, and shall be made only after attempting to obtain confidentiality assurances. Notwithstanding the foregoing, prior to making any disclosure in response to a request of a governmental authority or legal process, the party called upon to make such disclosure shall provide notice to the other party of such proposed disclosure sufficient to provide the other with an opportunity to timely object to such disclosure. Notwithstanding the foregoing, Licensor may, without notice to Licensee: (i) negotiate or enter into any agreement with any other person(s) or entity(ies) that is identical or similar to this Agreement; and (ii) provide the text of all or part of this Agreement to any other party, so long as Licensor shall redact therefrom all references to Licensee and shall not associate such text with Licensee or identify Licensee as having agreed to such text or terms.

25. DISPUTE RESOLUTION

A. Except in the case of:

1. a suit, action, or proceeding by one party to compel the other party to comply with its obligation to indemnify the other party pursuant to this Agreement, or
2. a suit, action or proceeding to compel either party to comply with the dispute resolution procedures set forth in this section, the parties agree to use the following procedure to resolve any dispute, controversy, or claim arising out of or relating to this Agreement or its breach.

B. At the written request of a party, each party shall designate a knowledgeable, responsible representative to meet and negotiate in good faith to resolve any dispute, controversy, or claim arising

under this Agreement. The parties intend that these negotiations be conducted by non-lawyer, business representatives. The substance of the negotiations shall be left to the discretion of the representatives. Upon mutual agreement, the representatives may utilize other alternative nonbinding dispute resolution procedures such as mediation to assist in the negotiations. Discussions and correspondence between the representatives for the purposes of these negotiations shall be treated as confidential, undertaken for purposes of settlement, shall be exempt from discovery and production, and shall not be admissible in any subsequent proceeding without the concurrence of all parties. Documents identified in or provided during such negotiations, which are not prepared for purposes of the negotiations, shall not be so exempt and may, if otherwise admissible, be admitted as evidence in any subsequent proceeding.

C. If a resolution of the dispute, controversy or claim is not reached within ninety (90) days of the initial written request referred to in this Section 25, the dispute, controversy, or claim may be filed with the State utility commission or the Federal Communication Commission, if applicable, for review and determination, provided the party invoking the commission's intervention process has in good faith negotiated, or attempted to negotiate, with the other party pursuant to this Section 25.

D. Except as otherwise provided in this Agreement under the Indemnification or Default provision or elsewhere, each party shall bear its own costs, including attorneys' fee, incurred in connection with any of the foregoing procedures. A party seeking discovery shall reimburse the responding party the cost of reproducing documents (to include search time and reproduction time costs).

26. TAXES

Each party shall pay all taxes and assessments lawfully levied on its own property and services subject to this Agreement.

27. WAIVER

Failure by either party to enforce or insist upon compliance with any of the terms or conditions of this Agreement shall not constitute a general waiver or relinquishment of any such terms or conditions, but the same shall be and remain at all times in full force and effect.

28. NO THIRD PARTY BENEFICIARIES

Except as otherwise provided in this Agreement, this Agreement is intended to benefit only the parties and may be enforced solely by the parties, their successors in interest or permitted assigns. It is not intended to, and shall not, create rights, remedies or benefits of any character whatsoever in favor of any persons, corporations, associations, or entities other than the parties, except as provided herein.

29. FORCE MAJEURE

Neither party shall be liable for any delay or failure in performance of any part of this License Agreement or License issued hereunder from any cause beyond its reasonable control and without its fault, omission or negligence, such as acts of God, acts of civil or military authority, embargoes, epidemics, war, terrorist acts, riots, insurrections, fires, explosions, earthquakes, nuclear accidents, floods, power blackouts, labor strikes, lockouts or work stoppages or severe weather ("Force Majeure Event"). In the event of a Force Majeure Event, upon giving prompt notice to the other party, the due date for performance by the affected party of its original obligation(s) shall be extended by a term equal to the

time lost by reason of the Force Majeure Event. In the event that the affected party is able to partially perform its obligations, it shall perform its obligations at a performance level no less than that which it uses for its own operations.

30. ASSIGNMENT

Licensee shall not assign; transfer or sublet the privileges hereby granted, or sell, lease or otherwise permit the use of its facilities on or any part thereof (all of the foregoing being "Transfers"), without prior consent in writing of Licensor. No such consent granted by Licensor shall be effective until Licensee's assignee, sublessee or other transferee has agreed, on an enforceable separate document signed and delivered to Licensor, to assume all obligations and liabilities of Licensee under this Agreement. Licensor may condition such consent upon the assignee's sublessee's or transferee's agreement to reasonable additional or modified terms or conditions. If there is a change of control of Licensee, then Licensor shall have the right, in its reasonable discretion, immediately to terminate this Agreement in its entirety without further liability. Licensor may assign or otherwise transfer this Agreement or any of its rights and interests to any firm, corporation or individual, without the prior consent of Licensee.

31. APPLICABLE LAW

This Agreement, and the rights and obligations contained in it, shall be governed and construed under the laws of the state in which the Attachments hereunder are to be located. The terms and conditions of this Agreement shall be subject to any and all applicable laws, rules, regulations or guidelines now in effect and that subsequently may be prescribed by any federal, state or local governmental authority. To the extent required by any such prescribed law, rule, regulation or guideline, the Parties agree to modify, in writing, the affected term(s) and conditions(s) of this Agreement to bring them into compliance with such law, rule, regulation or guideline. Should any term of this Agreement be determined by a court or agency with competent jurisdiction to be unenforceable, all other terms of this Agreement shall remain in full force and effect.

32. WAIVER OF JURY TRIAL

Licensor and Licensee each expressly waive its right to a jury trial.

33. ENTIRE AGREEMENT, MODIFICATIONS, SURVIVAL AND CONFLICTS AND TARIFFS

A. This Agreement cancels and supersedes all previous agreements whether written or oral, except for any sums due thereunder, between Licensor and Licensee with respect to the Licensee's Attachments to Licensor's Poles; and there are no other provisions, terms or conditions to this Agreement except as expressed herein. All currently effective Licenses and authorizations for Attachments granted pursuant to such previous agreements shall continue in effect subject to the terms and conditions of this Agreement.

B. This Agreement may be amended or supplemented at any time only upon written agreement by the parties hereto. Notwithstanding the foregoing, all Exhibits, fees, Licensor procedures and specifications may be modified by Licensor upon thirty (30) day notice to Licensee.

C. Notwithstanding the termination of this Agreement for any reason, Section 18 Compliance with Laws, Assumption of Risk and Disclaimer of Warranties, Section 21 Indemnification and Limitation of

Liability, Section 22 Insurance, Section 24 Confidentiality and any other provision intended to survive, shall survive termination to the maximum extent permitted under applicable law. Notwithstanding any provisions to the contrary, all rights, remedies, or obligations which arose or accrued prior to the termination or expiration of the terms hereof shall survive and be fully enforceable for the applicable statute of limitations period.

D. It is the intent of the parties that the terms and conditions of this Agreement and any applicable Licensor's state tariffs be construed as being consistent where possible. However, in the event of a conflict or difference between the terms and conditions of this Agreement and Licensor's state tariff, the terms of the applicable state tariff shall control.

34. AUTHORITY AND COUNTERPARTS AND ELECTRONIC SIGNATURES

A. Each party represents and warrants that it is a corporation duly organized, validly existing and in good standing under the laws of the state in which the obligations under this License Agreement are to be performed. Each party warrants that it has full power and authority to execute and deliver this License Agreement and to perform its obligations hereunder.

B. This Agreement may be executed using facsimile or electronic signatures and such facsimile or electronic version of the Agreement shall have the same legally binding effect as an original paper version. This Agreement may be executed in counterparts, each of which shall be deemed an original.

LICENSOR

LICENSEE

Windstream Kentucky West, LLC

(INSERT CATV/CLEC ENTITY)

BY: _____

BY: _____

NAME: _____

NAME: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

EXHIBIT A **DEFINITIONS**

“Application for Pole License” - A written request submitted in the form of Exhibit B from Licensee to Licensor requesting authorization to attach Licensee owned facilities to Poles in accordance with this Agreement.

“Attachment(s)” – any facilities, cables or equipment attached to Poles or any other property owned or controlled by Licensor.

“Effective Date” - is the date this Agreement is last signed by the parties.

“Force Majeure Event” – shall have the meaning set forth in Section 29 of the Agreement.

“Hazardous Materials” -

Any substance, material or waste now or hereafter defined or characterized as hazardous, toxic or dangerous as defined by the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”) of 1980, as amended, and other federal, state, and local health, safety, and environmental laws, ordinances, statutes, and rules, including but not limited to the Occupational Safety and Health Act (“OSHA”).

Any substance, material or waste now or hereafter classified as a contaminant or pollutant under any law, rules, ordinance, or authority.

Any other substance, material or waste, the manufacture, processing, distribution, use, treatment, storage, placement, disposal, removal or transportation of which is now or hereafter subject to regulation under any law, ordinance, statute, rule or regulation of any governmental body or authority.

“License” – is the specific nonexclusive and revocable permission from Licensor, in the form of a Licensor countersigned and returned Application for License, to Licensee authorizing Licensee to attach its facilities as applied for to Licensor Poles in accordance with this Agreement.

“Licensee Contractors” - shall have the meaning set forth in Section 10(D) of the Agreement.

“Make Ready Estimate” – is Licensor’s estimated cost to perform Make Ready Work on Licensor’s facilities on Poles to accommodate Licensee’s Attachment as requested in an Application for Pole License.

“Make Ready Work” - all Licensor, joint owner or other existing attacher work to prepare Licensor’s Poles and related facilities for the requested Attachment of Licensee’s facilities but not the actual placement of Attachments or administrative activities related to inquiries, verifications, requests or applications.

“Overlashing or overlashed” – lashing of an additional Licensee owned cable to Licensee’s own existing cable and/or strand attached to a Pole as set forth in Section 11 of this Agreement.

“Pole(s)” - a pole owned solely or jointly by Licensor or Poles owned by others to the extent that and for so long as Licensor has the right to permit others to be attached in the communications space.

“Pole Attachment Fee” - the fee paid annually per Attachment on a Pole. For billing purposes, a single Attachment includes the point of Attachment and all facilities located in the usable space on the Poles in the space assigned to Licensee (typically six inches above and six inches below the point of Attachment). If Licensee occupies more than one foot of usable space on Poles, separate Pole Attachment Fees shall apply to each one foot of space occupied.

“Right-of-Way” - right-of-way owned or controlled by Licensor.

“Unauthorized Attachment” – shall have the meaning set forth in Section 17(A) and 17(E) of the Agreement.

EXHIBIT B

FORM APPLICATION FOR POLE LICENSE

NOTE TO LICENSEE IF LICENSEE CHOOSES NOT TO PROCEED WITH THE APPLICATION - LICENSEE WILL BE BILLED FOR LICENSOR/WINDSTREAM'S ENGINEERING AND ADMINISTRATIVE TIME.

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

**PROPOSAL #:
Submit in Dupli**

Name of Firm/Licensee Applying: _____ Contact Name, Phone # _____
 Street Address, City, ST, ZIP of Firm Applying _____ EMAIL ADDRESS _____
 Licensee Authorized Signature & Date: _____



By this application & signature, Licensee agrees to pay all engineering and administrative fees associated with this application even if Licensee chooses NOT to proceed with the project. All ESTIMATED fees, including engineering & make-ready, MUST BE PAID IN FULL UP FRONT. NON PAYMENT OF FEES WILL RESULT IN THIS APPLICATION AND ALL FUTURE APPLICATIONS BEING PLACED ON HOLD. NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Town, Zip Code	Height, Class, Ownership of highest Pole	Hgt of highest Tel Cable	Hgt of highest Fiber Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	# & type of Attachments to attach	Height of Licensee	Licenseor Work Description
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
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20										
21										
22										
23										
24										
25										
ESTIMATED TOTAL COSTS										

EXHIBIT B CONTINUED

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: [Windstream .jointuse@windstream.com](mailto:Windstream_jointuse@windstream.com)

Acknowledged and Agreed to by Licensor: _____
 Name Title Date

Windstream Pole Attachment Data Sheet
EXHIBIT B - PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER																	
STREET LOCATION		NAME OF ATTACHER																	
CITY/SBORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME																
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy																			
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT																
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		TOP OF CONDUIT RISER HEIGHT																	
		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; if yes => <input type="checkbox"/> Primary <input type="checkbox"/> Secondary																	
MAKE READY WORK	REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, PROVIDE ADDITIONAL DETAIL																	
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; text-align: center;">POLE NO. =></td> <td style="width:25%; text-align: center;">BEFORE</td> <td style="width:25%; text-align: center;">AFTER</td> </tr> <tr> <td style="text-align: center;">*TYPE OF POWER ATTACHMENT =></td> <td style="text-align: center;"><input type="checkbox"/> Neutral</td> <td style="text-align: center;"><input type="checkbox"/> Secondary</td> </tr> </table>			POLE NO. =>	BEFORE	AFTER	*TYPE OF POWER ATTACHMENT =>	<input type="checkbox"/> Neutral	<input type="checkbox"/> Secondary										
POLE NO. =>	BEFORE	AFTER																	
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POLE DRAWING	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:50%; vertical-align: top;"> Company Name 1. _____ 2. _____ 3. _____ 4. _____ </td> <td style="width:50%; text-align: center; vertical-align: middle;"> </td> </tr> </table>			Company Name 1. _____ 2. _____ 3. _____ 4. _____															
	Company Name 1. _____ 2. _____ 3. _____ 4. _____																		
	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%; text-align: center;">MID-SPAN HEIGHT Fl.</td> <td colspan="3" style="text-align: center;">SPAN CROSSES OVER (Check all that apply)</td> </tr> <tr> <td></td> <td><input type="checkbox"/> Body of Water</td> <td><input type="checkbox"/> Street</td> <td><input type="checkbox"/> Driveway</td> <td><input type="checkbox"/> Field</td> <td><input type="checkbox"/> Interstate</td> </tr> <tr> <td></td> <td><input type="checkbox"/> Swimming Pool</td> <td><input type="checkbox"/> Building</td> <td><input type="checkbox"/> Railroad</td> <td><input type="checkbox"/> Yard</td> <td><input type="checkbox"/> Parking Lot</td> </tr> </table>			MID-SPAN HEIGHT Fl.	SPAN CROSSES OVER (Check all that apply)				<input type="checkbox"/> Body of Water	<input type="checkbox"/> Street	<input type="checkbox"/> Driveway	<input type="checkbox"/> Field	<input type="checkbox"/> Interstate		<input type="checkbox"/> Swimming Pool	<input type="checkbox"/> Building	<input type="checkbox"/> Railroad	<input type="checkbox"/> Yard	<input type="checkbox"/> Parking Lot
	MID-SPAN HEIGHT Fl.	SPAN CROSSES OVER (Check all that apply)																	
		<input type="checkbox"/> Body of Water	<input type="checkbox"/> Street	<input type="checkbox"/> Driveway	<input type="checkbox"/> Field	<input type="checkbox"/> Interstate													
	<input type="checkbox"/> Swimming Pool	<input type="checkbox"/> Building	<input type="checkbox"/> Railroad	<input type="checkbox"/> Yard	<input type="checkbox"/> Parking Lot														
NOTE																			

EXHIBIT C

REMOVAL NOTICE AND LICENSE SURRENDER FORM

NOTIFICATION OF SURRENDER

Notification No. _____ **Date:** _____
City & State: _____

In accordance with the terms and conditions of the license agreement between us, dated _____, notice is hereby given that the License covering Attachments to the outside plant structures, as shown on the attached sketch, is surrendered.

Licensee: _____
Signature: _____
By (Print/Type): _____
Title: _____
Date: _____

Date Surrender Notice Received: _____

Licensor: _____
Signature: _____
By (Print/Type): _____
Title: _____
Date: _____

EXHIBIT D

SCHEDULE OF RATES, FEES AND CHARGES

Annual Attachment Rate (per Attachment)**	\$ <u>\$6.80 2-User, \$5.50 3-User</u>
Agreement Fee	\$ <u>400.00</u>
Application for Pole License Fee	\$ <u>75.00 per application</u>
Unauthorized Attachment fee	\$ <u>Per Section 17 of the Agreement</u>

**** If Attachments are in a non-tariffed state, the rental rate is subject to annual adjustment based on FCC Calculation.**

EXHIBIT E

NOTICES CONTACT INFORMATION

IF TO LICENSOR

Email: windstream.poles@windstream.com

Windstream Kentucky West, LLC

PO Box 25410

Little Rock, AR 72221

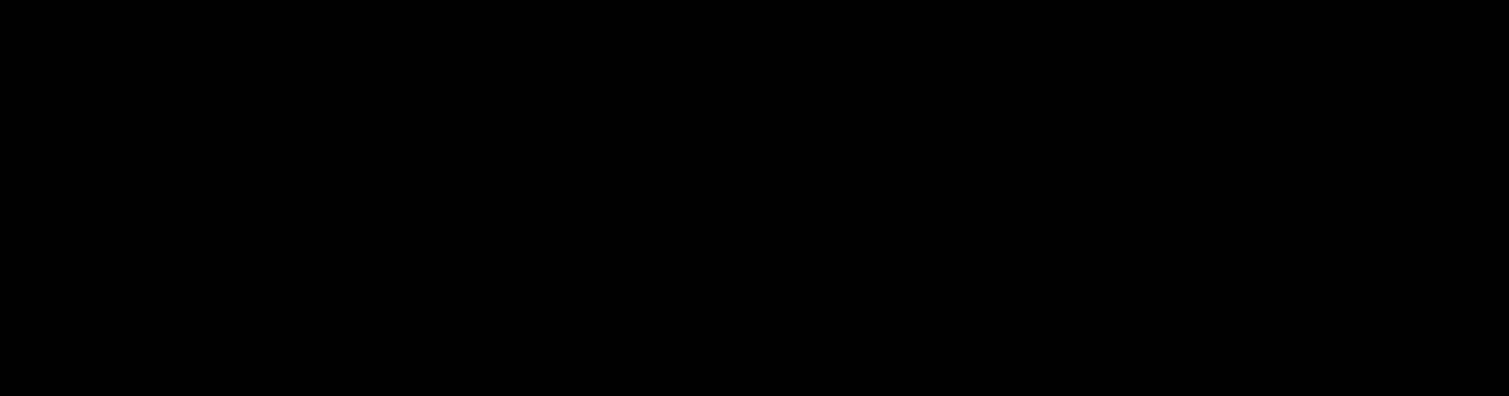
IF TO LICENSEE:

ENGINEERING CONTACT FOR LICENSEE

Company Name	
Name of Responsible Party	
Address	
Phone	
Fax	
Email	

INVOICING / BILLING CONTACT FOR LICENSEE

Name	
Address	
Phone	
Fax	
Email	



From: Anita Larson <Anita.Larson@metronetinc.com>
Sent: Wednesday, January 03, 2018 4:55 PM
To: Lee, Robert <Robert.Lee@windstream.com>; King, Daniel <Daniel.King@windstream.com>
Cc: Eastman, Andrew M <Andrew.Eastman@windstream.com>
Subject: RE: Pole data - MetroNet

Robert: My folks still have some questions. Would it be okay to put Dustin Wilson in contact with you directly? Unfortunately, I don't know enough about this to anticipate questions that he may have. If we could just put the two of you in contact, I won't have to keep bugging you. Let me know if that will work and I'll provide your email to him so he can email some times that might work to get on the phone.

Thanks,
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: Lee, Robert [<mailto:Robert.Lee@windstream.com>]
Sent: Wednesday, January 03, 2018 4:05 PM
To: Anita Larson <Anita.Larson@metronetinc.com>; King, Daniel <Daniel.King@windstream.com>
Cc: Eastman, Andrew M <Andrew.Eastman@windstream.com>
Subject: RE: Pole data - MetroNet

Those fields can be a little confusing, I know. The Ownership field will tell us whether the pole is owned by a Windstream entity (Windstream proper or the REIT company that was spun off, and whether it is a CLEC or ILEC company), by a foreign company or by a customer. I was asked to provide the Windstream poles, so you will not see the FOREIGN or CUSTOMER designations in the data that I sent. Likewise, FGN_Owner should be null as this field is used to tell the name of the foreign company that owns the pole.

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, January 03, 2018 4:51 PM
To: Lee, Robert <Robert.Lee@windstream.com>; King, Daniel <Daniel.King@windstream.com>
Cc: Eastman, Andrew M <Andrew.Eastman@windstream.com>
Subject: RE: Pole data - MetroNet

Robert: Thanks again for the information. My folks are asking what the difference is between the "Ownership" and the "FGN_Owner" fields. Can you shed light on this?

Thanks again!
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel
Sent: Wednesday, January 03, 2018 12:03 PM
To: Anita Larson <Anita.Larson@metronetinc.com>
Cc: Lee, Robert <Robert.Lee@windstream.com>; Eastman, Andrew M <Andrew.Eastman@windstream.com>
Subject: RE: Pole data - MetroNet

Anita:

I have copied Robert Lee and Andy Eastman on my response to you.

Robert, MetroNet is still having some problems accessing the files we have provided to them. Could someone from MetroNet reach out to you to try and work through their issues?

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, January 03, 2018 10:42 AM
To: King, Daniel <Daniel.King@windstream.com>
Subject: RE: Pole data - MetroNet

Dan: Thanks so much. Our folks are still having some issues with it. Would it be possible for them to reach out directly to WIN's team that handles these or are you the one.

Thanks again,
Anita

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8837 Bond Street
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Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, January 03, 2018 8:45 AM
To: Anita Larson <Anita.Larson@metronetinc.com>
Subject: FW: Pole data - MetroNet

Anita:

Sorry for the mix-up. We thought that the missing files were in the .zip file we previously sent. Here are the additional files you requested. Let us know if you need anything else.

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From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Thursday, December 28, 2017 12:42 PM
To: King, Daniel <Daniel.King@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Subject: RE: Pole data - MetroNet

Dan: I received some clarification on what else we need. Along with the DBF file you sent, we also need the SHP, SHX, and PRJ files. Hope this makes sense. If not, please let me know. I may need to put you, James or Michelle directly in contact with people on our end that understand this better.

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Mobile: 785.331.7296

Email: anita.larson@qservicesco.com

From: Anita Larson

Sent: Thursday, December 28, 2017 11:55 AM

To: 'King, Daniel' <Daniel.King@windstream.com>

Cc: Lloyd, James <James.Lloyd@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>

Subject: FW: Pole data - MetroNet

Dan: Thanks again for sending the attached. However, I'm being told that we need the entire "esri shapefile" and not just the .dbf file. I'm not sure what that is, but would you mind checking on it and forwarding it, too?

We appreciate it!

Thanks again!

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Email: anita.larson@qservicesco.com

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Sent: Thursday, December 28, 2017 7:31 AM

To: Anita Larson <Anita.Larson@metronetinc.com>

Cc: Lloyd, James <James.Lloyd@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>

Subject: Pole data - MetroNet

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Here is an ESRI shapefile for the Windstream poles in the Lexington area.

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Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]

Sent: Friday, December 15, 2017 3:36 PM

To: King, Daniel <Daniel.King@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>;

Lloyd, James <James.Lloyd@windstream.com>

Cc: John Greenbank <John.Greenbank@metronetinc.com>


Subject: Pole data

Dan/Michelle/James: Thanks again for your time earlier this week. We look forward to our call next Tuesday. In the meantime, do you have a GIS of your poles in Lexington? Kentucky Utilities gave us theirs and it would be very helpful to have Windstream's, too. If you do have it and would send it over, it would be greatly appreciated.

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To: Lee, Robert <Robert.Lee@windstream.com>; King, Daniel <Daniel.King@windstream.com>
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Thank you Robert. I will forward to my folks. I'll let you know if we still have issues. We appreciate your time and assistance.

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Subject: RE: Pole data - MetroNet

Perhaps this file will work better. It is a complete archive of the 4 files that I zipped on another machine.

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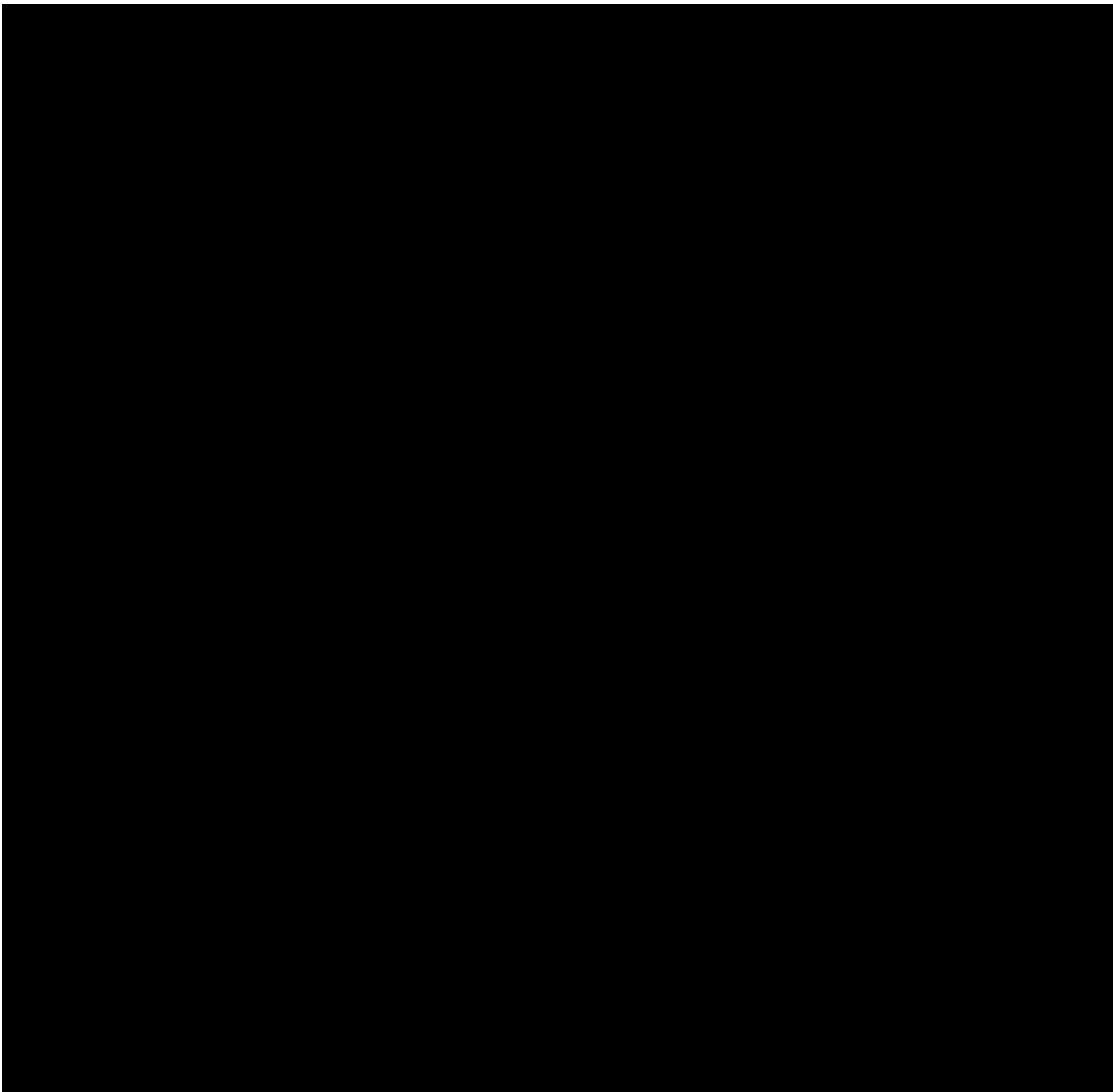
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Sent: Thursday, December 28, 2017 11:55 AM
To: 'King, Daniel' <Daniel.King@windstream.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Subject: FW: Pole data - MetroNet

Dan: Thanks again for sending the attached. However, I'm being told that we need the entire "esri shapefile" and not just the .dbf file. I'm not sure what that is, but would you mind checking on it and forwarding it, too?

We appreciate it!

Thanks again!
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Thursday, December 28, 2017 7:31 AM
To: Anita Larson <Anita.Larson@metronetinc.com>
Cc: Lloyd, James <James.Lloyd@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>
Subject: Pole data - MetroNet

Anita:

Here is an ESRI shapefile for the Windstream poles in the Lexington area.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Friday, December 15, 2017 3:36 PM
To: King, Daniel <Daniel.King@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>;
Lloyd, James <James.Lloyd@windstream.com>
Cc: John Greenbank <John.Greenbank@metronetinc.com>
Subject: Pole data

Dan/Michelle/James: Thanks again for your time earlier this week. We look forward to our call next Tuesday. In the meantime, do you have a GIS of your poles in Lexington? Kentucky Utilities gave us theirs and it would be very helpful to have Windstream's, too. If you do have it and would send it over, it would be greatly appreciated.

Thanks,
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Sent: Friday, December 15, 2017 3:36 PM

To: King, Daniel <Daniel.King@windstream.com>; McLaughlin, Michelle M <Michelle.McLaughlin@windstream.com>;
Lloyd, James <James.Lloyd@windstream.com>

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Email: anita.larson@qservicesco.com



From: Lee, Robert
Sent: Thursday, January 04, 2018 12:29 PM
To: Dustin Wilson <Dustin.Wilson@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Cc: King, Daniel <Daniel.King@windstream.com>
Subject: RE: Windstream Contact for Pole Data Questions

Dustin,

All of the poles in the shapefile are supposed to be Windstream poles, but I've found that some of the data is suspect. There are values in the fgn_owner field when those should all be null for Windstream-owned poles. The problem is, which field is in error? The ownership or the fgn_owner? I would treat all of the poles that do not have a value in fgn_owner as Windstream, and any others as potentially Windstream but perhaps belonging to the company found in fgn_owner. For your purposes, the CLEC/ILEC distinction doesn't matter, nor does WINDTREAM/REIT.

If I can answer any further questions, don't hesitate to ask.

Rob

From: Dustin Wilson [<mailto:Dustin.Wilson@metronetinc.com>]
Sent: Thursday, January 04, 2018 9:24 AM
To: Anita Larson <Anita.Larson@metronetinc.com>
Cc: Lee, Robert <Robert.Lee@windstream.com>; King, Daniel <Daniel.King@windstream.com>
Subject: RE: Windstream Contact for Pole Data Questions

Thank you Anita.

Good morning Robert,

I'm working to identify which poles in the shapefile you sent over are Windstream owned files. Originally I assumed I needed to use the ownership column, but based on your email to Anita yesterday I'm now leaning more towards **all** of the poles in the shapefile being Windstream owned. Is that true? If so is there an operational difference between the ILEC/CLEC poles where Metronet is concerned? My number is below if you'd like to get together via phone, if not I'm also good with email.

Thanks so much for the data, and for your willingness to help.

Dustin Wilson

MetroNet | Manager of Analytics
3701 Communications Way | Evansville, IN 47715
Office: 812.253.1542
www.MetronetInc.com

From: Anita Larson
Sent: Wednesday, January 3, 2018 6:10 PM
To: Dustin Wilson <Dustin.Wilson@metronetinc.com>
Cc: Lee, Robert <Robert.Lee@windstream.com>; King, Daniel <Daniel.King@windstream.com>
Subject: Windstream Contact for Pole Data Questions

Dustin: Robert Lee is the individual that has been providing information to us on Windstream's poles in KY. He indicated that he doesn't mind if you reach out to him directly with your questions. I have copied Robert on this email so you two can arrange a mutually convenient time to get on the phone.

Thanks again, Robert.

Thanks,
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: Dustin Wilson <Dustin.Wilson@metronetinc.com>
Sent: Thursday, January 04, 2018 8:24 AM
To: Anita Larson <Anita.Larson@metronetinc.com>
Cc: Lee, Robert <Robert.Lee@windstream.com>; King, Daniel <Daniel.King@windstream.com>
Subject: RE: Windstream Contact for Pole Data Questions

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Dustin Wilson

MetroNet | Manager of Analytics
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METRONET.

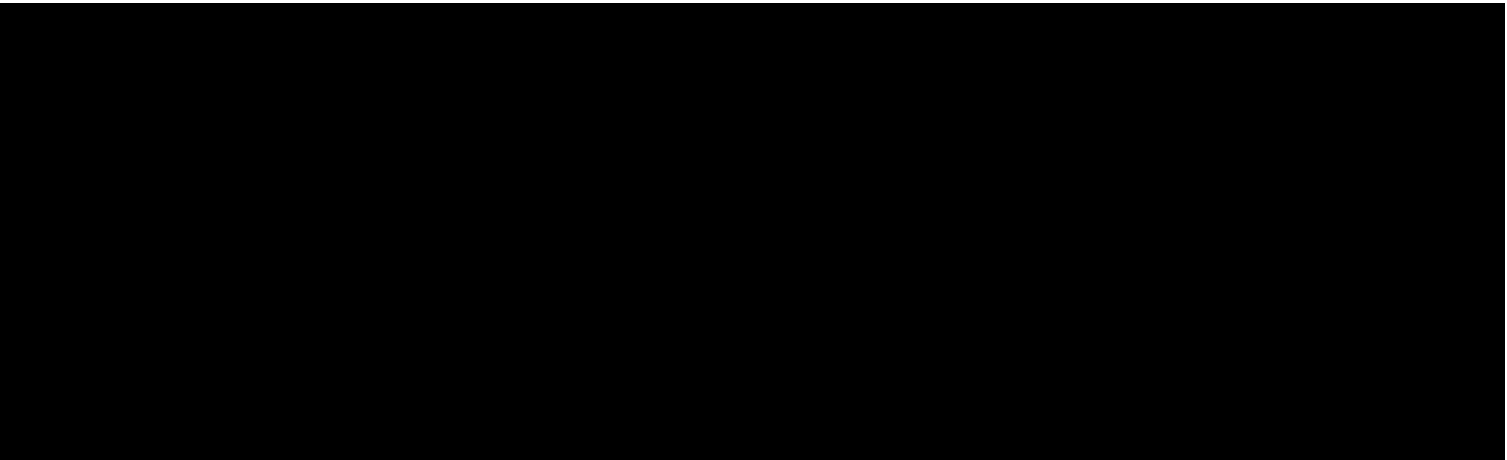
From: Anita Larson
Sent: Wednesday, January 3, 2018 6:10 PM
To: Dustin Wilson <Dustin.Wilson@metronetinc.com>
Cc: Lee, Robert <Robert.Lee@windstream.com>; King, Daniel <Daniel.King@windstream.com>
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Thanks again, Robert.

Thanks,
Anita

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Email: anita.larson@qservicesco.com



From: King, Daniel
Sent: Thursday, September 28, 2017 9:45 AM
To: John Campbell <John.Campbell@metronetinc.com>
Subject: FW: Windstream KDL Invoice
Importance: High

John:

Were you able to confirm that the attached documentation was the response that you shared with me was going to be coming concerning the colocation space / power dispute between Windstream and nGenX / MetroNet?

Also, has Kevin had any success in getting a call set up with MetroNet, Windstream and Duke?

I have an internal call at 1:30 to talk about these issues, so any update you could provide me before then will be appreciated.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: King, Daniel
Sent: Friday, September 15, 2017 11:11 AM
To: John Campbell <John.Campbell@metronetinc.com>
Subject: FW: Windstream KDL Invoice

John:

I just wanted to confirm that this was the response that you shared with me was going to be coming concerning the colocation space / power dispute between Windstream and nGenX / MetroNet. The reason why I am asking is because I expected it to come in the form of a net charge (i.e., Windstream said that MetroNet owed \$X, MetroNet says that Windstream owes \$Y, and when the two are netted out against each other the result is \$Z), instead of just coming

as a straight invoice. However, maybe you did tell me that it was going to be coming as a straight invoice, and I just didn't remember.

FYI. I will be in Little Rock early next week, so I expect to be able to share with you what our plans are for next steps on resolving this issue sometime next week.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Jason White [<mailto:Jason.White@metronetinc.com>]
Sent: Wednesday, August 23, 2017 4:18 PM
To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>
Cc: John Campbell <John.Campbell@metronetinc.com>; Jason Nutter <jason.nutter@metronetinc.com>
Subject: Windstream KDL Invoice

Sherry,

Please see attached invoice and supporting documentation.

Thanks,

Jason White
MetroNet | Margin Assurance Manager
8837 Bond St. | Overland Park, KS 66214
Office: 812.213.1165
www.MetronetInc.com

METRONET**.**

Vendor Name	Bill Date	Total Invoice Amount	Previously Billed to Windstream
Vectren Energy	7/14/2017	\$ 34,510.13	\$ 266.02
Vectren Energy	6/13/2017	\$ 33,430.76	\$ 252.14
Vectren Energy	5/11/2017	\$ 33,058.77	\$ 223.58
Vectren Energy	4/13/2017	\$ 32,747.71	\$ 255.82
Vectren Energy	3/13/2017	\$ 29,687.79	\$ 221.95
Vectren Energy	2/13/2017	\$ 31,657.19	\$ 255.82
Vectren Energy	1/13/2017	\$ 34,663.44	\$ 230.11
Vectren Energy	12/13/2016	\$ 31,842.05	\$ 263.98
Vectren Energy	11/11/2016	\$ 34,868.85	\$ 265.20
Vectren Energy	10/13/2016	\$ 33,037.70	\$ 259.08
Vectren Energy	9/14/2016	\$ 37,479.38	\$ 274.58
Vectren Energy	8/12/2016	\$ 36,215.05	\$ 267.24
Vectren Energy	7/14/2016	\$ 36,325.33	\$ 258.67
Vectren Energy	6/13/2016	\$ 33,542.07	\$ 249.29
Vectren Energy	5/12/2016	\$ 31,197.79	\$ 242.76
Vectren Energy	4/13/2016	\$ 29,424.85	\$ 239.09
Vectren Energy	3/11/2016	\$ 32,982.27	\$ 225.22
Vectren Energy	2/11/2016	\$ 32,004.63	\$ 254.18
Vectren Energy	1/13/2016	\$ 36,368.71	\$ 247.25
Vectren Energy	12/11/2015	\$ 33,462.08	\$ 241.54
Vectren Energy	11/11/2015	\$ 29,945.15	\$ 257.86
Vectren Energy	10/13/2015	\$ 30,562.52	\$ 252.14
Vectren Energy	9/14/2015	\$ 34,092.81	\$ 281.52
Vectren Energy	8/15/2015	\$ 37,496.49	\$ 269.28
Vectren Energy	7/15/2015	\$ 37,349.93	\$ 276.62
Vectren Energy	6/15/2015	\$ 32,431.82	\$ 251.33
Vectren Energy	5/15/2015	\$ 34,753.79	\$ 255.41
Vectren Energy	4/15/2015	\$ 39,190.63	\$ 229.70
Vectren Energy	3/15/2015	\$ 30,967.72	\$ 264.38
Vectren Energy	2/15/2015	\$ 32,281.25	\$ 254.18
Vectren Energy	1/15/2015	\$ 36,415.73	\$ 248.06
Vectren Energy	12/15/2014	\$ 32,307.88	\$ 261.53
Vectren Energy	11/15/2014	\$ 34,094.05	\$ 216.65
Vectren Energy	10/15/2014	\$ 31,636.07	\$ 275.81
Vectren Energy	9/15/2014	\$ 34,092.81	\$ 281.52
Vectren Energy	8/8/2014	\$ 36,982.08	\$ 259.90
Vectren Energy	7/9/2014	\$ 32,604.11	\$ 248.88
Vectren Energy	6/9/2014	\$ 28,371.31	\$ 249.29
Vectren Energy	5/12/2014	\$ 31,209.40	\$ 240.72
Vectren Energy	4/10/2014	\$ 31,900.04	\$ 248.88
Vectren Energy	3/12/2014	\$ 30,039.96	\$ 224.81
Vectren Energy	2/12/2014	\$ 32,787.87	\$ 247.66
Vectren Energy	1/13/2014	\$ 35,547.70	\$ 250.51
Vectren Energy	12/11/2013	\$ 30,857.03	\$ 248.88
Vectren Energy	11/12/2013	\$ 35,095.25	\$ 259.90
Vectren Energy	10/10/2013	\$ 31,030.59	\$ 259.08

Vectren Energy	9/12/2013	\$	35,133.59	\$	249.29
Vectren Energy	8/12/2013	\$	31,626.26	\$	250.51
Vectren Energy	7/11/2013	\$	32,608.59	\$	255.41
Vectren Energy	6/12/2013	\$	32,631.12	\$	257.04
Vectren Energy	5/10/2013	\$	33,301.62	\$	247.25
Vectren Energy	4/10/2013	\$	30,842.46	\$	253.78
Vectren Energy	3/12/2013	\$	31,030.71	\$	255.41
Vectren Energy	2/12/2013	\$	29,597.32	\$	251.33
Vectren Energy	1/11/2013	\$	32,079.55	\$	253.78
Vectren Energy	12/12/2012	\$	32,590.55	\$	243.58
Vectren Energy	11/9/2012	\$	31,474.42	\$	238.27
Vectren Energy	10/10/2012	\$	29,712.48	\$	238.68
Vectren Energy	9/12/2012	\$	31,861.35	\$	242.76
Vectren Energy	8/13/2012	\$	31,643.06	\$	246.02
Vectren Energy	7/12/2012	\$	32,354.11	\$	247.25
Vectren Energy	6/12/2012	\$	32,967.83	\$	251.45
Vectren Energy	5/10/2012	\$	32,967.83	\$	251.45
Vectren Energy	4/10/2012	\$	32,967.83	\$	251.45
Vectren Energy	3/12/2012	\$	32,967.83	\$	251.45
Vectren Energy	2/12/2012	\$	32,967.83	\$	251.45
Vectren Energy	1/11/2012	\$	32,967.83	\$	251.45
Vectren Energy	12/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	11/9/2011	\$	32,967.83	\$	251.45
Vectren Energy	10/10/2011	\$	32,967.83	\$	251.45
Vectren Energy	9/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	8/13/2011	\$	32,967.83	\$	251.45
Vectren Energy	7/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	6/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	5/10/2011	\$	32,967.83	\$	251.45
Vectren Energy	4/10/2011	\$	32,967.83	\$	251.45
Vectren Energy	3/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	2/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	1/11/2011	\$	32,967.83	\$	251.45
Vectren Energy	12/12/2010	\$	32,967.83	\$	251.45

Actual Windstream Data Center Portion		Revised Windstream Billing	
\$	3,885.51	\$	3,619.50
\$	3,694.17	\$	3,442.03
\$	3,550.55	\$	3,326.97
\$	3,613.39	\$	3,357.57
\$	3,088.21	\$	2,866.25
\$	3,465.66	\$	3,209.84
\$	3,789.18	\$	3,559.06
\$	3,517.19	\$	3,253.21
\$	3,932.50	\$	3,667.30
\$	3,664.05	\$	3,404.97
\$	3,955.41	\$	3,680.83
\$	3,852.34	\$	3,585.10
\$	3,728.01	\$	3,469.34
\$	3,589.54	\$	3,340.25
\$	3,495.58	\$	3,252.82
\$	3,441.78	\$	3,202.69
\$	3,243.73	\$	3,018.51
\$	3,660.76	\$	3,406.58
\$	3,565.10	\$	3,317.86
\$	3,477.73	\$	3,236.19
\$	3,712.54	\$	3,454.68
\$	3,632.63	\$	3,380.49
\$	4,055.28	\$	3,773.76
\$	4,045.49	\$	3,776.21
\$	3,877.80	\$	3,601.17
\$	3,982.66	\$	3,731.33
\$	3,622.51	\$	3,367.10
\$	3,682.35	\$	3,452.65
\$	3,310.18	\$	3,045.79
\$	3,808.71	\$	3,554.52
\$	3,659.34	\$	3,411.28
\$	3,571.56	\$	3,310.03
\$	3,770.23	\$	3,553.58
\$	3,120.93	\$	2,845.12
\$	4,055.28	\$	3,773.76
\$	3,742.64	\$	3,482.74
\$	3,586.28	\$	3,337.40
\$	3,594.34	\$	3,345.05
\$	3,465.71	\$	3,224.99
\$	3,583.94	\$	3,335.06
\$	3,240.47	\$	3,015.67
\$	3,569.06	\$	3,321.41
\$	3,611.43	\$	3,360.92
\$	3,587.29	\$	3,338.41
\$	3,741.98	\$	3,482.09
\$	3,731.44	\$	3,472.36

\$	3,814.37	\$	3,565.09
\$	3,832.96	\$	3,582.45
\$	3,678.66	\$	3,423.26
\$	3,700.99	\$	3,443.95
\$	3,562.02	\$	3,314.78
\$	3,655.46	\$	3,401.68
\$	3,292.56	\$	3,037.15
\$	3,617.68	\$	3,366.36
\$	3,654.46	\$	3,400.68
\$	3,508.91	\$	3,265.34
\$	3,645.59	\$	3,407.32
\$	3,649.78	\$	3,411.10
\$	3,716.54	\$	3,473.78
\$	3,762.76	\$	3,516.73
\$	3,561.66	\$	3,314.42
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
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\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
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\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61

Vendor Name	Invoice Number	Invoice Date
INDIANA MICHIGAN POWER COMPANY	04550188108 0717	20-JUL-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0617	21-JUN-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0517	24-MAY-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0417	21-APR-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0317	22-MAR-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0217	21-FEB-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0117	23-JAN-17
INDIANA MICHIGAN POWER COMPANY	04550188108 1216	20-DEC-16
INDIANA MICHIGAN POWER COMPANY	04550188108 1116	17-NOV-16
INDIANA MICHIGAN POWER COMPANY	04550188108 1016	19-OCT-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0916	20-SEP-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0516	21-AUG-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0816	21-AUG-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0716	21-JUL-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0616	21-JUN-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0416	21-APR-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0316	22-MAR-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0216	22-FEB-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0116	22-JAN-16
INDIANA MICHIGAN POWER COMPANY	04550188108 1215	21-DEC-15
INDIANA MICHIGAN POWER COMPANY	04550188108 1115	18-NOV-15
INDIANA MICHIGAN POWER COMPANY	04550188108 1015	20-OCT-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0915	21-SEP-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0815	20-AUG-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0715	22-JUL-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0615	22-JUN-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0515	21-MAY-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0415	22-APR-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0315	23-MAR-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0215	20-FEB-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0115	22-JAN-15
INDIANA MICHIGAN POWER COMPANY	04550188108 1214	19-DEC-14
INDIANA MICHIGAN POWER COMPANY	04550188108 1114	18-NOV-14
INDIANA MICHIGAN POWER COMPANY	04550188108 1014	20-OCT-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0914	19-SEP-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0814	20-AUG-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0714	22-JUL-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0614	20-JUN-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0514	21-MAY-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0414	22-APR-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0314	21-MAR-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0214	20-FEB-14
INDIANA MICHIGAN POWER COMPANY	04550188108 1213	19-DEC-13
INDIANA MICHIGAN POWER COMPANY	04550188108 1113	18-NOV-13
INDIANA MICHIGAN POWER COMPANY	04550188108 1013	18-OCT-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0913	19-SEP-13

INDIANA MICHIGAN POWER COMPANY	04550188108 0813	20-AUG-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0713	24-JUL-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0613	20-JUN-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0513	21-MAY-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0413	22-APR-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0313	21-MAR-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0213	20-FEB-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0113	22-JAN-13
INDIANA MICHIGAN POWER COMPANY	04550188108 1212	19-DEC-12
INDIANA MICHIGAN POWER COMPANY	04550188108 1112	16-NOV-12
INDIANA MICHIGAN POWER COMPANY	04550188108 1012	22-OCT-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0912	21-SEP-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0812	23-AUG-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0712	26-JUL-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0512	23-MAY-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0412	24-APR-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0312	21-MAR-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0212	21-FEB-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0112	23-JAN-12
INDIANA MICHIGAN POWER COMPANY	04550188108 1211	20-DEC-11
INDIANA MICHIGAN POWER COMPANY	04550188108 1111	17-NOV-11
INDIANA MICHIGAN POWER COMPANY	04550188108	21-OCT-11
INDIANA MICHIGAN POWER COMPANY	04550188108 0911	21-SEP-11
INDIANA MICHIGAN POWER COMPANY	04550188108 0811	24-AUG-11
INDIANA MICHIGAN POWER COMPANY	04550188108 0711	21-JUL-11
INDIANA MICHIGAN POWER COMPANY	045501881080211-0455018	23-FEB-11
INDIANA MICHIGAN POWER COMPANY	045501881080111-0455018	27-JAN-11
INDIANA MICHIGAN POWER COMPANY	045501881081210-0455018	29-DEC-10

Invoice Amount	Windstream Billing
\$ 280.14	\$ 196.10
\$ 282.97	\$ 198.08
\$ 249.01	\$ 174.31
\$ 237.17	\$ 166.02
\$ 237.79	\$ 166.45
\$ 207.16	\$ 145.01
\$ 269.51	\$ 188.66
\$ 261.68	\$ 183.18
\$ 145.86	\$ 102.10
\$ 157.31	\$ 110.12
\$ 187.20	\$ 131.04
\$ 175.74	\$ 123.02
\$ 182.71	\$ 127.90
\$ 191.33	\$ 133.93
\$ 171.53	\$ 120.07
\$ 179.49	\$ 125.64
\$ 174.17	\$ 121.92
\$ 235.64	\$ 164.95
\$ 245.83	\$ 172.08
\$ 193.44	\$ 135.41
\$ 130.60	\$ 91.42
\$ 141.07	\$ 98.75
\$ 150.94	\$ 105.66
\$ 156.61	\$ 109.63
\$ 193.18	\$ 135.23
\$ 170.87	\$ 119.61
\$ 139.10	\$ 97.37
\$ 162.80	\$ 113.96
\$ 212.59	\$ 148.81
\$ 265.41	\$ 185.79
\$ 280.83	\$ 196.58
\$ 212.38	\$ 148.67
\$ 146.48	\$ 102.54
\$ 128.57	\$ 90.00
\$ 134.06	\$ 93.84
\$ 135.09	\$ 94.56
\$ 144.64	\$ 101.25
\$ 133.69	\$ 93.58
\$ 118.15	\$ 82.71
\$ 149.85	\$ 104.90
\$ 326.17	\$ 228.32
\$ 491.41	\$ 343.99
\$ 252.26	\$ 176.58
\$ 159.88	\$ 111.92
\$ 142.23	\$ 99.56
\$ 154.06	\$ 107.84

\$	160.09	\$	112.06
\$	162.01	\$	113.41
\$	346.30	\$	242.41
\$	385.36	\$	269.75
\$	264.62	\$	185.23
\$	246.06	\$	172.24
\$	411.64	\$	288.15
\$	290.83	\$	203.58
\$	181.87	\$	127.31
\$	187.40	\$	131.18
\$	223.97	\$	156.78
\$	374.58	\$	262.21
\$	514.58	\$	360.21
\$	176.16	\$	123.31
\$	304.42	\$	213.09
\$	224.24	\$	156.97
\$	231.33	\$	161.93
\$	211.78	\$	148.25
\$	244.54	\$	171.18
\$	188.04	\$	131.63
\$	124.99	\$	87.49
\$	116.65	\$	81.66
\$	103.87	\$	72.71
\$	120.48	\$	84.34
\$	174.63	\$	122.24
\$	508.05	\$	355.64
\$	865.85	\$	606.10
\$	182.69	\$	127.88

Vendor Name	Invoice Number	Invoice Date	Total Invoice Amount
DUKE ENERGY	36003590016 0717	11-JUL-17	\$ 1,876.53
DUKE ENERGY	36003590016 0617	09-JUN-17	\$ 1,787.42
DUKE ENERGY	36003590016 0517	10-MAY-17	\$ 1,735.26
DUKE ENERGY	36003590016 0417	08-APR-17	\$ 1,508.83
DUKE ENERGY	36003590016 0317	08-MAR-17	\$ 1,445.47
DUKE ENERGY	36003590016 0217	07-FEB-17	\$ 1,420.86
DUKE ENERGY	36003590016 0117	11-JAN-17	\$ 1,463.52
DUKE ENERGY	36003590016 1216	06-DEC-16	\$ 1,518.44
DUKE ENERGY	36003590016 1116	03-NOV-16	\$ 1,516.40
DUKE ENERGY	36003590016 1016	05-OCT-16	\$ 1,652.58
DUKE ENERGY	36003590016 0916	06-SEP-16	\$ 1,653.55
DUKE ENERGY	36003590016 0816	04-AUG-16	\$ 1,604.04
DUKE ENERGY	36003590016 0716	06-JUL-16	\$ 1,573.09
DUKE ENERGY	36003590016 0616	06-JUN-16	\$ 1,494.20
DUKE ENERGY	36003590016 0516	10-MAY-16	\$ 1,370.37
DUKE ENERGY	36003590016 0416	07-APR-16	\$ 1,361.55
DUKE ENERGY	36003590016 0316	07-MAR-16	\$ 1,281.50
DUKE ENERGY	36003590016 0216	08-FEB-16	\$ 1,228.45
DUKE ENERGY	36003590016 0116	07-JAN-16	\$ 1,269.47
DUKE ENERGY	36003590016 1215	07-DEC-15	\$ 1,284.03
DUKE ENERGY	36003590016 1115	04-NOV-15	\$ 1,317.31
DUKE ENERGY	36003590016 1015	06-OCT-15	\$ 1,543.30
DUKE ENERGY	36003590016 0915	04-SEP-15	\$ 1,547.74
DUKE ENERGY	36003590016 0815	06-AUG-15	\$ 1,549.21
DUKE ENERGY	36003590016 0715	08-JUL-15	\$ 1,534.74
DUKE ENERGY	36003590016 0615	08-JUN-15	\$ 1,423.99
DUKE ENERGY	36003590016 0515	11-MAY-15	\$ 1,389.12
DUKE ENERGY	36003590016 0415	08-APR-15	\$ 1,283.69
DUKE ENERGY	36003590016 0315	09-MAR-15	\$ 1,221.50
DUKE ENERGY	36003590016 0215	06-FEB-15	\$ 1,231.24
DUKE ENERGY	36003590016 0115	08-JAN-15	\$ 1,275.38
DUKE ENERGY	36003590016 1214	05-DEC-14	\$ 1,361.49
DUKE ENERGY	36003590016 1114	06-NOV-14	\$ 1,594.52
DUKE ENERGY	36003590016 1014	06-OCT-14	\$ 1,742.33
DUKE ENERGY	36003590016 0914	05-SEP-14	\$ 1,864.45
DUKE ENERGY	36003590016 0814	08-AUG-14	\$ 1,860.30
DUKE ENERGY	36003590016 0714	08-JUL-14	\$ 1,940.34
DUKE ENERGY	36003590016 0614	06-JUN-14	\$ 1,676.98
DUKE ENERGY	36003590016 0514	07-MAY-14	\$ 1,577.23
DUKE ENERGY	36003590016 0414	07-APR-14	\$ 1,375.72
DUKE ENERGY	36003590016 0314	07-MAR-14	\$ 1,199.56
DUKE ENERGY	36003590016 0214	10-FEB-14	\$ 1,483.05
DUKE ENERGY	36003590016 0114	10-JAN-14	\$ 1,513.22
DUKE ENERGY	36003590016 1213	06-DEC-13	\$ 1,379.35
DUKE ENERGY	36003590016 1113	06-NOV-13	\$ 1,553.84
DUKE ENERGY	36003590016 1013	08-OCT-13	\$ 1,646.12

DUKE ENERGY	36003590016 0913	05-SEP-13	\$	1,820.90
DUKE ENERGY	36003590016 0813	06-AUG-13	\$	1,602.43
DUKE ENERGY	36003590016 0713	11-JUL-13	\$	1,781.41
DUKE ENERGY	36003590016 0613	06-JUN-13	\$	1,513.57
DUKE ENERGY	36003590016 0513	09-MAY-13	\$	1,534.08
DUKE ENERGY	36003590016 0413	08-APR-13	\$	1,331.82
DUKE ENERGY	3600359016 0313	07-MAR-13	\$	1,188.22
DUKE ENERGY	36003590016 0213	08-FEB-13	\$	1,314.79
DUKE ENERGY	36003590016 0113	08-JAN-13	\$	1,329.69
DUKE ENERGY	36003590016 1212	05-DEC-12	\$	1,216.12
DUKE ENERGY	36003590016 1112	06-NOV-12	\$	1,250.31
DUKE ENERGY	36003590016 1012	04-OCT-12	\$	1,309.26
DUKE ENERGY	36003590016 0912	07-SEP-12	\$	1,460.72
DUKE ENERGY	36003590016 0812	06-AUG-12	\$	1,419.02
DUKE ENERGY	36003590016 0712	01-JUL-12	\$	1,557.99
DUKE ENERGY	36003590016 0602	02-JUN-12	\$	1,521.29
DUKE ENERGY	36003590016 0412	07-MAY-12	\$	1,420.77
DUKE ENERGY	36003590016 0312	04-APR-12	\$	1,339.53
DUKE ENERGY	36003590016 0212	05-MAR-12	\$	1,178.93
DUKE ENERGY	36003590016 0112	06-FEB-12	\$	1,285.23
DUKE ENERGY	36003590016 1211	05-JAN-12	\$	1,201.33
DUKE ENERGY	36003590016 1111	06-DEC-11	\$	1,287.82
DUKE ENERGY	36003590016 1011	05-OCT-11	\$	1,278.13
DUKE ENERGY	36003590016 0911	06-SEP-11	\$	1,294.55
DUKE ENERGY	36003590016 0811	08-AUG-11	\$	1,361.46
DUKE ENERGY	36003590016 0711	08-JUL-11	\$	1,388.33
DUKE ENERGY	3600-3590-01-6 0411	07-JUN-11	\$	1,381.90
DUKE ENERGY	3600-3590-01-6 0511	06-MAY-11	\$	1,254.45
DUKE ENERGY	360035900160411-3600359	07-APR-11	\$	1,188.68
DUKE ENERGY	360035900160311-3600359	09-MAR-11	\$	1,086.60
DUKE ENERGY	360035900160211-3600359	08-FEB-11	\$	1,107.16
DUKE ENERGY	36003590016011011-3600359	10-JAN-11	\$	1,143.42
DUKE ENERGY	360035900161210-3600359	07-DEC-10	\$	1,055.90

Windstream Billing

\$	180.15
\$	171.59
\$	166.58
\$	144.85
\$	138.77
\$	136.40
\$	140.50
\$	145.77
\$	145.57
\$	158.65
\$	158.74
\$	153.99
\$	151.02
\$	143.44
\$	131.56
\$	130.71
\$	123.02
\$	117.93
\$	121.87
\$	123.27
\$	126.46
\$	148.16
\$	148.58
\$	148.72
\$	147.34
\$	136.70
\$	133.36
\$	123.23
\$	117.26
\$	118.20
\$	122.44
\$	130.70
\$	153.07
\$	167.26
\$	178.99
\$	178.59
\$	186.27
\$	160.99
\$	151.41
\$	132.07
\$	115.16
\$	142.37
\$	145.27
\$	132.42
\$	149.17
\$	158.03

\$	174.81
\$	153.83
\$	171.02
\$	145.30
\$	147.27
\$	127.85
\$	114.07
\$	126.22
\$	127.65
\$	116.75
\$	120.03
\$	125.69
\$	140.23
\$	136.23
\$	149.57
\$	146.04
\$	136.39
\$	128.59
\$	113.18
\$	123.38
\$	115.33
\$	123.63
\$	122.70
\$	124.28
\$	130.70
\$	133.28
\$	132.66
\$	120.43
\$	114.11
\$	104.31
\$	106.29
\$	109.77
\$	101.37

CMN-RUS, Inc.

8837 Bond Street
Overland Park, KS 66214

INVOICE

DATE: Aug 23, 2017
INVOICE # 666

Bill To:

Windstream KDL, LLC
Attn: Shelly Sanchez
11101 Anderson Drive, Ste.100
Little Rock, AR 72212

ITEM DESCRIPTION	AMOUNT
<u>Wolcott Hut:</u> Rack 0101.06: \$500/month/full rack: Service Period: 12/1/2010 – 8/31/2017	\$40,500.00
Windstream Portion of Utility Expense: 4/2012 – 7/2017	\$17,482.03
<u>Marion Hut:</u> Windstream Portion of Utility Expense: 12/2010 – 7/2017	\$11,637.94
<u>Seymour Hut:</u> Windstream Portion of Utility Expense: 12/2010 – 7/2017	\$10,899.56
<u>Evansville Data Center:</u> Windstream Portion of Utility Expense: 12/2010 - 7/2017	\$271,329.17
TOTAL	\$351,848.70

DUE UPON RECEIPT

Make all checks payable to CMN-RUS, Inc.
If you have any questions concerning this invoice, contact Jason White at jason.white@metronetinc.com or 812-213-1165

Vendor Name	Invoice Number	Invoice Date	Invoice Amount	Windstream Portion
CARROLL WHITE REMC	1698700 0717	25-JUL-17	\$ 193.40	\$ 135.38
CARROLL WHITE REMC	1698700 0617	25-JUN-17	\$ 194.76	\$ 136.33
CARROLL WHITE REMC	1698700 0517	25-MAY-17	\$ 219.41	\$ 153.59
CARROLL WHITE REMC	1698700 0417	25-APR-17	\$ 412.47	\$ 288.73
CARROLL WHITE REMC	1698700 0317	25-MAR-17	\$ 390.48	\$ 273.34
CARROLL WHITE REMC	1698700 0217	25-FEB-17	\$ 361.26	\$ 252.88
CARROLL WHITE REMC	1698700 0117	25-JAN-17	\$ 563.08	\$ 394.16
CARROLL WHITE REMC	1698700 1216	25-DEC-16	\$ 324.37	\$ 227.06
CARROLL WHITE REMC	1698700 1116	25-NOV-16	\$ 163.61	\$ 114.53
CARROLL WHITE REMC	1698700 1016	25-OCT-16	\$ 172.88	\$ 121.02
CARROLL WHITE REMC	1698700 0916	25-SEP-16	\$ 210.00	\$ 147.00
CARROLL WHITE REMC	1698700 0816	25-AUG-16	\$ 239.55	\$ 167.69
CARROLL WHITE REMC	1698700 0716	15-JUL-16	\$ 218.03	\$ 152.62
CARROLL WHITE REMC	1698700 0616	25-JUN-16	\$ 286.36	\$ 200.45
CARROLL WHITE REMC	1698700 0516	15-MAY-16	\$ 210.33	\$ 147.23
CARROLL WHITE REMC	1698700 0416	25-APR-16	\$ 404.13	\$ 282.89
CARROLL WHITE REMC	1698700 0316	25-MAR-16	\$ 415.87	\$ 291.11
CARROLL WHITE REMC	1698700 0216	25-FEB-16	\$ 817.46	\$ 572.22
CARROLL WHITE REMC	1698700 0116	25-JAN-16	\$ 633.01	\$ 443.11
CARROLL WHITE REMC	1698700 1215	25-DEC-15	\$ 400.23	\$ 280.16
CARROLL WHITE REMC	1698700 1115	25-NOV-15	\$ 284.21	\$ 198.95
CARROLL WHITE REMC	1698700 1015	25-OCT-15	\$ 384.95	\$ 269.47
CARROLL WHITE REMC	1698700 0915	25-SEP-15	\$ 203.12	\$ 142.18
CARROLL WHITE REMC	1698700 0815	25-AUG-15	\$ 213.49	\$ 149.44
CARROLL WHITE REMC	1698700 0715	25-JUL-15	\$ 193.52	\$ 135.46
CARROLL WHITE REMC	1698700 0615	25-JUN-15	\$ 263.57	\$ 184.50
CARROLL WHITE REMC	1698700 0515	25-MAY-15	\$ 279.14	\$ 195.40
CARROLL WHITE REMC	1698700 0415	25-APR-15	\$ 409.54	\$ 286.68
CARROLL WHITE REMC	1698700 0315	25-MAR-15	\$ 623.20	\$ 436.24
CARROLL WHITE REMC	1698700 0215	25-FEB-15	\$ 723.94	\$ 506.76
CARROLL WHITE REMC	1698700 0115	25-JAN-15	\$ 705.77	\$ 494.04
CARROLL WHITE REMC	1698700 1214	25-DEC-14	\$ 663.19	\$ 464.23
CARROLL WHITE REMC	1698700 1114	25-NOV-14	\$ 347.96	\$ 243.57
CARROLL WHITE REMC	1698700 1014	25-OCT-14	\$ 249.41	\$ 174.59
CARROLL WHITE REMC	1698700 0914	25-SEP-14	\$ 255.32	\$ 178.72
CARROLL WHITE REMC	1698700 0814	25-AUG-14	\$ 189.83	\$ 132.88
CARROLL WHITE REMC	1698700 0714	25-JUL-14	\$ 185.58	\$ 129.91
CARROLL WHITE REMC	1698700 0614	25-JUN-14	\$ 181.22	\$ 126.85
CARROLL WHITE REMC	1698700 0514	25-MAY-14	\$ 213.65	\$ 149.56
CARROLL WHITE REMC	1698700 0414	25-APR-14	\$ 309.09	\$ 216.36
CARROLL WHITE REMC	1698700 0314	25-MAR-14	\$ 352.04	\$ 246.43
CARROLL WHITE REMC	1698700 0214	25-FEB-14	\$ 499.90	\$ 349.93
CARROLL WHITE REMC	1698700 0114	25-JAN-14	\$ 417.18	\$ 292.03
CARROLL WHITE REMC	1698700 1213	25-DEC-13	\$ 500.95	\$ 350.67
CARROLL WHITE REMC	1698700 1113	25-NOV-13	\$ 730.14	\$ 511.10
CARROLL WHITE REMC	1698700 1013	25-OCT-13	\$ 760.35	\$ 532.25

CARROLL WHITE REMC	1698700 0913	25-SEP-13	\$	664.96	\$	465.47
CARROLL WHITE REMC	1698700 0713	25-JUL-13	\$	792.56	\$	554.79
CARROLL WHITE REMC	1698700 0813	25-JUL-13	\$	828.40	\$	579.88
CARROLL WHITE REMC	1698700 0613	25-JUN-13	\$	769.21	\$	538.45
CARROLL WHITE REMC	1698700 0513	25-MAY-13	\$	484.08	\$	338.86
CARROLL WHITE REMC	1698700 0413	25-APR-13	\$	258.51	\$	180.96
CARROLL WHITE REMC	1698700 0313	25-MAR-13	\$	307.59	\$	215.31
CARROLL WHITE REMC	1698700 0213	25-FEB-13	\$	356.93	\$	249.85
CARROLL WHITE REMC	1698700 0113	25-JAN-13	\$	315.12	\$	220.58
CARROLL WHITE REMC	1698700 1212	25-DEC-12	\$	311.28	\$	217.90
CARROLL WHITE REMC	1698700 1112	25-NOV-12	\$	216.74	\$	151.72
CARROLL WHITE REMC	1698700 1012	25-OCT-12	\$	152.91	\$	107.04
CARROLL WHITE REMC	1698700 0912	25-SEP-12	\$	190.86	\$	133.60
CARROLL WHITE REMC	1698700 0812	25-AUG-12	\$	458.73	\$	321.11
CARROLL WHITE REMC	1698700 0712	25-JUL-12	\$	418.32	\$	292.82
CARROLL WHITE REMC	1698700 0612	25-JUN-12	\$	457.17	\$	320.02
CARROLL WHITE REMC	1698700 0512	15-MAY-12	\$	549.00	\$	384.30
CARROLL WHITE REMC	1698700 0412	30-APR-12	\$	471.01	\$	329.71

From: King, Daniel
Sent: Thursday, September 28, 2017 9:45 AM
To: John Campbell <John.Campbell@metronetinc.com>
Subject: FW: Windstream KDL Invoice
Importance: High

John:

Were you able to confirm that the attached documentation was the response that you shared with me was going to be coming concerning the colocation space / power dispute between Windstream and nGenX / MetroNet?

Also, has Kevin had any success in getting a call set up with MetroNet, Windstream and Duke?

I have an internal call at 1:30 to talk about these issues, so any update you could provide me before then will be appreciated.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: King, Daniel
Sent: Friday, September 15, 2017 11:11 AM

To: John Campbell <John.Campbell@metronetinc.com>

Subject: FW: Windstream KDL Invoice

John:

I just wanted to confirm that this was the response that you shared with me was going to be coming concerning the colocation space / power dispute between Windstream and nGenX / MetroNet. The reason why I am asking is because I expected it to come in the form of a net charge (i.e., Windstream said that MetroNet owed \$X, MetroNet says that Windstream owes \$Y, and when the two are netted out against each other the result is \$Z), instead of just coming as a straight invoice. However, maybe you did tell me that it was going to be coming as a straight invoice, and I just didn't remember.

FYI. I will be in Little Rock early next week, so I expect to be able to share with you what our plans are for next steps on resolving this issue sometime next week.

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: Jason White [<mailto:Jason.White@metronetinc.com>]

Sent: Wednesday, August 23, 2017 4:18 PM

To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>

Cc: John Campbell <John.Campbell@metronetinc.com>; Jason Nutter <jason.nutter@metronetinc.com>

Subject: Windstream KDL Invoice

Sherry,

Please see attached invoice and supporting documentation.

Thanks,

Jason White

MetroNet | Margin Assurance Manager

8837 Bond St. | Overland Park, KS 66214

Office: 812.213.1165

www.MetronetInc.com

METRONET.

Vendor Name	Bill Date	Total Invoice Amount	Previously Billed to Windstream
Vectren Energy	7/14/2017	\$ 34,510.13	\$ 266.02
Vectren Energy	6/13/2017	\$ 33,430.76	\$ 252.14
Vectren Energy	5/11/2017	\$ 33,058.77	\$ 223.58
Vectren Energy	4/13/2017	\$ 32,747.71	\$ 255.82
Vectren Energy	3/13/2017	\$ 29,687.79	\$ 221.95
Vectren Energy	2/13/2017	\$ 31,657.19	\$ 255.82
Vectren Energy	1/13/2017	\$ 34,663.44	\$ 230.11
Vectren Energy	12/13/2016	\$ 31,842.05	\$ 263.98
Vectren Energy	11/11/2016	\$ 34,868.85	\$ 265.20
Vectren Energy	10/13/2016	\$ 33,037.70	\$ 259.08
Vectren Energy	9/14/2016	\$ 37,479.38	\$ 274.58
Vectren Energy	8/12/2016	\$ 36,215.05	\$ 267.24
Vectren Energy	7/14/2016	\$ 36,325.33	\$ 258.67
Vectren Energy	6/13/2016	\$ 33,542.07	\$ 249.29
Vectren Energy	5/12/2016	\$ 31,197.79	\$ 242.76
Vectren Energy	4/13/2016	\$ 29,424.85	\$ 239.09
Vectren Energy	3/11/2016	\$ 32,982.27	\$ 225.22
Vectren Energy	2/11/2016	\$ 32,004.63	\$ 254.18
Vectren Energy	1/13/2016	\$ 36,368.71	\$ 247.25
Vectren Energy	12/11/2015	\$ 33,462.08	\$ 241.54
Vectren Energy	11/11/2015	\$ 29,945.15	\$ 257.86
Vectren Energy	10/13/2015	\$ 30,562.52	\$ 252.14
Vectren Energy	9/14/2015	\$ 34,092.81	\$ 281.52
Vectren Energy	8/15/2015	\$ 37,496.49	\$ 269.28
Vectren Energy	7/15/2015	\$ 37,349.93	\$ 276.62
Vectren Energy	6/15/2015	\$ 32,431.82	\$ 251.33
Vectren Energy	5/15/2015	\$ 34,753.79	\$ 255.41
Vectren Energy	4/15/2015	\$ 39,190.63	\$ 229.70
Vectren Energy	3/15/2015	\$ 30,967.72	\$ 264.38
Vectren Energy	2/15/2015	\$ 32,281.25	\$ 254.18
Vectren Energy	1/15/2015	\$ 36,415.73	\$ 248.06
Vectren Energy	12/15/2014	\$ 32,307.88	\$ 261.53
Vectren Energy	11/15/2014	\$ 34,094.05	\$ 216.65
Vectren Energy	10/15/2014	\$ 31,636.07	\$ 275.81
Vectren Energy	9/15/2014	\$ 34,092.81	\$ 281.52
Vectren Energy	8/8/2014	\$ 36,982.08	\$ 259.90
Vectren Energy	7/9/2014	\$ 32,604.11	\$ 248.88
Vectren Energy	6/9/2014	\$ 28,371.31	\$ 249.29
Vectren Energy	5/12/2014	\$ 31,209.40	\$ 240.72
Vectren Energy	4/10/2014	\$ 31,900.04	\$ 248.88
Vectren Energy	3/12/2014	\$ 30,039.96	\$ 224.81
Vectren Energy	2/12/2014	\$ 32,787.87	\$ 247.66
Vectren Energy	1/13/2014	\$ 35,547.70	\$ 250.51
Vectren Energy	12/11/2013	\$ 30,857.03	\$ 248.88
Vectren Energy	11/12/2013	\$ 35,095.25	\$ 259.90
Vectren Energy	10/10/2013	\$ 31,030.59	\$ 259.08

Vectren Energy	9/12/2013	\$	35,133.59	\$	249.29
Vectren Energy	8/12/2013	\$	31,626.26	\$	250.51
Vectren Energy	7/11/2013	\$	32,608.59	\$	255.41
Vectren Energy	6/12/2013	\$	32,631.12	\$	257.04
Vectren Energy	5/10/2013	\$	33,301.62	\$	247.25
Vectren Energy	4/10/2013	\$	30,842.46	\$	253.78
Vectren Energy	3/12/2013	\$	31,030.71	\$	255.41
Vectren Energy	2/12/2013	\$	29,597.32	\$	251.33
Vectren Energy	1/11/2013	\$	32,079.55	\$	253.78
Vectren Energy	12/12/2012	\$	32,590.55	\$	243.58
Vectren Energy	11/9/2012	\$	31,474.42	\$	238.27
Vectren Energy	10/10/2012	\$	29,712.48	\$	238.68
Vectren Energy	9/12/2012	\$	31,861.35	\$	242.76
Vectren Energy	8/13/2012	\$	31,643.06	\$	246.02
Vectren Energy	7/12/2012	\$	32,354.11	\$	247.25
Vectren Energy	6/12/2012	\$	32,967.83	\$	251.45
Vectren Energy	5/10/2012	\$	32,967.83	\$	251.45
Vectren Energy	4/10/2012	\$	32,967.83	\$	251.45
Vectren Energy	3/12/2012	\$	32,967.83	\$	251.45
Vectren Energy	2/12/2012	\$	32,967.83	\$	251.45
Vectren Energy	1/11/2012	\$	32,967.83	\$	251.45
Vectren Energy	12/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	11/9/2011	\$	32,967.83	\$	251.45
Vectren Energy	10/10/2011	\$	32,967.83	\$	251.45
Vectren Energy	9/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	8/13/2011	\$	32,967.83	\$	251.45
Vectren Energy	7/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	6/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	5/10/2011	\$	32,967.83	\$	251.45
Vectren Energy	4/10/2011	\$	32,967.83	\$	251.45
Vectren Energy	3/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	2/12/2011	\$	32,967.83	\$	251.45
Vectren Energy	1/11/2011	\$	32,967.83	\$	251.45
Vectren Energy	12/12/2010	\$	32,967.83	\$	251.45

Actual Windstream Data Center Portion		Revised Windstream Billing	
\$	3,885.51	\$	3,619.50
\$	3,694.17	\$	3,442.03
\$	3,550.55	\$	3,326.97
\$	3,613.39	\$	3,357.57
\$	3,088.21	\$	2,866.25
\$	3,465.66	\$	3,209.84
\$	3,789.18	\$	3,559.06
\$	3,517.19	\$	3,253.21
\$	3,932.50	\$	3,667.30
\$	3,664.05	\$	3,404.97
\$	3,955.41	\$	3,680.83
\$	3,852.34	\$	3,585.10
\$	3,728.01	\$	3,469.34
\$	3,589.54	\$	3,340.25
\$	3,495.58	\$	3,252.82
\$	3,441.78	\$	3,202.69
\$	3,243.73	\$	3,018.51
\$	3,660.76	\$	3,406.58
\$	3,565.10	\$	3,317.86
\$	3,477.73	\$	3,236.19
\$	3,712.54	\$	3,454.68
\$	3,632.63	\$	3,380.49
\$	4,055.28	\$	3,773.76
\$	4,045.49	\$	3,776.21
\$	3,877.80	\$	3,601.17
\$	3,982.66	\$	3,731.33
\$	3,622.51	\$	3,367.10
\$	3,682.35	\$	3,452.65
\$	3,310.18	\$	3,045.79
\$	3,808.71	\$	3,554.52
\$	3,659.34	\$	3,411.28
\$	3,571.56	\$	3,310.03
\$	3,770.23	\$	3,553.58
\$	3,120.93	\$	2,845.12
\$	4,055.28	\$	3,773.76
\$	3,742.64	\$	3,482.74
\$	3,586.28	\$	3,337.40
\$	3,594.34	\$	3,345.05
\$	3,465.71	\$	3,224.99
\$	3,583.94	\$	3,335.06
\$	3,240.47	\$	3,015.67
\$	3,569.06	\$	3,321.41
\$	3,611.43	\$	3,360.92
\$	3,587.29	\$	3,338.41
\$	3,741.98	\$	3,482.09
\$	3,731.44	\$	3,472.36

\$	3,814.37	\$	3,565.09
\$	3,832.96	\$	3,582.45
\$	3,678.66	\$	3,423.26
\$	3,700.99	\$	3,443.95
\$	3,562.02	\$	3,314.78
\$	3,655.46	\$	3,401.68
\$	3,292.56	\$	3,037.15
\$	3,617.68	\$	3,366.36
\$	3,654.46	\$	3,400.68
\$	3,508.91	\$	3,265.34
\$	3,645.59	\$	3,407.32
\$	3,649.78	\$	3,411.10
\$	3,716.54	\$	3,473.78
\$	3,762.76	\$	3,516.73
\$	3,561.66	\$	3,314.42
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
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\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61
\$	3,643.06	\$	3,391.61

Vendor Name	Invoice Number	Invoice Date
INDIANA MICHIGAN POWER COMPANY	04550188108 0717	20-JUL-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0617	21-JUN-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0517	24-MAY-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0417	21-APR-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0317	22-MAR-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0217	21-FEB-17
INDIANA MICHIGAN POWER COMPANY	04550188108 0117	23-JAN-17
INDIANA MICHIGAN POWER COMPANY	04550188108 1216	20-DEC-16
INDIANA MICHIGAN POWER COMPANY	04550188108 1116	17-NOV-16
INDIANA MICHIGAN POWER COMPANY	04550188108 1016	19-OCT-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0916	20-SEP-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0516	21-AUG-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0816	21-AUG-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0716	21-JUL-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0616	21-JUN-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0416	21-APR-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0316	22-MAR-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0216	22-FEB-16
INDIANA MICHIGAN POWER COMPANY	04550188108 0116	22-JAN-16
INDIANA MICHIGAN POWER COMPANY	04550188108 1215	21-DEC-15
INDIANA MICHIGAN POWER COMPANY	04550188108 1115	18-NOV-15
INDIANA MICHIGAN POWER COMPANY	04550188108 1015	20-OCT-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0915	21-SEP-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0815	20-AUG-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0715	22-JUL-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0615	22-JUN-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0515	21-MAY-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0415	22-APR-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0315	23-MAR-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0215	20-FEB-15
INDIANA MICHIGAN POWER COMPANY	04550188108 0115	22-JAN-15
INDIANA MICHIGAN POWER COMPANY	04550188108 1214	19-DEC-14
INDIANA MICHIGAN POWER COMPANY	04550188108 1114	18-NOV-14
INDIANA MICHIGAN POWER COMPANY	04550188108 1014	20-OCT-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0914	19-SEP-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0814	20-AUG-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0714	22-JUL-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0614	20-JUN-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0514	21-MAY-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0414	22-APR-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0314	21-MAR-14
INDIANA MICHIGAN POWER COMPANY	04550188108 0214	20-FEB-14
INDIANA MICHIGAN POWER COMPANY	04550188108 1213	19-DEC-13
INDIANA MICHIGAN POWER COMPANY	04550188108 1113	18-NOV-13
INDIANA MICHIGAN POWER COMPANY	04550188108 1013	18-OCT-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0913	19-SEP-13

INDIANA MICHIGAN POWER COMPANY	04550188108 0813	20-AUG-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0713	24-JUL-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0613	20-JUN-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0513	21-MAY-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0413	22-APR-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0313	21-MAR-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0213	20-FEB-13
INDIANA MICHIGAN POWER COMPANY	04550188108 0113	22-JAN-13
INDIANA MICHIGAN POWER COMPANY	04550188108 1212	19-DEC-12
INDIANA MICHIGAN POWER COMPANY	04550188108 1112	16-NOV-12
INDIANA MICHIGAN POWER COMPANY	04550188108 1012	22-OCT-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0912	21-SEP-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0812	23-AUG-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0712	26-JUL-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0512	23-MAY-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0412	24-APR-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0312	21-MAR-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0212	21-FEB-12
INDIANA MICHIGAN POWER COMPANY	04550188108 0112	23-JAN-12
INDIANA MICHIGAN POWER COMPANY	04550188108 1211	20-DEC-11
INDIANA MICHIGAN POWER COMPANY	04550188108 1111	17-NOV-11
INDIANA MICHIGAN POWER COMPANY	04550188108	21-OCT-11
INDIANA MICHIGAN POWER COMPANY	04550188108 0911	21-SEP-11
INDIANA MICHIGAN POWER COMPANY	04550188108 0811	24-AUG-11
INDIANA MICHIGAN POWER COMPANY	04550188108 0711	21-JUL-11
INDIANA MICHIGAN POWER COMPANY	045501881080211-0455018	23-FEB-11
INDIANA MICHIGAN POWER COMPANY	045501881080111-0455018	27-JAN-11
INDIANA MICHIGAN POWER COMPANY	045501881081210-0455018	29-DEC-10

Invoice Amount	Windstream Billing
\$ 280.14	\$ 196.10
\$ 282.97	\$ 198.08
\$ 249.01	\$ 174.31
\$ 237.17	\$ 166.02
\$ 237.79	\$ 166.45
\$ 207.16	\$ 145.01
\$ 269.51	\$ 188.66
\$ 261.68	\$ 183.18
\$ 145.86	\$ 102.10
\$ 157.31	\$ 110.12
\$ 187.20	\$ 131.04
\$ 175.74	\$ 123.02
\$ 182.71	\$ 127.90
\$ 191.33	\$ 133.93
\$ 171.53	\$ 120.07
\$ 179.49	\$ 125.64
\$ 174.17	\$ 121.92
\$ 235.64	\$ 164.95
\$ 245.83	\$ 172.08
\$ 193.44	\$ 135.41
\$ 130.60	\$ 91.42
\$ 141.07	\$ 98.75
\$ 150.94	\$ 105.66
\$ 156.61	\$ 109.63
\$ 193.18	\$ 135.23
\$ 170.87	\$ 119.61
\$ 139.10	\$ 97.37
\$ 162.80	\$ 113.96
\$ 212.59	\$ 148.81
\$ 265.41	\$ 185.79
\$ 280.83	\$ 196.58
\$ 212.38	\$ 148.67
\$ 146.48	\$ 102.54
\$ 128.57	\$ 90.00
\$ 134.06	\$ 93.84
\$ 135.09	\$ 94.56
\$ 144.64	\$ 101.25
\$ 133.69	\$ 93.58
\$ 118.15	\$ 82.71
\$ 149.85	\$ 104.90
\$ 326.17	\$ 228.32
\$ 491.41	\$ 343.99
\$ 252.26	\$ 176.58
\$ 159.88	\$ 111.92
\$ 142.23	\$ 99.56
\$ 154.06	\$ 107.84

\$	160.09	\$	112.06
\$	162.01	\$	113.41
\$	346.30	\$	242.41
\$	385.36	\$	269.75
\$	264.62	\$	185.23
\$	246.06	\$	172.24
\$	411.64	\$	288.15
\$	290.83	\$	203.58
\$	181.87	\$	127.31
\$	187.40	\$	131.18
\$	223.97	\$	156.78
\$	374.58	\$	262.21
\$	514.58	\$	360.21
\$	176.16	\$	123.31
\$	304.42	\$	213.09
\$	224.24	\$	156.97
\$	231.33	\$	161.93
\$	211.78	\$	148.25
\$	244.54	\$	171.18
\$	188.04	\$	131.63
\$	124.99	\$	87.49
\$	116.65	\$	81.66
\$	103.87	\$	72.71
\$	120.48	\$	84.34
\$	174.63	\$	122.24
\$	508.05	\$	355.64
\$	865.85	\$	606.10
\$	182.69	\$	127.88

Vendor Name	Invoice Number	Invoice Date	Total Invoice Amount
DUKE ENERGY	36003590016 0717	11-JUL-17	\$ 1,876.53
DUKE ENERGY	36003590016 0617	09-JUN-17	\$ 1,787.42
DUKE ENERGY	36003590016 0517	10-MAY-17	\$ 1,735.26
DUKE ENERGY	36003590016 0417	08-APR-17	\$ 1,508.83
DUKE ENERGY	36003590016 0317	08-MAR-17	\$ 1,445.47
DUKE ENERGY	36003590016 0217	07-FEB-17	\$ 1,420.86
DUKE ENERGY	36003590016 0117	11-JAN-17	\$ 1,463.52
DUKE ENERGY	36003590016 1216	06-DEC-16	\$ 1,518.44
DUKE ENERGY	36003590016 1116	03-NOV-16	\$ 1,516.40
DUKE ENERGY	36003590016 1016	05-OCT-16	\$ 1,652.58
DUKE ENERGY	36003590016 0916	06-SEP-16	\$ 1,653.55
DUKE ENERGY	36003590016 0816	04-AUG-16	\$ 1,604.04
DUKE ENERGY	36003590016 0716	06-JUL-16	\$ 1,573.09
DUKE ENERGY	36003590016 0616	06-JUN-16	\$ 1,494.20
DUKE ENERGY	36003590016 0516	10-MAY-16	\$ 1,370.37
DUKE ENERGY	36003590016 0416	07-APR-16	\$ 1,361.55
DUKE ENERGY	36003590016 0316	07-MAR-16	\$ 1,281.50
DUKE ENERGY	36003590016 0216	08-FEB-16	\$ 1,228.45
DUKE ENERGY	36003590016 0116	07-JAN-16	\$ 1,269.47
DUKE ENERGY	36003590016 1215	07-DEC-15	\$ 1,284.03
DUKE ENERGY	36003590016 1115	04-NOV-15	\$ 1,317.31
DUKE ENERGY	36003590016 1015	06-OCT-15	\$ 1,543.30
DUKE ENERGY	36003590016 0915	04-SEP-15	\$ 1,547.74
DUKE ENERGY	36003590016 0815	06-AUG-15	\$ 1,549.21
DUKE ENERGY	36003590016 0715	08-JUL-15	\$ 1,534.74
DUKE ENERGY	36003590016 0615	08-JUN-15	\$ 1,423.99
DUKE ENERGY	36003590016 0515	11-MAY-15	\$ 1,389.12
DUKE ENERGY	36003590016 0415	08-APR-15	\$ 1,283.69
DUKE ENERGY	36003590016 0315	09-MAR-15	\$ 1,221.50
DUKE ENERGY	36003590016 0215	06-FEB-15	\$ 1,231.24
DUKE ENERGY	36003590016 0115	08-JAN-15	\$ 1,275.38
DUKE ENERGY	36003590016 1214	05-DEC-14	\$ 1,361.49
DUKE ENERGY	36003590016 1114	06-NOV-14	\$ 1,594.52
DUKE ENERGY	36003590016 1014	06-OCT-14	\$ 1,742.33
DUKE ENERGY	36003590016 0914	05-SEP-14	\$ 1,864.45
DUKE ENERGY	36003590016 0814	08-AUG-14	\$ 1,860.30
DUKE ENERGY	36003590016 0714	08-JUL-14	\$ 1,940.34
DUKE ENERGY	36003590016 0614	06-JUN-14	\$ 1,676.98
DUKE ENERGY	36003590016 0514	07-MAY-14	\$ 1,577.23
DUKE ENERGY	36003590016 0414	07-APR-14	\$ 1,375.72
DUKE ENERGY	36003590016 0314	07-MAR-14	\$ 1,199.56
DUKE ENERGY	36003590016 0214	10-FEB-14	\$ 1,483.05
DUKE ENERGY	36003590016 0114	10-JAN-14	\$ 1,513.22
DUKE ENERGY	36003590016 1213	06-DEC-13	\$ 1,379.35
DUKE ENERGY	36003590016 1113	06-NOV-13	\$ 1,553.84
DUKE ENERGY	36003590016 1013	08-OCT-13	\$ 1,646.12

DUKE ENERGY	36003590016 0913	05-SEP-13	\$	1,820.90
DUKE ENERGY	36003590016 0813	06-AUG-13	\$	1,602.43
DUKE ENERGY	36003590016 0713	11-JUL-13	\$	1,781.41
DUKE ENERGY	36003590016 0613	06-JUN-13	\$	1,513.57
DUKE ENERGY	36003590016 0513	09-MAY-13	\$	1,534.08
DUKE ENERGY	36003590016 0413	08-APR-13	\$	1,331.82
DUKE ENERGY	3600359016 0313	07-MAR-13	\$	1,188.22
DUKE ENERGY	36003590016 0213	08-FEB-13	\$	1,314.79
DUKE ENERGY	36003590016 0113	08-JAN-13	\$	1,329.69
DUKE ENERGY	36003590016 1212	05-DEC-12	\$	1,216.12
DUKE ENERGY	36003590016 1112	06-NOV-12	\$	1,250.31
DUKE ENERGY	36003590016 1012	04-OCT-12	\$	1,309.26
DUKE ENERGY	36003590016 0912	07-SEP-12	\$	1,460.72
DUKE ENERGY	36003590016 0812	06-AUG-12	\$	1,419.02
DUKE ENERGY	36003590016 0712	01-JUL-12	\$	1,557.99
DUKE ENERGY	36003590016 0602	02-JUN-12	\$	1,521.29
DUKE ENERGY	36003590016 0412	07-MAY-12	\$	1,420.77
DUKE ENERGY	36003590016 0312	04-APR-12	\$	1,339.53
DUKE ENERGY	36003590016 0212	05-MAR-12	\$	1,178.93
DUKE ENERGY	36003590016 0112	06-FEB-12	\$	1,285.23
DUKE ENERGY	36003590016 1211	05-JAN-12	\$	1,201.33
DUKE ENERGY	36003590016 1111	06-DEC-11	\$	1,287.82
DUKE ENERGY	36003590016 1011	05-OCT-11	\$	1,278.13
DUKE ENERGY	36003590016 0911	06-SEP-11	\$	1,294.55
DUKE ENERGY	36003590016 0811	08-AUG-11	\$	1,361.46
DUKE ENERGY	36003590016 0711	08-JUL-11	\$	1,388.33
DUKE ENERGY	3600-3590-01-6 0411	07-JUN-11	\$	1,381.90
DUKE ENERGY	3600-3590-01-6 0511	06-MAY-11	\$	1,254.45
DUKE ENERGY	360035900160411-3600359	07-APR-11	\$	1,188.68
DUKE ENERGY	360035900160311-3600359	09-MAR-11	\$	1,086.60
DUKE ENERGY	360035900160211-3600359	08-FEB-11	\$	1,107.16
DUKE ENERGY	36003590016011011-3600359	10-JAN-11	\$	1,143.42
DUKE ENERGY	360035900161210-3600359	07-DEC-10	\$	1,055.90

Windstream Billing

\$	180.15
\$	171.59
\$	166.58
\$	144.85
\$	138.77
\$	136.40
\$	140.50
\$	145.77
\$	145.57
\$	158.65
\$	158.74
\$	153.99
\$	151.02
\$	143.44
\$	131.56
\$	130.71
\$	123.02
\$	117.93
\$	121.87
\$	123.27
\$	126.46
\$	148.16
\$	148.58
\$	148.72
\$	147.34
\$	136.70
\$	133.36
\$	123.23
\$	117.26
\$	118.20
\$	122.44
\$	130.70
\$	153.07
\$	167.26
\$	178.99
\$	178.59
\$	186.27
\$	160.99
\$	151.41
\$	132.07
\$	115.16
\$	142.37
\$	145.27
\$	132.42
\$	149.17
\$	158.03

\$	174.81
\$	153.83
\$	171.02
\$	145.30
\$	147.27
\$	127.85
\$	114.07
\$	126.22
\$	127.65
\$	116.75
\$	120.03
\$	125.69
\$	140.23
\$	136.23
\$	149.57
\$	146.04
\$	136.39
\$	128.59
\$	113.18
\$	123.38
\$	115.33
\$	123.63
\$	122.70
\$	124.28
\$	130.70
\$	133.28
\$	132.66
\$	120.43
\$	114.11
\$	104.31
\$	106.29
\$	109.77
\$	101.37

CMN-RUS, Inc.

8837 Bond Street
Overland Park, KS 66214

INVOICE

DATE: Aug 23, 2017
INVOICE # 666

Bill To:

Windstream KDL, LLC
Attn: Shelly Sanchez
11101 Anderson Drive, Ste.100
Little Rock, AR 72212

ITEM DESCRIPTION	AMOUNT
<u>Wolcott Hut:</u> Rack 0101.06: \$500/month/full rack: Service Period: 12/1/2010 – 8/31/2017	\$40,500.00
Windstream Portion of Utility Expense: 4/2012 – 7/2017	\$17,482.03
<u>Marion Hut:</u> Windstream Portion of Utility Expense: 12/2010 – 7/2017	\$11,637.94
<u>Seymour Hut:</u> Windstream Portion of Utility Expense: 12/2010 – 7/2017	\$10,899.56
<u>Evansville Data Center:</u> Windstream Portion of Utility Expense: 12/2010 - 7/2017	\$271,329.17
TOTAL	\$351,848.70

DUE UPON RECEIPT

Make all checks payable to CMN-RUS, Inc.
If you have any questions concerning this invoice, contact Jason White at jason.white@metronetinc.com or 812-213-1165

Vendor Name	Invoice Number	Invoice Date	Invoice Amount	Windstream Portion
CARROLL WHITE REMC	1698700 0717	25-JUL-17	\$ 193.40	\$ 135.38
CARROLL WHITE REMC	1698700 0617	25-JUN-17	\$ 194.76	\$ 136.33
CARROLL WHITE REMC	1698700 0517	25-MAY-17	\$ 219.41	\$ 153.59
CARROLL WHITE REMC	1698700 0417	25-APR-17	\$ 412.47	\$ 288.73
CARROLL WHITE REMC	1698700 0317	25-MAR-17	\$ 390.48	\$ 273.34
CARROLL WHITE REMC	1698700 0217	25-FEB-17	\$ 361.26	\$ 252.88
CARROLL WHITE REMC	1698700 0117	25-JAN-17	\$ 563.08	\$ 394.16
CARROLL WHITE REMC	1698700 1216	25-DEC-16	\$ 324.37	\$ 227.06
CARROLL WHITE REMC	1698700 1116	25-NOV-16	\$ 163.61	\$ 114.53
CARROLL WHITE REMC	1698700 1016	25-OCT-16	\$ 172.88	\$ 121.02
CARROLL WHITE REMC	1698700 0916	25-SEP-16	\$ 210.00	\$ 147.00
CARROLL WHITE REMC	1698700 0816	25-AUG-16	\$ 239.55	\$ 167.69
CARROLL WHITE REMC	1698700 0716	15-JUL-16	\$ 218.03	\$ 152.62
CARROLL WHITE REMC	1698700 0616	25-JUN-16	\$ 286.36	\$ 200.45
CARROLL WHITE REMC	1698700 0516	15-MAY-16	\$ 210.33	\$ 147.23
CARROLL WHITE REMC	1698700 0416	25-APR-16	\$ 404.13	\$ 282.89
CARROLL WHITE REMC	1698700 0316	25-MAR-16	\$ 415.87	\$ 291.11
CARROLL WHITE REMC	1698700 0216	25-FEB-16	\$ 817.46	\$ 572.22
CARROLL WHITE REMC	1698700 0116	25-JAN-16	\$ 633.01	\$ 443.11
CARROLL WHITE REMC	1698700 1215	25-DEC-15	\$ 400.23	\$ 280.16
CARROLL WHITE REMC	1698700 1115	25-NOV-15	\$ 284.21	\$ 198.95
CARROLL WHITE REMC	1698700 1015	25-OCT-15	\$ 384.95	\$ 269.47
CARROLL WHITE REMC	1698700 0915	25-SEP-15	\$ 203.12	\$ 142.18
CARROLL WHITE REMC	1698700 0815	25-AUG-15	\$ 213.49	\$ 149.44
CARROLL WHITE REMC	1698700 0715	25-JUL-15	\$ 193.52	\$ 135.46
CARROLL WHITE REMC	1698700 0615	25-JUN-15	\$ 263.57	\$ 184.50
CARROLL WHITE REMC	1698700 0515	25-MAY-15	\$ 279.14	\$ 195.40
CARROLL WHITE REMC	1698700 0415	25-APR-15	\$ 409.54	\$ 286.68
CARROLL WHITE REMC	1698700 0315	25-MAR-15	\$ 623.20	\$ 436.24
CARROLL WHITE REMC	1698700 0215	25-FEB-15	\$ 723.94	\$ 506.76
CARROLL WHITE REMC	1698700 0115	25-JAN-15	\$ 705.77	\$ 494.04
CARROLL WHITE REMC	1698700 1214	25-DEC-14	\$ 663.19	\$ 464.23
CARROLL WHITE REMC	1698700 1114	25-NOV-14	\$ 347.96	\$ 243.57
CARROLL WHITE REMC	1698700 1014	25-OCT-14	\$ 249.41	\$ 174.59
CARROLL WHITE REMC	1698700 0914	25-SEP-14	\$ 255.32	\$ 178.72
CARROLL WHITE REMC	1698700 0814	25-AUG-14	\$ 189.83	\$ 132.88
CARROLL WHITE REMC	1698700 0714	25-JUL-14	\$ 185.58	\$ 129.91
CARROLL WHITE REMC	1698700 0614	25-JUN-14	\$ 181.22	\$ 126.85
CARROLL WHITE REMC	1698700 0514	25-MAY-14	\$ 213.65	\$ 149.56
CARROLL WHITE REMC	1698700 0414	25-APR-14	\$ 309.09	\$ 216.36
CARROLL WHITE REMC	1698700 0314	25-MAR-14	\$ 352.04	\$ 246.43
CARROLL WHITE REMC	1698700 0214	25-FEB-14	\$ 499.90	\$ 349.93
CARROLL WHITE REMC	1698700 0114	25-JAN-14	\$ 417.18	\$ 292.03
CARROLL WHITE REMC	1698700 1213	25-DEC-13	\$ 500.95	\$ 350.67
CARROLL WHITE REMC	1698700 1113	25-NOV-13	\$ 730.14	\$ 511.10
CARROLL WHITE REMC	1698700 1013	25-OCT-13	\$ 760.35	\$ 532.25

CARROLL WHITE REMC	1698700 0913	25-SEP-13	\$	664.96	\$	465.47
CARROLL WHITE REMC	1698700 0713	25-JUL-13	\$	792.56	\$	554.79
CARROLL WHITE REMC	1698700 0813	25-JUL-13	\$	828.40	\$	579.88
CARROLL WHITE REMC	1698700 0613	25-JUN-13	\$	769.21	\$	538.45
CARROLL WHITE REMC	1698700 0513	25-MAY-13	\$	484.08	\$	338.86
CARROLL WHITE REMC	1698700 0413	25-APR-13	\$	258.51	\$	180.96
CARROLL WHITE REMC	1698700 0313	25-MAR-13	\$	307.59	\$	215.31
CARROLL WHITE REMC	1698700 0213	25-FEB-13	\$	356.93	\$	249.85
CARROLL WHITE REMC	1698700 0113	25-JAN-13	\$	315.12	\$	220.58
CARROLL WHITE REMC	1698700 1212	25-DEC-12	\$	311.28	\$	217.90
CARROLL WHITE REMC	1698700 1112	25-NOV-12	\$	216.74	\$	151.72
CARROLL WHITE REMC	1698700 1012	25-OCT-12	\$	152.91	\$	107.04
CARROLL WHITE REMC	1698700 0912	25-SEP-12	\$	190.86	\$	133.60
CARROLL WHITE REMC	1698700 0812	25-AUG-12	\$	458.73	\$	321.11
CARROLL WHITE REMC	1698700 0712	25-JUL-12	\$	418.32	\$	292.82
CARROLL WHITE REMC	1698700 0612	25-JUN-12	\$	457.17	\$	320.02
CARROLL WHITE REMC	1698700 0512	15-MAY-12	\$	549.00	\$	384.30
CARROLL WHITE REMC	1698700 0412	30-APR-12	\$	471.01	\$	329.71

From: John Campbell <John.Campbell@metronetinc.com>

Sent: Thursday, December 14, 2017 4:33 PM

To: King, Daniel <Daniel.King@windstream.com>

Subject: Re: Windstream KDL Unpaid Make Ready

Dan

I apologize I'm traveling and just picked up your message. I talked to Kevin and he's going to try to get something scheduled soon. Duke has been radio silent recently on other requests to meet.

Sent from my iPhone

On Dec 14, 2017, at 12:06 PM, King, Daniel <Daniel.King@windstream.com> wrote:

John:

Is there any update that I can share internally? I have a call scheduled at 1:30 today, and I expect that I will be asked about this.

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: John Campbell [<mailto:John.Campbell@metronetinc.com>]

Sent: Wednesday, December 06, 2017 3:24 PM

To: King, Daniel <Daniel.King@windstream.com>; Anita Larson <Anita.Larson@metronetinc.com>

Subject: RE: Windstream KDL Unpaid Make Ready

Dan –

I will get with Kevin as soon as possible to discuss next steps. Thank you

John Campbell

Executive Vice President and General Counsel
8837 Bond St. | Overland Park, KS 66214
Office: 812-213-1085
Cell: 913-375-5979

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From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, December 6, 2017 2:06 PM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: RE: Windstream KDL Unpaid Make Ready
Importance: High

John and Anita:

I wanted to follow up with the two of you on the outstanding make ready invoice from Duke Energy. As Kevin requested, we asked Duke to reverse the make-ready invoices and bill them directly to MetroNet. Duke refused to do so, and we still have the outstanding balance on our books. Although we have not received any pressure from Duke concerning the outstanding invoice, we are continuing to get internal pressure to get this invoice off of our books.

Kevin agreed that if Duke would not agree to reverse the changes and bill MetroNet directly that the next step was for MetroNet to reach out to Duke to set up a three way call among the parties to discuss the matter. Do you think that is something MetroNet could get set up to take place next week?

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: King, Daniel
Sent: Tuesday, September 05, 2017 9:24 AM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: FW: Windstream KDL Unpaid Make Ready
Importance: High

John:

As Kevin requested, we asked Duke to reverse the make-ready invoices and bill them directly to MetroNet. Please see the response we received from Duke below.

I believe that Kevin agreed that if Duke would not agree to reverse the changes and bill MetroNet directly that the next step was for MetroNet to reach out to Duke to set up a three way call

among the parties to discuss the matter. We would appreciate it if MetroNet could get this call set up with Duke as quickly as possible.

Thanks.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Tuesday, September 05, 2017 9:05 AM
To: Lloyd, James <James.Lloyd@windstream.com>; Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Cc: Latham, Joyce <Joyce.Latham@windstream.com>; King, Daniel <Daniel.King@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: RE: Windstream KDL Unpaid Make Ready

James,

Thank you for your response back. Duke Energy will not reverse the invoices to Windstream KDL as per section 9 of the agreement 'KDL shall reimburse the applicable Operating Company for the cost of all such work'. Windstream KDL submitted the routes and is therefore responsible for all make ready and engineering cost associated with the projects. Any invoices to Windstream KDL should be paid upon receipt and not held up due to a side agreement between Windstream KDL and Metronet.

Thank you,
Jeremy
Jeremy Gibson
Sr. Joint Use Facilities Specialist
859-816-7386 Cell
Jeremy.gibson@duke-energy.com

From: Lloyd, James [<mailto:James.Lloyd@windstream.com>]
Sent: Tuesday, September 05, 2017 9:38 AM
To: Gibson, Jeremy B
Cc: Latham, Joyce; King, Daniel; Rucker, Jamie
Subject: RE: Windstream KDL Unpaid Make Ready

***** Exercise caution. This is an EXTERNAL email. DO**

NOT open attachments or click links from unknown senders or unexpected email. ***

Jeremy,

In regards to your email below, and as we have shared before, we dispute the amounts being billed to us by Duke Energy. Since we are disputing these amounts, and since these invoices are for work that MetroNet will ultimately be responsible for paying, we would like for Duke Energy to consider reversing the invoices to Windstream and billing the amounts directly to MetroNet.

If this is not possible, please let us know as soon as possible.

Sincerely,

James Lloyd
Manager – Engineering Support
Windstream Communications, LLC
11101 Anderson Drive
Little Rock, Arkansas 72212
(501) 748-7538
Email: James.Lloyd@windstream.com

<image001.png>

From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Monday, August 21, 2017 10:01 AM
To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; Mcclure, Joseph W <Joseph.W.Mcclure@windstream.com>; Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Subject: Windstream KDL Unpaid Make Ready
Importance: High

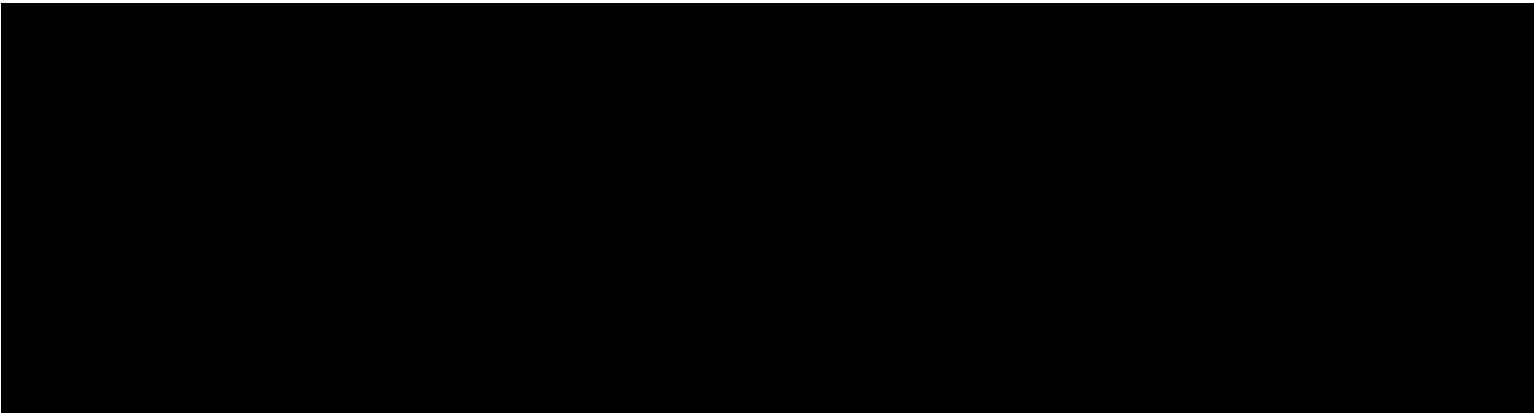
Sherry and Joe,

I wanted to follow up with you to see where Windstream KDL was on paying the unpaid make ready true up invoices from the Lafayette and Hanover routes. These invoices are still outstanding at this time. Last communication was back in March and we have not heard anything back in regards to these.

Please let me know when Duke can expect payment on these.

Thank you,
Jeremy
Jeremy Gibson
Sr. Joint Use Facilities Specialist
859-816-7386 Cell
Jeremy.gibson@duke-energy.com

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From: Gibson, Jeremy B <Jeremy.Gibson@duke-energy.com>
Sent: Tuesday, September 05, 2017 9:05 AM
To: Lloyd, James <James.Lloyd@windstream.com>; Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Cc: Latham, Joyce <Joyce.Latham@windstream.com>; King, Daniel <Daniel.King@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: RE: Windstream KDL Unpaid Make Ready

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Jeremy Gibson
Sr. Joint Use Facilities Specialist
859-816-7386 Cell
Jeremy.gibson@duke-energy.com

From: Lloyd, James [<mailto:James.Lloyd@windstream.com>]
Sent: Tuesday, September 05, 2017 9:38 AM
To: Gibson, Jeremy B
Cc: Latham, Joyce; King, Daniel; Rucker, Jamie
Subject: RE: Windstream KDL Unpaid Make Ready

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If this is not possible, please let us know as soon as possible.

Sincerely,

James Lloyd
Manager – Engineering Support
Windstream Communications, LLC
11101 Anderson Drive
Little Rock, Arkansas 72212
(501) 748-7538
Email: James.Lloyd@windstream.com



From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Monday, August 21, 2017 10:01 AM
To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; McClure, Joseph W <Joseph.W.Mcclure@windstream.com>; Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Subject: Windstream KDL Unpaid Make Ready
Importance: High

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Thank you,
Jeremy
Jeremy Gibson
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Jeremy.gibson@duke-energy.com

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From: Lloyd, James
Sent: Tuesday, September 05, 2017 8:38 AM
To: Gibson, Jeremy B <Jeremy.Gibson@duke-energy.com>
Cc: Latham, Joyce <Joyce.Latham@windstream.com>; King, Daniel <Daniel.King@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: RE: Windstream KDL Unpaid Make Ready

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James Lloyd
Manager – Engineering Support
Windstream Communications, LLC
11101 Anderson Drive
Little Rock, Arkansas 72212
(501) 748-7538
Email: James.Lloyd@windstream.com



From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Monday, August 21, 2017 10:01 AM
To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; McClure, Joseph W <Joseph.W.Mcclure@windstream.com>; Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Subject: Windstream KDL Unpaid Make Ready
Importance: High

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Thank you,

Jeremy

Jeremy Gibson

Sr. Joint Use Facilities Specialist

859-816-7386 Cell

Jeremy.gibson@duke-energy.com



From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]

Sent: Monday, August 21, 2017 10:01 AM

To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; McClure, Joseph W <Joseph.W.Mcclure@windstream.com>; Windstream Jointuse <Windstream.Jointuse@windstream.com>

Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>

Subject: Windstream KDL Unpaid Make Ready

Importance: High

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Please let me know when Duke can expect payment on these.

Thank you,

Jeremy

Jeremy Gibson

Sr. Joint Use Facilities Specialist

859-816-7386 Cell

Jeremy.gibson@duke-energy.com



November 17, 2016

Windstream Communications (KDL)
Poles
P. O. Box 25410
Little Rock, AR 72221

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Hanover job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Hanover Part 1	\$69,461.86	\$21,441.00	P1160706101	\$48,020.86
Hanover Path 2	\$21,214.98	\$18,804.00	P1160717901	\$2,410.98
Hanover Group 2	\$17,386.85	\$14,634.00	P1160786501	\$2,752.85
Hanover Group 3	\$47,188.83	\$41,336.00	P1160795501	\$5,852.83
			PAY THIS AMOUNT	\$59,037.52

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh

WIN4010



INVOICE

Invoice: P1160706101
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$48,020.86

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PART 1	\$48,020.86
Amount Due:			\$48,020.86

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160706101

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

00083509

Total Amount Due:

\$48,020.86

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4011

1616313136303730363130310000800048020860



INVOICE

Invoice: P1160717901
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$2,410.98

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PATH 2	\$2,410.98
Amount Due:			\$2,410.98

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160717901

Corporation Code: 75115
 Please Pay By: 12/15/2016
 Customer ID: 00083509
 Total Amount Due: **\$2,410.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



16163131363037313739303100001000024109&2



INVOICE

Invoice: P1160786501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Customer ID: 000107473
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$2,752.85

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 2	\$2,752.85
Amount Due:			\$2,752.85

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160786501

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

000107473

Total Amount Due:

\$2,752.85

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Amount Enclosed



WIN4013

1616313136303738363530310000900002752859



INVOICE

Invoice: P1160795501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$5,852.83

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 3	\$5,852.83
Amount Due:			\$5,852.83

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160795501

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

00083509

Total Amount Due:

\$5,852.83

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4014

161631313630373935330310000200005852838



November 30, 2016

Windstream Communications
 Attn: Poles
 P. O. Box 25410
 Little Rock, AR 72221

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Lafayette job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project. Listed are refunds that were subtracted from the invoices. Also listed is a credit for a payment of \$134,738.00 that we received for the Connersville Phase 1 – 5 job that Windstream was invoiced for and the invoice was paid, but the job was cancelled.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Lafayette Part 3 & 4	\$104,246.63	\$82,870.00	P1160888601	\$21,376.63
Lafayette Phase 10 Part 1 & 2	\$267,771.29	\$253,163.10	P1160901201	\$14,608.19
Lafayette Phase 12	\$46,565.35	\$32,747.00	P1160909801	\$13,818.35
Lafayette Phase 4 Part 1 Rev	\$78,485.71	\$77,519.00	P1160964901	\$966.71
Lafayette Phase 8 Part 1	\$171,895.20	\$33,690.00	P1160969801	\$138,205.20
Lafayette Phase 3 Part 2	\$202,950.21	\$70,078.00	P1160979101	\$132,872.21
Lafayette Phase 2 Part 3	\$38,382.91	\$27,934.59	P1160985601	\$10,448.32
Lafayette Backbone Part 5	\$10,172.98	\$7,087.00	P1160990501	\$3,085.98
Lafayette Group 1	\$66,790.99	\$13,888.00	P1160998201	\$52,902.99
Lafayette Group 3	\$84,548.09	\$54,957.00	P1161009701	\$29,591.09
Lafayette Group 4	\$172,813.28	\$86,207.00	P1161020301	\$86,606.28
Lafayette Group 2	\$88,404.72	\$38,024.00	P1161073501	\$50,380.72
Lafayette Group 5	\$120,769.73	\$50,000.00	P1161082901	\$70,769.73
Lafayette Group 7	\$101,640.70	\$52,749.00	P1161096501	\$48,891.70
Lafayette Group 6	\$142,067.80	\$86,777.00	P1161104301	\$55,290.80
Lafayette Group 8	\$88,226.97	\$49,477.00	P1161130301	\$38,749.97
Lafayette Group 11	\$57,016.01	\$35,202.00	P1161140101	\$21,814.01
Lafayette Group 12	\$66,188.16	\$65,561.00	P1161174301	\$627.16
Lafayette Group 14	\$138,172.30	\$122,241.00	P1161262401	\$15,931.30
Lafayette Phase 2 Part 1 & 2	\$476,012.26	\$284,895.70	P1161272701	\$191,116.56
Lafayette Phase 7 Part 1 & 2	\$307,343.72	\$241,896.00	P1161300201	\$65,447.72
Lafayette Phase 11 Part 1 - 4	\$310,616.33	\$297,817.00	P1161311201	\$12,799.33
Lafayette Phase 6 Part 1	\$45,018.03	\$47,761.00		\$2,742.97

WIN4015

Lafayette Phase 5 Part 1 Rev 3	\$146,147.34	\$149,439.00		-\$3,291.66
Lafayette Phase 3 Part 1	\$108,419.10	\$117,183.00		-\$8,763.90
Lafayette Phase 1	\$83,970.94	\$99,283.00		-\$15,312.06
Connersville Phase 1-5 JOB CANCELLED - INVOICE PAID BY WINDSTREAM	-\$134,738.00			-\$134,738.00
			PAY THIS AMOUNT	\$911,452.36

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh



INVOICE

Invoice: P1160888601
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$21,376.63

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PART 3 & 4	\$21,376.63
Amount Due:			\$21,376.63

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160888601

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$21,376.63**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303838383630310000000021376639



INVOICE

Invoice: P1160901201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$14,608.19

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 10 PART 1 & 2	\$14,608.19
Amount Due:			\$14,608.19

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160901201

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$14,608.19**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930313230310000400014608192



INVOICE

Invoice: P1160909801
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$13,818.35

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 12	\$13,818.35
Amount Due:			\$13,818.35

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160909801

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$13,818.35**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930393830310000900013818355



INVOICE

Invoice: P1160964901
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$966.71

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 4 PART 1 REV	\$966.71
Amount Due:			\$966.71

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160964901

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$966.71**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936343930310000100000966711



INVOICE

Invoice: P1160969801
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107039
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$138,205.20

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 8 PART 1	\$138,205.20
Amount Due:			\$138,205.20

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160969801

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 000107039

Total Amount Due: **\$138,205.20**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936393830310000800138205207



INVOICE

Invoice: P1160979101
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$132,872.21

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 3 PART 2	\$132,872.21
Amount Due:			<u>\$132,872.21</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160979101

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$132,872.21**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303937393130310000100132872210



INVOICE

Invoice: P1160985601
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$10,448.32**

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 3	\$10,448.32
Amount Due:			\$10,448.32

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160985601

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$10,448.32**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303938353630310000300010448328



INVOICE

Invoice: P1160990501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107706
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$3,085.98

Invoice for work or services performed at: Lafayette Backbone Part 5 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE BACKBONE PART 5	\$3,085.98
Amount Due:			\$3,085.98

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160990501

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 000107706
 Total Amount Due: **\$3,085.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939303530310000200003085988



INVOICE

Invoice: P1160998201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$52,902.99

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 1	\$52,902.99
Amount Due:			\$52,902.99

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160998201

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$52,902.99**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939383230310000000052902991



INVOICE

Invoice: P1161009701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$29,591.09

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 3	\$29,591.09
Amount Due:			\$29,591.09

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161009701

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$29,591.09

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313030393730310000000029591091



INVOICE

Invoice: P1161020301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$86,606.28

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 4	\$86,606.28
Amount Due:			<u>\$86,606.28</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161020301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$86,606.28**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P. O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313032303330310000000086606283



INVOICE

Invoice: P1161073501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$50,380.72

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$50,380.72
Amount Due:			\$50,380.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:
 Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161073501
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$50,380.72**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313037333530310000700050380726



INVOICE

Invoice: P1161082901
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$70,769.73

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 5	\$70,769.73
Amount Due:			<u><u>\$70,769.73</u></u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161082901

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$70,769.73

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313038323930310000600070769735



INVOICE

Invoice: P1161096501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$48,891.70

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$48,891.70
Amount Due:			\$48,891.70

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161096501

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$48,891.70**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313039363530310000700048891705



INVOICE

Invoice: P1161104301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$55,290.80

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 6	\$55,290.80
Amount Due:			\$55,290.80

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161104301

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$55,290.80**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313130343330310000800055290806



INVOICE

Invoice: P1161130301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$38,749.97

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$38,749.97
Amount Due:			\$38,749.97

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161130301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$38,749.97**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313133303330310000400038749978



INVOICE

Invoice: P1161140101
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$21,814.01

Invoice for work or services performed at: Lafayette Group 11 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 11	\$21,814.01
Amount Due:			\$21,814.01

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161140101

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$21,814.01**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313134303130310000000021814016



INVOICE

Invoice: P1161174301
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$627.16

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE GROUP 12, \$627.16. Amount Due: \$627.16

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161174301

Corporation Code: 75115
Please Pay By: 12/22/2016
Customer ID: 00083509
Total Amount Due: \$627.16

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136313137343330310000500000627160



INVOICE

Invoice: P1161262401
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$15,931.30

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 14	\$15,931.30
Amount Due:			\$15,931.30

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161262401

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$15,931.30

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



161631313631323632343031000000015931302



INVOICE

Invoice: P1161272701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$191,116.56

Invoice for work or services performed at: Lafayette Phase 2 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 1 & 2	\$191,116.56
Amount Due:			\$191,116.56

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161272701

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$191,116.56**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313237323730310000800191116569



INVOICE

Invoice: P1161300201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$65,447.72

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 7 PART 1 & 2	\$65,447.72
Amount Due:			\$65,447.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161300201

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$65,447.72

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313330303230310000600065447720



INVOICE

Invoice: P1161311201
Invoice Date: 11/29/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/29/2016

Amount Due: \$12,799.33

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/22/2016, Customer contribution LAFAYETTE PHASE 11 PART 1-4, \$12,799.33. Total Amount Due: \$12,799.33

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161311201

Corporation Code: 75115

Please Pay By: 12/29/2016

Customer ID: 00083509

Total Amount Due: \$12,799.33

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136313331313230310000900012799330

From: King, Daniel
Sent: Thursday, June 01, 2017 10:16 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices
Importance: High

Anita:

I wanted to follow up with you on this one again. We understand and appreciate MetroNet's desire to let sleeping dogs lie with Duke, but that approach causes financial issues for Windstream because we are the entity forced to carry an aging amount in our Accounts Payable and Accounts Receivable. If MetroNet doesn't object, and Duke would be willing to withdraw the Windstream invoice and issue it directly to MetroNet, we wouldn't have a concern with MetroNet's approach. However, I am not sure that Duke is going to be willing to invoice MetroNet directly since their Agreement is with Windstream.

Please let me know at your earliest convenience whether MetroNet is willing to allow Windstream to pursue having Duke withdraw the Windstream invoice and issue it directly to MetroNet.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, May 10, 2017 10:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan: We have heard nothing, and frankly would like to let sleeping dogs lie. I will ask Kevin if he has anything scheduled with Duke, but I haven't heard of anything.

Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214

Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, May 10, 2017 10:22 AM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices

Anita:

I just wanted to check in with you and see if MetroNet has any follow-up meetings scheduled with Duke? I think that my internal business contacts are getting pressure to get this invoice off of our books.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Tuesday, May 02, 2017 9:12 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: Duke Invoices

Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

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INVOICE

Invoice: P0492862901
 Invoice Date: 6/27/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/27/2014

Amount Due: \$21,441.00

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

Hanover Part 1

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/26/2014	Customer contribution CHANGE OUT 2 POLES	\$21,441.00
Amount Due:			\$21,441.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: **P0492862901**

Corporation Code: 75115
 Please Pay By: 7/27/2014
 Customer Number: 00070740
 Total Amount Due: **\$21,441.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4041

1616303439323836323930310000400021441007



INVOICE

Invoice: P0572444501
 Invoice Date: 8/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/31/2014

Amount Due: \$18,804.00

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/31/2014	Customer contribution INST 1 POLE, PEDESTAL AND SECONDARY	\$18,804.00
Amount Due:			\$18,804.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0572444501

Corporation Code:

75115

Please Pay By:

8/31/2014

Customer Number:

00070740

Total Amount Due:

\$18,804.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4042

1616303537323434343530310000600018804000



INVOICE

Invoice: P0578173601
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$14,634.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 1 POLES, OH & UG SECONDARY	\$14,634.00
Amount Due:			\$14,634.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0578173601

Corporation Code: 75115
 Please Pay By: 9/6/2014
 Customer Number: 00070740
 Total Amount Due: **\$14,634.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4043

1616303537383137333630310000000014634002



INVOICE

Invoice: P0599304801
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$42,121.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 7 POLES	\$42,121.00
Amount Due:			\$42,121.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0599304801

Corporation Code:

75115

Please Pay By:

9/6/2014

Customer Number:

00070740

Total Amount Due:

\$42,121.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4044

1616303539393330343830310000400042121002



INVOICE

Invoice: P0385166401
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$2,553.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
LAFAYETTE IN

Lafayette Part 344

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$2,553.00. Total Amount Due: \$2,553.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0385166401

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00058611

Total Amount Due:

\$2,553.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



1616303338353136363430310000500002553007

WIN4045



INVOICE

Invoice: P0443021901
 Invoice Date: 9/28/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/28/2013

Amount Due: **\$71,821.00**

Invoice for work or services performed at: Lafayette Phase 7 Part 1 LAFAYETTE
 IN

Lafayette Part 344

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/27/2013	Customer contribution INST 18 POLES,9 SPANS SEC,2 XFMR	\$71,821.00

Amount Due: **\$71,821.00**

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0443021901

Corporation Code:

75115

Please Pay By:

10/28/2013

Customer Number:

00070740

Total Amount Due:

\$71,821.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4046

1616303434333032313930310000000071821005



INVOICE

Invoice: P0443021906
 Invoice Date: 10/15/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/14/2013

Amount Due: \$9,146.00

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE
 IN

Lafayette Part 3+4

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/14/2013	Customer contribution	\$9,146.00
Amount Due:			<u>\$9,146.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0443021906

Corporation Code: 75115
 Please Pay By: 11/14/2013
 Customer Number: 00070740
 Total Amount Due: **\$9,146.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4047

1616303434333032313930360000200009146008



INVOICE

Invoice: P0358360201
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00068484
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$156,548.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 142

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$156,548.00. Total Amount Due: \$156,548.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0358360201

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00068484

Total Amount Due:

\$156,548.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



WIN4048

1616303335383336303230310000700156548006



INVOICE

Invoice: P0390913001
Invoice Date: 3/13/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00059721
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/12/2013

Amount Due: \$102,113.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 1 & 2

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/12/2013, Customer contribution, \$102,113.00. Amount Due: \$102,113.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0390913001

Corporation Code:

75115

Please Pay By:

4/12/2013

Customer Number:

00059721

Total Amount Due:

\$102,113.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



WIN4049

1616303339303931333030310000100102113004



INVOICE

Invoice: P0375201001
 Invoice Date: 4/10/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Customer No: 00070112
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/10/2013

Amount Due: **\$32,747.00**

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12
 WEST LAFAYETTE IN

Lafayette Phase 12

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/9/2013	Customer contribution	\$32,747.00
Amount Due:			<u><u>\$32,747.00</u></u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0375201001

Corporation Code: 75115
 Please Pay By: 5/10/2013
 Customer Number: 00070112
 Total Amount Due: **\$32,747.00**

Fed Tax ID # 35-0594457

KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Amount Enclosed



1616303337353230313030310000600032747000

WIN4050



INVOICE

Invoice: P0390914001
 Invoice Date: 7/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/1/2013

Amount Due: **\$78,169.00**

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

*Lafayette Phase 4
 Part 1 Rev*

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/1/2013	Customer contribution INSTALL 2-35'; 3-40'; 3-45'; 3-50' POLES	\$78,169.00
Amount Due:			<u>\$78,169.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0390914001

Corporation Code:

75115

Please Pay By:

8/1/2013

Customer Number:

00070740

Total Amount Due:

\$78,169.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0406906005
 Invoice Date: 6/14/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/14/2014

Amount Due: \$34,323.00

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/13/2014	Customer contribution CHANGE OUT 3 POLES, RAISE MISC EQUIP	\$34,323.00
Amount Due:			\$34,323.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0406906005

Corporation Code:

75115

Please Pay By:

7/14/2014

Customer Number:

00070740

Total Amount Due:

\$34,323.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4052

1616303430363930363030350000500034323003



INVOICE

Invoice: P0456348801
 Invoice Date: 7/15/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/14/2014

Amount Due: \$70,711.00

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/14/2014	Customer contribution INST 6 POLES, 3 XFRMS & 5 SPAN SECONDARY	\$70,711.00
Amount Due:			\$70,711.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0456348801

Corporation Code:

75115

Please Pay By:

8/14/2014

Customer Number:

00070740

Total Amount Due:

\$70,711.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4053

1616303435363334383830310000200070711001



INVOICE

Invoice: P0461769501
Invoice Date: 3/21/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/20/2014

Amount Due: \$29,239.00

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 03/20/2014, Customer contribution INST 3 POLES, 3 SP SEC, 2 TRANSF, \$29,239.00

Amount Due: \$29,239.00

pd 5/28/14

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0461769501

Corporation Code:

75115

Please Pay By:

4/20/2014

Customer Number:

00070740

Total Amount Due:

\$29,239.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN4054

1616303436313736393530310000500029239002



INVOICE

Invoice: P0465572501
 Invoice Date: 1/13/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/12/2014

Amount Due: \$8,386.00

Invoice for work or services performed at:

Lafayette Backbone Part 5

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	1/10/2014	Customer contribution INST 2 POLES, 2 XFRMS, 2 SPANS SECONDARY	\$8,386.00

Amount Due: \$8,386.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0465572501

Corporation Code: 75115

Please Pay By: 2/12/2014

Customer Number: 00070740

Total Amount Due: **\$8,386.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4055

1616303436353537323530310000700008386005



INVOICE

Invoice: P0538967901
Invoice Date: 7/16/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 8/15/2014

Amount Due: \$13,888.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

Lafayette Group 1

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 07/15/2014, Customer contribution INST 3 SPANS SECONDARY, \$13,888.00. Total Amount Due: \$13,888.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0538967901

Corporation Code:

75115

Please Pay By:

8/15/2014

Customer Number:

00070740

Total Amount Due:

\$13,888.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN4056

1616303533383936373930310000800013888000



INVOICE

Invoice: P0542790501
 Invoice Date: 7/15/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS 1925 ENTERPRISE PKWY THOMAS HUDOCK JR TWINSBURG OH 44087	Customer No: 00070740 PO / Contract No: Payment Terms: Net 30 Due Date: 8/14/2014
Amount Due: \$56,224.00	

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/14/2014	Customer contribution INST 7 POLES, 3 XFRM AND 4 SPANS SECONDARY	\$56,224.00
Amount Due:			<u>\$56,224.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number: P0542790501

Corporation Code: 75115
Please Pay By: 8/14/2014
Customer Number: 00070740
Total Amount Due: **\$56,224.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN4057

1616303534323739303530310000300056224009



INVOICE

Invoice: P0550195601
 Invoice Date: 8/6/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/5/2014

Amount Due: \$86,478.00

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/05/2014	Customer contribution INST 7 POLES AND 13 SPANS SECONDARY	\$86,478.00
Amount Due:			\$86,478.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0550195601

Corporation Code: 75115
 Please Pay By: 9/5/2014
 Customer Number: 00070740
 Total Amount Due: **\$86,478.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0558002401
 Invoice Date: 7/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/31/2014

Amount Due: \$39,530.00

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/30/2014	Customer contribution CHANGE OUT POLES; SECONDARY; TRANSFORMERS	\$39,530.00
Amount Due:			\$39,530.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0558002401

Corporation Code:

75115

Please Pay By:

7/31/2014

Customer Number:

00070740

Total Amount Due:

\$39,530.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4059

1616303535383030323430310000300039530007



INVOICE

Invoice: P0586750401
Invoice Date: 8/21/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 9/20/2014

Amount Due: \$50,000.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

Lafayette Group 5

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 08/20/2014, Customer contribution INST 4 POLES, 8 SPANS SEC, UG SEC, \$50,000.00. Total Amount Due: \$50,000.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number: P0586750401

Corporation Code: 75115
Please Pay By: 9/20/2014
Customer Number: 00083509
Total Amount Due: \$50,000.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



WIN4060

1616303538363735303430310000500050000001



INVOICE

Invoice: P0597309501
 Invoice Date: 9/30/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/30/2014
 Amount Due: **\$53,397.00**

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 7

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	09/29/2014	Customer contribution INST 9 POLES, 1 XFRM, 3 SPANS SECONDARY	\$53,397.00
Amount Due:			<u><u>\$53,397.00</u></u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0597309501

Corporation Code: 75115
 Please Pay By: 10/30/2014
 Customer Number: 00083509
 Total Amount Due: **\$53,397.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4061

1616303539373330393530310000900053397000



INVOICE

Invoice: P0597302501
 Invoice Date: 10/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/16/2014

Amount Due: \$88,074.00

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	10/16/2014	Customer contribution INST 10 POLES, 7 SEC, 2 XFRM, 2 UG PAD	\$88,074.00
Amount Due:			\$88,074.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0597302501

Corporation Code:

75115

Please Pay By:

11/16/2014

Customer Number:

00083509

Total Amount Due:

\$88,074.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4062

1616303539373330323530310000700088074009



INVOICE

Invoice: P0601563901
 Invoice Date: 9/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS P.O. BOX 25410 OSP ADMINISTRATION AND SUPPORT LITTLE ROCK AR 72221	Customer No: 00083509 PO / Contract No: Payment Terms: Net 30 Due Date: 10/17/2014
Amount Due: \$52,071.00	

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	09/16/2014	Customer contribution INST 4 POLES, 3 XFRM, UG SEC	\$52,071.00
Amount Due:			<u>\$52,071.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to: _____ **ACH Instructions:** _____
 Duke Energy Indiana, Inc. PNC Bank
 PO Box 1771 041000124
 Cincinnati OH 45201-1771 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0601563901
 Corporation Code: 75115
 Please Pay By: 10/17/2014
 Customer Number: 00083509
 Total Amount Due: **\$52,071.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4063

1616303630313536333930310000400052071003



INVOICE

Invoice: P0626921801
Invoice Date: 1/14/2015
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 2/13/2015

Amount Due: \$65,561.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

Lafayette Group 12

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 01/13/2015, Customer contribution, \$65,561.00. Description: INSTALL 3 POLES; 12 SPANS SECONDARY. Amount Due: \$65,561.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:
Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:
Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P0626921801
Corporation Code: 75115
Please Pay By: 2/13/2015
Customer Number: 00083509
Total Amount Due: \$65,561.00

Fed Tax ID # 35-0594457
WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616303632363932313830310000000065561000



INVOICE

Invoice: P0626926101
 Invoice Date: 1/14/2015
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/13/2015

Amount Due: \$122,241.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 14

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	01/13/2015	Customer contribution INSTALL 11 POLES; 21 SPANS SECPNDARY	\$122,241.00
Amount Due:			\$122,241.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P0626926101

Corporation Code: 75115
 Please Pay By: 2/13/2015
 Customer Number: 00083509
 Total Amount Due: **\$122,241.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4066

1616303632363932363130310000900122241009



INVOICE

Invoice: P0448325001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$286,692.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Laf P
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST 28 POLES, SECONDARY, XFRM	\$286,692.00
Amount Due:			<u>\$286,692.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0448325001

Corporation Code:

75115

Please Pay By:

12/2/2013

Customer Number:

00070740

Total Amount Due:

\$286,692.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4067

1616303434383332353030310000200286692001



INVOICE

Invoice: P0400095101
 Invoice Date: 8/30/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/29/2013

Amount Due: \$3,525.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/29/2013	Customer contribution INSTALL 1-45' POLE; 2 TRANSFORMERS	\$3,525.00

Amount Due: \$3,525.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0400095101

Corporation Code: 75115
 Please Pay By: 9/29/2013
 Customer Number: 00070740
 Total Amount Due: **\$3,525.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0396988701
Invoice Date: 8/30/2013
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 9/29/2013
Amount Due: \$131,282.00

Invoice for work or services performed at: Lafayette Phase 7 Part 1 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
------	----------------	-------------	------------

1	8/29/2013	Customer contribution	\$131,282.00
---	-----------	-----------------------	--------------

INSTALL 5-40';3-45';3-50'; 2 TRANSFORMERS; 32 SPANSSEC

Amount Due: \$131,282.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0396988701

Corporation Code:

75115

Please Pay By:

9/29/2013

Customer Number:

00070740

Total Amount Due:

\$131,282.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0439102201
Invoice Date: 3/12/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/11/2014

Amount Due: \$113,125.00

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 03/11/2014, Customer contribution INST 12 POLES, 8 SP SEC, 3 XFRM, \$113,125.00. Total Amount Due: \$113,125.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0439102201

Corporation Code:

75115

Please Pay By:

4/11/2014

Customer Number:

00070740

Total Amount Due:

\$113,125.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN4070

1616303433393130323230310000900113125004



INVOICE

Invoice: P0361184601
Invoice Date: 3/21/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/20/2013

Amount Due: \$54,112.00

Invoice for work or services performed at: Lafayette Ph 11 Part 1 WEST
LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/20/2013, Customer contribution, \$54,112.00. Description: INST 10 POLES, 4 SPANS SECONDARY. Amount Due: \$54,112.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0361184601

Corporation Code:

75115

Please Pay By:

4/20/2013

Customer Number:

00058611

Total Amount Due:

\$54,112.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



WIN4071

1616303336313138343630310000000054112009



INVOICE

Invoice: P0394833201
 Invoice Date: 3/27/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Customer No: 00058611
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/26/2013
 Amount Due: **\$88,545.00**

Invoice for work or services performed at: Lafayette Ph 11 Part 2 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	3/26/2013	Customer contribution INST 30 POLES, 6 TRANSF, SPANS OF SEC	\$88,545.00
Amount Due:			<u>\$88,545.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0394833201

Corporation Code:

75115

Please Pay By:

4/26/2013

Customer Number:

00058611

Total Amount Due:

\$88,545.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Amount Enclosed



WIN4072

1616303339343833333230310000200088545001



INVOICE

Invoice: P0398161201
 Invoice Date: 5/9/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 6/8/2013

Amount Due: \$152,945.00

Invoice for work or services performed at: Lafayette Phase 11 Part 3 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	5/8/2013	Customer contribution INST 49 POLES, 3 XFMR AND SECONDARY	\$152,945.00
Amount Due:			<u>\$152,945.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0398161201

Corporation Code: 75115
 Please Pay By: 6/8/2013
 Customer Number: 00070740
 Total Amount Due: **\$152,945.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4073

1616303339383136313230310000100152945000



INVOICE

Invoice: P0398162501
 Invoice Date: 4/27/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/27/2013

Amount Due: \$5,983.00

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/26/2013	Customer contribution	\$5,983.00
Amount Due:			<u>\$5,983.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0398162501

Corporation Code:

75115

Please Pay By:

5/27/2013

Customer Number:

00070740

Total Amount Due:

\$5,983.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4074

1616303339383136323530310000500005983002



INVOICE

Invoice: P0377471201
 Invoice Date: 7/4/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/3/2013

Amount Due: \$48,318.00

Invoice for work or services performed at: LAFAYETTE PHAS 6 PART 1- REV
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/3/2013	Customer contribution INSTALL 1-55' POLE; 1 TRANS; 10 SPANS SEC	\$48,318.00
Amount Due:			<u>\$48,318.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0377471201

Corporation Code:

75115

Please Pay By:

8/3/2013

Customer Number:

00070740

Total Amount Due:

\$48,318.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4075

1616303337373437313230310000&0004&31&002



INVOICE

Invoice: P0386170304
 Invoice Date: 8/19/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/18/2013

Amount Due: \$149,439.00

Invoice for work or services performed at: Lafayette Phase 5 Part 1 Rev 3
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/15/2013	Customer contribution	\$149,439.00
		INSTALL: 7-40'; 1-45'; 1-50'; 16 SPANS SECONDARY	
Amount Due:			<u>\$149,439.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0386170304

Corporation Code: 75115
 Please Pay By: 9/18/2013
 Customer Number: 00070740
 Total Amount Due: **\$149,439.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0399668701
 Invoice Date: 9/17/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/17/2013
 Amount Due: **\$117,183.00**

Invoice for work or services performed at: Lafayette Phase 3 Part 1 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/16/2013	Customer contribution INST 10 POLES, 3 XFMR, 7 SPANS SEC	\$117,183.00
Amount Due:			<u>\$117,183.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0399668701

Corporation Code:

75115

Please Pay By:

10/17/2013

Customer Number:

00070740

Total Amount Due:

\$117,183.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4077

1616303339393636383730310000100117183009



INVOICE

Invoice: P0410544001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$99,932.00

Invoice for work or services performed at: LAFAYETTE IN

Lafayette Phase 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST POLES, XFMR, SECONDARY	\$99,932.00
Amount Due:			<u>\$99,932.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0410544001
 Corporation Code: 75115
 Please Pay By: 12/2/2013
 Customer Number: 00070740
 Total Amount Due: **\$99,932.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



1616303431303534343030310000600099932007



From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]

Sent: Monday, August 21, 2017 10:01 AM

To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; McClure, Joseph W <Joseph.W.Mcclure@windstream.com>; Windstream Jointuse <Windstream.Jointuse@windstream.com>

Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>

Subject: Windstream KDL Unpaid Make Ready

Importance: High

Sherry and Joe,

I wanted to follow up with you to see where Windstream KDL was on paying the unpaid make ready true up invoices from the Lafayette and Hanover routes. These invoices are still outstanding at this time. Last communication was back in March and we have not heard anything back in regards to these.

Please let me know when Duke can expect payment on these.

Thank you,

Jeremy

Jeremy Gibson

Sr. Joint Use Facilities Specialist

859-816-7386 Cell

Jeremy.gibson@duke-energy.com



November 17, 2016

Windstream Communications (KDL)
Poles
P. O. Box 25410
Little Rock, AR 72221

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Hanover job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Hanover Part 1	\$69,461.86	\$21,441.00	P1160706101	\$48,020.86
Hanover Path 2	\$21,214.98	\$18,804.00	P1160717901	\$2,410.98
Hanover Group 2	\$17,386.85	\$14,634.00	P1160786501	\$2,752.85
Hanover Group 3	\$47,188.83	\$41,336.00	P1160795501	\$5,852.83
			PAY THIS AMOUNT	\$59,037.52

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh

WIN4081



INVOICE

Invoice: P1160706101
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$48,020.86

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PART 1	\$48,020.86
Amount Due:			\$48,020.86

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160706101

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

00083509

Total Amount Due:

\$48,020.86

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4082

1616313136303730363130310000800048020860



INVOICE

Invoice: P1160717901
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$2,410.98

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PATH 2	\$2,410.98
Amount Due:			\$2,410.98

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160717901

Corporation Code: 75115
 Please Pay By: 12/15/2016
 Customer ID: 00083509
 Total Amount Due: **\$2,410.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



16163131363037313739303100001000024109&2



INVOICE

Invoice: P1160786501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Customer ID: 000107473
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$2,752.85

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 2	\$2,752.85
Amount Due:			\$2,752.85

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160786501

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

000107473

Total Amount Due:

\$2,752.85

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Amount Enclosed



WIN4084

1616313136303738363530310000900002752859



INVOICE

Invoice: P1160795501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016

Amount Due: \$5,852.83

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 3	\$5,852.83
Amount Due:			\$5,852.83

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160795501

Corporation Code:

75115

Please Pay By:

12/15/2016

Customer ID:

00083509

Total Amount Due:

\$5,852.83

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4085

1616313136303739353530310000200005852838



November 30, 2016

Windstream Communications
 Attn: Poles
 P. O. Box 25410
 Little Rock, AR 72221

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Lafayette job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project. Listed are refunds that were subtracted from the invoices. Also listed is a credit for a payment of \$134,738.00 that we received for the Connersville Phase 1 – 5 job that Windstream was invoiced for and the invoice was paid, but the job was cancelled.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Lafayette Part 3 & 4	\$104,246.63	\$82,870.00	P1160888601	\$21,376.63
Lafayette Phase 10 Part 1 & 2	\$267,771.29	\$253,163.10	P1160901201	\$14,608.19
Lafayette Phase 12	\$46,565.35	\$32,747.00	P1160909801	\$13,818.35
Lafayette Phase 4 Part 1 Rev	\$78,485.71	\$77,519.00	P1160964901	\$966.71
Lafayette Phase 8 Part 1	\$171,895.20	\$33,690.00	P1160969801	\$138,205.20
Lafayette Phase 3 Part 2	\$202,950.21	\$70,078.00	P1160979101	\$132,872.21
Lafayette Phase 2 Part 3	\$38,382.91	\$27,934.59	P1160985601	\$10,448.32
Lafayette Backbone Part 5	\$10,172.98	\$7,087.00	P1160990501	\$3,085.98
Lafayette Group 1	\$66,790.99	\$13,888.00	P1160998201	\$52,902.99
Lafayette Group 3	\$84,548.09	\$54,957.00	P1161009701	\$29,591.09
Lafayette Group 4	\$172,813.28	\$86,207.00	P1161020301	\$86,606.28
Lafayette Group 2	\$88,404.72	\$38,024.00	P1161073501	\$50,380.72
Lafayette Group 5	\$120,769.73	\$50,000.00	P1161082901	\$70,769.73
Lafayette Group 7	\$101,640.70	\$52,749.00	P1161096501	\$48,891.70
Lafayette Group 6	\$142,067.80	\$86,777.00	P1161104301	\$55,290.80
Lafayette Group 8	\$88,226.97	\$49,477.00	P1161130301	\$38,749.97
Lafayette Group 11	\$57,016.01	\$35,202.00	P1161140101	\$21,814.01
Lafayette Group 12	\$66,188.16	\$65,561.00	P1161174301	\$627.16
Lafayette Group 14	\$138,172.30	\$122,241.00	P1161262401	\$15,931.30
Lafayette Phase 2 Part 1 & 2	\$476,012.26	\$284,895.70	P1161272701	\$191,116.56
Lafayette Phase 7 Part 1 & 2	\$307,343.72	\$241,896.00	P1161300201	\$65,447.72
Lafayette Phase 11 Part 1 - 4	\$310,616.33	\$297,817.00	P1161311201	\$12,799.33
Lafayette Phase 6 Part 1	\$45,018.03	\$47,761.00		\$2,742.97

WIN4086

Lafayette Phase 5 Part 1 Rev 3	\$146,147.34	\$149,439.00		-\$3,291.66
Lafayette Phase 3 Part 1	\$108,419.10	\$117,183.00		-\$8,763.90
Lafayette Phase 1	\$83,970.94	\$99,283.00		-\$15,312.06
Connersville Phase 1-5 JOB CANCELLED - INVOICE PAID BY WINDSTREAM	-\$134,738.00			-\$134,738.00
			PAY THIS AMOUNT	\$911,452.36

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh



INVOICE

Invoice: P1160888601
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$21,376.63

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE PART 3 & 4, \$21,376.63. Total Amount Due: \$21,376.63

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1160888601

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: \$21,376.63

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136303838383630310000000021376639



INVOICE

Invoice: P1160901201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$14,608.19

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 10 PART 1 & 2	\$14,608.19
Amount Due:			\$14,608.19

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160901201

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$14,608.19**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930313230310000400014608192



INVOICE

Invoice: P1160909801
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$13,818.35

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE PHASE 12, \$13,818.35. Total Amount Due: \$13,818.35

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number:

P1160909801

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$13,818.35

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930393830310000900013818355



INVOICE

Invoice: P1160964901
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$966.71

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 4 PART 1 REV	\$966.71
Amount Due:			\$966.71

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160964901

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$966.71**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936343930310000100000966711



INVOICE

Invoice: P1160969801
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107039
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$138,205.20

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 8 PART 1	\$138,205.20
Amount Due:			\$138,205.20

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160969801

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 000107039
 Total Amount Due: **\$138,205.20**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936393830310000800138205207



INVOICE

Invoice: P1160979101
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$132,872.21

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 3 PART 2	\$132,872.21
Amount Due:			\$132,872.21

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160979101

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$132,872.21**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303937393130310000100132872210



INVOICE

Invoice: P1160985601
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$10,448.32**

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 3	\$10,448.32
Amount Due:			\$10,448.32

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160985601

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$10,448.32**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303938353630310000300010448328



INVOICE

Invoice: P1160990501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107706
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$3,085.98

Invoice for work or services performed at: Lafayette Backbone Part 5 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE BACKBONE PART 5	\$3,085.98
Amount Due:			\$3,085.98

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160990501

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 000107706
 Total Amount Due: **\$3,085.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939303530310000200003085988



INVOICE

Invoice: P1160998201
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$52,902.99

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE GROUP 1, \$52,902.99. Amount Due: \$52,902.99

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1160998201

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: \$52,902.99

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939383230310000000052902991



INVOICE

Invoice: P1161009701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$29,591.09

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
------	----------------	-------------	------------

1	11/21/2016	Customer contribution LAFAYETTE GROUP 3	\$29,591.09
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Amount Due: \$29,591.09

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161009701

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: \$29,591.09

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313030393730310000000029591091



INVOICE

Invoice: P1161020301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$86,606.28

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 4	\$86,606.28
Amount Due:			<u>\$86,606.28</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161020301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$86,606.28**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P. O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313032303330310000000086606283



INVOICE

Invoice: P1161073501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$50,380.72

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$50,380.72
Amount Due:			\$50,380.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:
 Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161073501
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$50,380.72**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313037333530310000700050380726



INVOICE

Invoice: P1161082901
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$70,769.73

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE GROUP 5, \$70,769.73. Total Amount Due: \$70,769.73

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161082901

Corporation Code: 75115
Please Pay By: 12/22/2016
Customer ID: 00083509
Total Amount Due: \$70,769.73

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136313038323930310000600070769735



INVOICE

Invoice: P1161096501
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016

Amount Due: \$48,891.70

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution, \$48,891.70. Total Amount Due: \$48,891.70

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161096501

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: \$48,891.70

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136313039363530310000700048891705



INVOICE

Invoice: P1161104301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$55,290.80

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 6	\$55,290.80
Amount Due:			\$55,290.80

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161104301

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: **\$55,290.80**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313130343330310000800055290806



INVOICE

Invoice: P1161130301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$38,749.97

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$38,749.97
Amount Due:			\$38,749.97

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161130301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$38,749.97**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313133303330310000400038749978



INVOICE

Invoice: P1161140101
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$21,814.01

Invoice for work or services performed at: Lafayette Group 11 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 11	\$21,814.01
Amount Due:			\$21,814.01

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161140101

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$21,814.01**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313134303130310000000021814016



INVOICE

Invoice: P1161174301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$627.16

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 12	\$627.16
Amount Due:			\$627.16

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161174301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$627.16**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313137343330310000500000627160



INVOICE

Invoice: P1161262401
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$15,931.30

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 14	\$15,931.30
Amount Due:			\$15,931.30

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161262401

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$15,931.30

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313236323430310000000015931302



INVOICE

Invoice: P1161272701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$191,116.56

Invoice for work or services performed at: Lafayette Phase 2 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 1 & 2	\$191,116.56
Amount Due:			<u>\$191,116.56</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161272701

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$191,116.56

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313237323730310000800191116569



INVOICE

Invoice: P1161300201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$65,447.72

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 7 PART 1 & 2	\$65,447.72
Amount Due:			\$65,447.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161300201

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$65,447.72**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313330303230310000600065447720



INVOICE

Invoice: P1161311201
Invoice Date: 11/29/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/29/2016

Amount Due: \$12,799.33

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/22/2016, Customer contribution LAFAYETTE PHASE 11 PART 1-4, \$12,799.33

Amount Due: \$12,799.33

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161311201

Corporation Code: 75115

Please Pay By: 12/29/2016

Customer ID: 00083509

Total Amount Due: \$12,799.33


Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616313136313331313230310000900012799330



From: King, Daniel
Sent: Thursday, June 01, 2017 10:16 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices
Importance: High

Anita:

I wanted to follow up with you on this one again. We understand and appreciate MetroNet's desire to let sleeping dogs lie with Duke, but that approach causes financial issues for Windstream because we are the entity forced to carry an aging amount in our Accounts Payable and Accounts Receivable. If MetroNet doesn't object, and Duke would be willing to withdraw the Windstream invoice and issue it directly to MetroNet, we wouldn't have a concern with MetroNet's approach. However, I am not sure that Duke is going to be willing to invoice MetroNet directly since their Agreement is with Windstream.

Please let me know at your earliest convenience whether MetroNet is willing to allow Windstream to pursue having Duke withdraw the Windstream invoice and issue it directly to MetroNet.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, May 10, 2017 10:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan: We have heard nothing, and frankly would like to let sleeping dogs lie. I will ask Kevin if he has anything scheduled with Duke, but I haven't heard of anything.

Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214

Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, May 10, 2017 10:22 AM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices

Anita:

I just wanted to check in with you and see if MetroNet has any follow-up meetings scheduled with Duke? I think that my internal business contacts are getting pressure to get this invoice off of our books.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Tuesday, May 02, 2017 9:12 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: Duke Invoices

Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

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INVOICE

Invoice: P0492862901
 Invoice Date: 6/27/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/27/2014

Amount Due: \$21,441.00

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

Hanover Part 1

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/26/2014	Customer contribution CHANGE OUT 2 POLES	\$21,441.00
Amount Due:			\$21,441.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0492862901

Corporation Code: 75115
 Please Pay By: 7/27/2014
 Customer Number: 00070740
 Total Amount Due: **\$21,441.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4112

1616303439323836323930310000400021441007



INVOICE

Invoice: P0572444501
 Invoice Date: 8/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/31/2014

Amount Due: \$18,804.00

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/31/2014	Customer contribution INST 1 POLE, PEDESTAL AND SECONDARY	\$18,804.00
Amount Due:			\$18,804.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0572444501

Corporation Code:

75115

Please Pay By:

8/31/2014

Customer Number:

00070740

Total Amount Due:

\$18,804.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4113

1616303537323434343530310000600018804000



INVOICE

Invoice: P0578173601
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$14,634.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 1 POLES, OH & UG SECONDARY	\$14,634.00
Amount Due:			\$14,634.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0578173601

Corporation Code:

75115

Please Pay By:

9/6/2014

Customer Number:

00070740

Total Amount Due:

\$14,634.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4114

1616303537383137333630310000000014634002



INVOICE

Invoice: P0599304801
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$42,121.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 7 POLES	\$42,121.00
Amount Due:			\$42,121.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0599304801

Corporation Code:

75115

Please Pay By:

9/6/2014

Customer Number:

00070740

Total Amount Due:

\$42,121.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4115

1616303539393330343830310000400042121002



INVOICE

Invoice: P0385166401
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$2,553.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
LAFAYETTE IN

Lafayette Part 344

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$2,553.00. Summary: Amount Due: \$2,553.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0385166401

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00058611

Total Amount Due:

\$2,553.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



1616303338353136363430310000500002553007

WIN4116



INVOICE

Invoice: P0443021901
 Invoice Date: 9/28/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/28/2013

Amount Due: **\$71,821.00**

Invoice for work or services performed at: Lafayette Phase 7 Part 1 LAFAYETTE
 IN

Lafayette Part 344

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/27/2013	Customer contribution INST 18 POLES,9 SPANS SEC,2 XFMR	\$71,821.00

Amount Due: **\$71,821.00**

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0443021901

Corporation Code:

75115

Please Pay By:

10/28/2013

Customer Number:

00070740

Total Amount Due:

\$71,821.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4117

1616303434333032313930310000000071821005



INVOICE

Invoice: P0443021906
 Invoice Date: 10/15/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/14/2013

Amount Due: \$9,146.00

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE
 IN

Lafayette Part 3+4

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/14/2013	Customer contribution	\$9,146.00
Amount Due:			<u>\$9,146.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0443021906
 Corporation Code: 75115
 Please Pay By: 11/14/2013
 Customer Number: 00070740
 Total Amount Due: **\$9,146.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4118

1616303434333032313930360000200009146008



INVOICE

Invoice: P0358360201
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00068484
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$156,548.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 142

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$156,548.00. Total Amount Due: \$156,548.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0358360201

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00068484

Total Amount Due:

\$156,548.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



1616303335383336303230310000700156548006

WIN4119



INVOICE

Invoice: P0390913001
Invoice Date: 3/13/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00059721
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/12/2013

Amount Due: \$102,113.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 1 & 2

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/12/2013, Customer contribution, \$102,113.00. Amount Due: \$102,113.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0390913001

Corporation Code:

75115

Please Pay By:

4/12/2013

Customer Number:

00059721

Total Amount Due:

\$102,113.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



WIN4120

1616303339303931333030310000100102113004



INVOICE

Invoice: P0375201001
 Invoice Date: 4/10/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Customer No: 00070112
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/10/2013

Amount Due: **\$32,747.00**

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12
 WEST LAFAYETTE IN

Lafayette Phase 12

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/9/2013	Customer contribution	\$32,747.00
Amount Due:			<u>\$32,747.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0375201001

Corporation Code: 75115
 Please Pay By: 5/10/2013
 Customer Number: 00070112
 Total Amount Due: **\$32,747.00**

Fed Tax ID # 35-0594457

KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Amount Enclosed



1616303337353230313030310000600032747000

WIN4121



INVOICE

Invoice: P0390914001
 Invoice Date: 7/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/1/2013

Amount Due: **\$78,169.00**

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

*Lafayette Phase 4
 Part 1 Rev*

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/1/2013	Customer contribution INSTALL 2-35'; 3-40'; 3-45'; 3-50' POLES	\$78,169.00
Amount Due:			<u>\$78,169.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0390914001

Corporation Code:

75115

Please Pay By:

8/1/2013

Customer Number:

00070740

Total Amount Due:

\$78,169.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0406906005
 Invoice Date: 6/14/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/14/2014

Amount Due: \$34,323.00

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/13/2014	Customer contribution CHANGE OUT 3 POLES, RAISE MISC EQUIP	\$34,323.00
Amount Due:			\$34,323.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0406906005

Corporation Code:

75115

Please Pay By:

7/14/2014

Customer Number:

00070740

Total Amount Due:

\$34,323.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4123

1616303430363930363030350000500034323003



INVOICE

Invoice: P0456348801
Invoice Date: 7/15/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 8/14/2014

Amount Due: \$70,711.00

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 07/14/2014, Customer contribution INST 6 POLES, 3 XFRMS & 5 SPAN SECONDARY, \$70,711.00. Total Amount Due: \$70,711.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0456348801

Corporation Code:

75115

Please Pay By:

8/14/2014

Customer Number:

00070740

Total Amount Due:

\$70,711.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN4124

1616303435363334383830310000200070711001



INVOICE

Invoice: P0461769501
 Invoice Date: 3/21/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/20/2014

Amount Due: \$29,239.00

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	03/20/2014	Customer contribution INST 3 POLES, 3 SP SEC, 2 TRANSF	\$29,239.00

Amount Due: \$29,239.00

pd 5/28/14

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0461769501

Corporation Code:

75115

Please Pay By:

4/20/2014

Customer Number:

00070740

Total Amount Due:

\$29,239.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4125

1616303436313736393530310000500029239002



INVOICE

Invoice: P0465572501
 Invoice Date: 1/13/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/12/2014

Amount Due: \$8,386.00

Invoice for work or services performed at:

Lafayette Backbone Part 5

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	1/10/2014	Customer contribution INST 2 POLES, 2 XFRMS, 2 SPANS SECONDARY	\$8,386.00

Amount Due: \$8,386.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0465572501

Corporation Code: 75115
 Please Pay By: 2/12/2014
 Customer Number: 00070740
 Total Amount Due: **\$8,386.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4126

1616303436353537323530310000700008386005



INVOICE

Invoice: P0538967901
Invoice Date: 7/16/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Customer No: 00070740
PO / Contract No:
Payment Terms: Net 30
Due Date: 8/15/2014

Amount Due: \$13,888.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

Lafayette Group 1

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 07/15/2014, Customer contribution INST 3 SPANS SECONDARY, \$13,888.00. Total Amount Due: \$13,888.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0538967901

Corporation Code:

75115

Please Pay By:

8/15/2014

Customer Number:

00070740

Total Amount Due:

\$13,888.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
1925 ENTERPRISE PKWY
THOMAS HUDOCK JR
TWINSBURG OH 44087

Amount Enclosed



WIN4127

1616303533383936373930310000800013888000



INVOICE

Invoice: P0542790501
 Invoice Date: 7/15/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/14/2014
 Amount Due: **\$56,224.00**

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/14/2014	Customer contribution INST 7 POLES, 3 XFRM AND 4 SPANS SECONDARY	\$56,224.00
Amount Due:			\$56,224.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0542790501

Corporation Code:

75115

Please Pay By:

8/14/2014

Customer Number:

00070740

Total Amount Due:

\$56,224.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4128

1616303534323739303530310000300056224009



INVOICE

Invoice: P0550195601
 Invoice Date: 8/6/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/5/2014

Amount Due: \$86,478.00

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/05/2014	Customer contribution INST 7 POLES AND 13 SPANS SECONDARY	\$86,478.00
Amount Due:			\$86,478.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0550195601

Corporation Code: 75115
 Please Pay By: 9/5/2014
 Customer Number: 00070740
 Total Amount Due: **\$86,478.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0558002401
 Invoice Date: 7/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/31/2014

Amount Due: \$39,530.00

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/30/2014	Customer contribution CHANGE OUT POLES; SECONDARY; TRANSFORMERS	\$39,530.00
Amount Due:			\$39,530.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0558002401

Corporation Code:

75115

Please Pay By:

7/31/2014

Customer Number:

00070740

Total Amount Due:

\$39,530.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4130

1616303535383030323430310000300039530007



INVOICE

Invoice: P0586750401
Invoice Date: 8/21/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 9/20/2014

Amount Due: \$50,000.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

Lafayette Group 5

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 08/20/2014, Customer contribution INST 4 POLES, 8 SPANS SEC, UG SEC, \$50,000.00. Total Amount Due: \$50,000.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0586750401

Corporation Code:

75115

Please Pay By:

9/20/2014

Customer Number:

00083509

Total Amount Due:

\$50,000.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



WIN4131

1616303538363735303430310000500050000001



INVOICE

Invoice: P0597309501
Invoice Date: 9/30/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 10/30/2014
Amount Due: \$53,397.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

Lafayette Group 7

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 09/29/2014, Customer contribution INST 9 POLES, 1 XFRM, 3 SPANS SECONDARY, \$53,397.00. Amount Due: \$53,397.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number: P0597309501

Corporation Code: 75115
Please Pay By: 10/30/2014
Customer Number: 00083509
Total Amount Due: \$53,397.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



WIN4132

1616303539373330393530310000900053397000



INVOICE

Invoice: P0597302501
 Invoice Date: 10/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/16/2014

Amount Due: \$88,074.00

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	10/16/2014	Customer contribution INST 10 POLES, 7 SEC, 2 XFRM, 2 UG PAD	\$88,074.00
Amount Due:			\$88,074.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0597302501

Corporation Code:

75115

Please Pay By:

11/16/2014

Customer Number:

00083509

Total Amount Due:

\$88,074.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4133

1616303539373330323530310000700088074009



INVOICE

Invoice: P0601563901
 Invoice Date: 9/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS P.O. BOX 25410 OSP ADMINISTRATION AND SUPPORT LITTLE ROCK AR 72221	Customer No: 00083509 PO / Contract No: Payment Terms: Net 30 Due Date: 10/17/2014
Amount Due: \$52,071.00	

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	09/16/2014	Customer contribution INST 4 POLES, 3 XFRM, UG SEC	\$52,071.00
Amount Due:			<u>\$52,071.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0601563901

Corporation Code:

75115

Please Pay By:

10/17/2014

Customer Number:

00083509

Total Amount Due:

\$52,071.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



WIN4134

1616303630313536333930310000400052071003



INVOICE

Invoice: P0626920801
 Invoice Date: 12/3/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 1/2/2015

Amount Due: \$35,202.00

Invoice for work or services performed at: Lafayette Group 11 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	12/02/2014	Customer contribution INST 3 POLES, 5 SPANS SECONDARY	\$35,202.00
Amount Due:			\$35,202.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:
 Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P0626920801
 Corporation Code: 75115
 Please Pay By: 1/2/2015
 Customer Number: 00083509
Total Amount Due: \$35,202.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed





INVOICE

Invoice: P0626921801
 Invoice Date: 1/14/2015
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/13/2015

Amount Due: \$65,561.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 12

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	01/13/2015	Customer contribution INSTALL 3 POLES; 12 SPANS SECONDARY	\$65,561.00

Amount Due: \$65,561.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P0626921801

Corporation Code: 75115
 Please Pay By: 2/13/2015
 Customer Number: 00083509
 Total Amount Due: **\$65,561.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4136

1616303632363932313830310000000065561000



INVOICE

Invoice: P0626926101
Invoice Date: 1/14/2015
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 2/13/2015

Amount Due: \$122,241.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

Lafayette Group 14

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 01/13/2015, Customer contribution, \$122,241.00. Description: INSTALL 11 POLES; 21 SPANS SECPNDARY. Amount Due: \$122,241.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P0626926101

Corporation Code: 75115
Please Pay By: 2/13/2015
Customer Number: 00083509
Total Amount Due: \$122,241.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



1616303632363932363130310000900122241009



INVOICE

Invoice: P0448325001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$286,692.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Laf P
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST 28 POLES, SECONDARY, XFRM	\$286,692.00
Amount Due:			<u>\$286,692.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0448325001

Corporation Code:

75115

Please Pay By:

12/2/2013

Customer Number:

00070740

Total Amount Due:

\$286,692.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4138

1616303434383332353030310000200286692001



INVOICE

Invoice: P0400095101
 Invoice Date: 8/30/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/29/2013

Amount Due: \$3,525.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/29/2013	Customer contribution INSTALL 1-45' POLE; 2 TRANSFORMERS	\$3,525.00

Amount Due: \$3,525.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0400095101

Corporation Code: 75115
 Please Pay By: 9/29/2013
 Customer Number: 00070740
 Total Amount Due: **\$3,525.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0396988701
 Invoice Date: 8/30/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/29/2013

Amount Due: \$131,282.00

Invoice for work or services performed at: Lafayette Phase 7 Part 1 LAFAYETTE
 IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/29/2013	Customer contribution INSTALL 5-40';3-45';3-50'; 2 TRANSFORMERS; 32 SPANSSEC	\$131,282.00
Amount Due:			<u>\$131,282.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0396988701

Corporation Code:

75115

Please Pay By:

9/29/2013

Customer Number:

00070740

Total Amount Due:

\$131,282.00

Fed Tax ID # 35-0594457

Amount Enclosed

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087





INVOICE

Invoice: P0439102201
 Invoice Date: 3/12/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/11/2014
 Amount Due: **\$113,125.00**

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	03/11/2014	Customer contribution INST 12 POLES, 8 SP SEC, 3 XFRM	\$113,125.00
Amount Due:			\$113,125.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0439102201

Corporation Code:

75115

Please Pay By:

4/11/2014

Customer Number:

00070740

Total Amount Due:

\$113,125.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4141

1616303433393130323230310000900113125004



INVOICE

Invoice: P0361184601
Invoice Date: 3/21/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/20/2013

Amount Due: \$54,112.00

Invoice for work or services performed at: Lafayette Ph 11 Part 1 WEST
LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/20/2013, Customer contribution, \$54,112.00. Description: INST 10 POLES, 4 SPANS SECONDARY. Amount Due: \$54,112.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0361184601

Corporation Code:

75115

Please Pay By:

4/20/2013

Customer Number:

00058611

Total Amount Due:

\$54,112.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



WIN4142

1616303336313138343630310000000054112009



INVOICE

Invoice: P0394833201
 Invoice Date: 3/27/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Customer No: 00058611
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/26/2013
 Amount Due: **\$88,545.00**

Invoice for work or services performed at: Lafayette Ph 11 Part 2 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	3/26/2013	Customer contribution INST 30 POLES, 6 TRANSF, SPANS OF SEC	\$88,545.00
Amount Due:			<u>\$88,545.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0394833201

Corporation Code:

75115

Please Pay By:

4/26/2013

Customer Number:

00058611

Total Amount Due:

\$88,545.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Amount Enclosed



WIN4143

1616303339343833333230310000200088545001



INVOICE

Invoice: P0398161201
 Invoice Date: 5/9/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 6/8/2013

Amount Due: \$152,945.00

Invoice for work or services performed at: Lafayette Phase 11 Part 3 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	5/8/2013	Customer contribution INST 49 POLES, 3 XFMR AND SECONDARY	\$152,945.00
Amount Due:			<u>\$152,945.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:
 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0398161201
 Corporation Code: 75115
 Please Pay By: 6/8/2013
 Customer Number: 00070740
 Total Amount Due: **\$152,945.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4144

1616303339383136313230310000100152945000



INVOICE

Invoice: P0398162501
 Invoice Date: 4/27/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/27/2013

Amount Due: \$5,983.00

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/26/2013	Customer contribution	\$5,983.00
Amount Due:			<u>\$5,983.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0398162501

Corporation Code:

75115

Please Pay By:

5/27/2013

Customer Number:

00070740

Total Amount Due:

\$5,983.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4145

1616303339383136323530310000500005983002



INVOICE

Invoice: P0377471201
 Invoice Date: 7/4/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/3/2013

Amount Due: \$48,318.00

Invoice for work or services performed at: LAFAYETTE PHAS 6 PART 1- REV
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/3/2013	Customer contribution INSTALL 1-55' POLE; 1 TRANS; 10 SPANS SEC	\$48,318.00
Amount Due:			<u>\$48,318.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0377471201

Corporation Code:

75115

Please Pay By:

8/3/2013

Customer Number:

00070740

Total Amount Due:

\$48,318.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4146

1616303337373437313230310000&0004&31&002



INVOICE

Invoice: P0386170304
 Invoice Date: 8/19/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/18/2013
 Amount Due: **\$149,439.00**

Invoice for work or services performed at: Lafayette Phase 5 Part 1 Rev 3
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/15/2013	Customer contribution	\$149,439.00
		INSTALL: 7-40'; 1-45'; 1-50'; 16 SPANS SECONDARY	
		Amount Due:	<u>\$149,439.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:
 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0386170304
 Corporation Code: 75115
 Please Pay By: 9/18/2013
 Customer Number: 00070740
 Total Amount Due: **\$149,439.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0399668701
 Invoice Date: 9/17/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/17/2013
 Amount Due: **\$117,183.00**

Invoice for work or services performed at: Lafayette Phase 3 Part 1 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/16/2013	Customer contribution INST 10 POLES, 3 XFMR, 7 SPANS SEC	\$117,183.00
Amount Due:			<u>\$117,183.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0399668701

Corporation Code:

75115

Please Pay By:

10/17/2013

Customer Number:

00070740

Total Amount Due:

\$117,183.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4148

1616303339393636383730310000100117183009



INVOICE

Invoice: P0410544001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$99,932.00

Invoice for work or services performed at: LAFAYETTE IN

Lafayette Phase 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST POLES, XFMR, SECONDARY	\$99,932.00
Amount Due:			<u>\$99,932.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0410544001
 Corporation Code: 75115
 Please Pay By: 12/2/2013
 Customer Number: 00070740
 Total Amount Due: **\$99,932.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4149

1616303431303534343030310000600099932007

From: King, Daniel
Sent: Thursday, December 14, 2017 11:06 AM
To: 'John Campbell' <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: RE: Windstream KDL Unpaid Make Ready

John:

Is there any update that I can share internally? I have a call scheduled at 1:30 today, and I expect that I will be asked about this.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: John Campbell [<mailto:John.Campbell@metronetinc.com>]
Sent: Wednesday, December 06, 2017 3:24 PM
To: King, Daniel <Daniel.King@windstream.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: RE: Windstream KDL Unpaid Make Ready

Dan –
I will get with Kevin as soon as possible to discuss next steps. Thank you

John Campbell
Executive Vice President and General Counsel
8837 Bond St. | Overland Park, KS 66214
Office: 812-213-1085
Cell: 913-375-5979

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From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, December 6, 2017 2:06 PM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: RE: Windstream KDL Unpaid Make Ready
Importance: High

John and Anita:

I wanted to follow up with the two of you on the outstanding make ready invoice from Duke Energy. As Kevin requested, we asked Duke to reverse the make-ready invoices and bill them directly to MetroNet. Duke refused to do so, and we still have the outstanding balance on our books. Although we have not received any pressure from Duke concerning the outstanding invoice, we are continuing to get internal pressure to get this invoice off of our books.

Kevin agreed that if Duke would not agree to reverse the changes and bill MetroNet directly that the next step was for MetroNet to reach out to Duke to set up a three way call among the parties to discuss the matter. Do you think that is something MetroNet could get set up to take place next week?

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: King, Daniel
Sent: Tuesday, September 05, 2017 9:24 AM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: FW: Windstream KDL Unpaid Make Ready
Importance: High

John:

As Kevin requested, we asked Duke to reverse the make-ready invoices and bill them directly to MetroNet. Please see the response we received from Duke below.

I believe that Kevin agreed that if Duke would not agree to reverse the changes and bill MetroNet directly that the next step was for MetroNet to reach out to Duke to set up a three way call among the parties to discuss the matter. We would appreciate it if MetroNet could get this call set up with Duke as quickly as possible.

Thanks.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Tuesday, September 05, 2017 9:05 AM
To: Lloyd, James <James.Lloyd@windstream.com>; Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Cc: Latham, Joyce <Joyce.Latham@windstream.com>; King, Daniel <Daniel.King@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: RE: Windstream KDL Unpaid Make Ready

James,

Thank you for your response back. Duke Energy will not reverse the invoices to Windstream KDL as per section 9 of the agreement 'KDL shall reimburse the applicable Operating Company for the cost of all such work'. Windstream KDL submitted the routes and is therefore responsible for all make ready and engineering cost associated with the projects. Any invoices to Windstream KDL should be paid upon receipt and not held up due to a side agreement between Windstream KDL and Metronet.

Thank you,
Jeremy
Jeremy Gibson
Sr. Joint Use Facilities Specialist
859-816-7386 Cell
Jeremy.gibson@duke-energy.com

From: Lloyd, James [<mailto:James.Lloyd@windstream.com>]
Sent: Tuesday, September 05, 2017 9:38 AM
To: Gibson, Jeremy B
Cc: Latham, Joyce; King, Daniel; Rucker, Jamie
Subject: RE: Windstream KDL Unpaid Make Ready

***** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. *****

Jeremy,

In regards to your email below, and as we have shared before, we dispute the amounts being billed to us by Duke Energy. Since we are disputing these amounts, and since these invoices are for work that MetroNet will ultimately be responsible for paying, we would like for Duke Energy to consider reversing the invoices to Windstream and billing the amounts directly to MetroNet.

If this is not possible, please let us know as soon as possible.

Sincerely,

James Lloyd
Manager – Engineering Support

Windstream Communications, LLC

11101 Anderson Drive
Little Rock, Arkansas 72212
(501) 748-7538

Email: James.Lloyd@windstream.com



From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]

Sent: Monday, August 21, 2017 10:01 AM

To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; McClure, Joseph W <Joseph.W.Mcclure@windstream.com>;
Windstream Jointuse <Windstream.Jointuse@windstream.com>

Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>

Subject: Windstream KDL Unpaid Make Ready

Importance: High

Sherry and Joe,

I wanted to follow up with you to see where Windstream KDL was on paying the unpaid make ready true up invoices from the Lafayette and Hanover routes. These invoices are still outstanding at this time. Last communication was back in March and we have not heard anything back in regards to these.

Please let me know when Duke can expect payment on these.

Thank you,

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Jeremy Gibson

Sr. Joint Use Facilities Specialist

859-816-7386 Cell

Jeremy.gibson@duke-energy.com

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From: John Campbell <John.Campbell@metronetinc.com>
Sent: Wednesday, December 06, 2017 3:24 PM
To: King, Daniel <Daniel.King@windstream.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: RE: Windstream KDL Unpaid Make Ready

Dan –
I will get with Kevin as soon as possible to discuss next steps. Thank you

John Campbell
Executive Vice President and General Counsel
8837 Bond St. | Overland Park, KS 66214
Office: 812-213-1085
Cell: 913-375-5979

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From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, December 6, 2017 2:06 PM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: RE: Windstream KDL Unpaid Make Ready
Importance: High

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Kevin agreed that if Duke would not agree to reverse the changes and bill MetroNet directly that the next step was for MetroNet to reach out to Duke to set up a three way call among the parties to discuss the matter. Do you think that is something MetroNet could get set up to take place next week?

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: King, Daniel

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Cc: Latham, Joyce <Joyce.Latham@windstream.com>; King, Daniel <Daniel.King@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>

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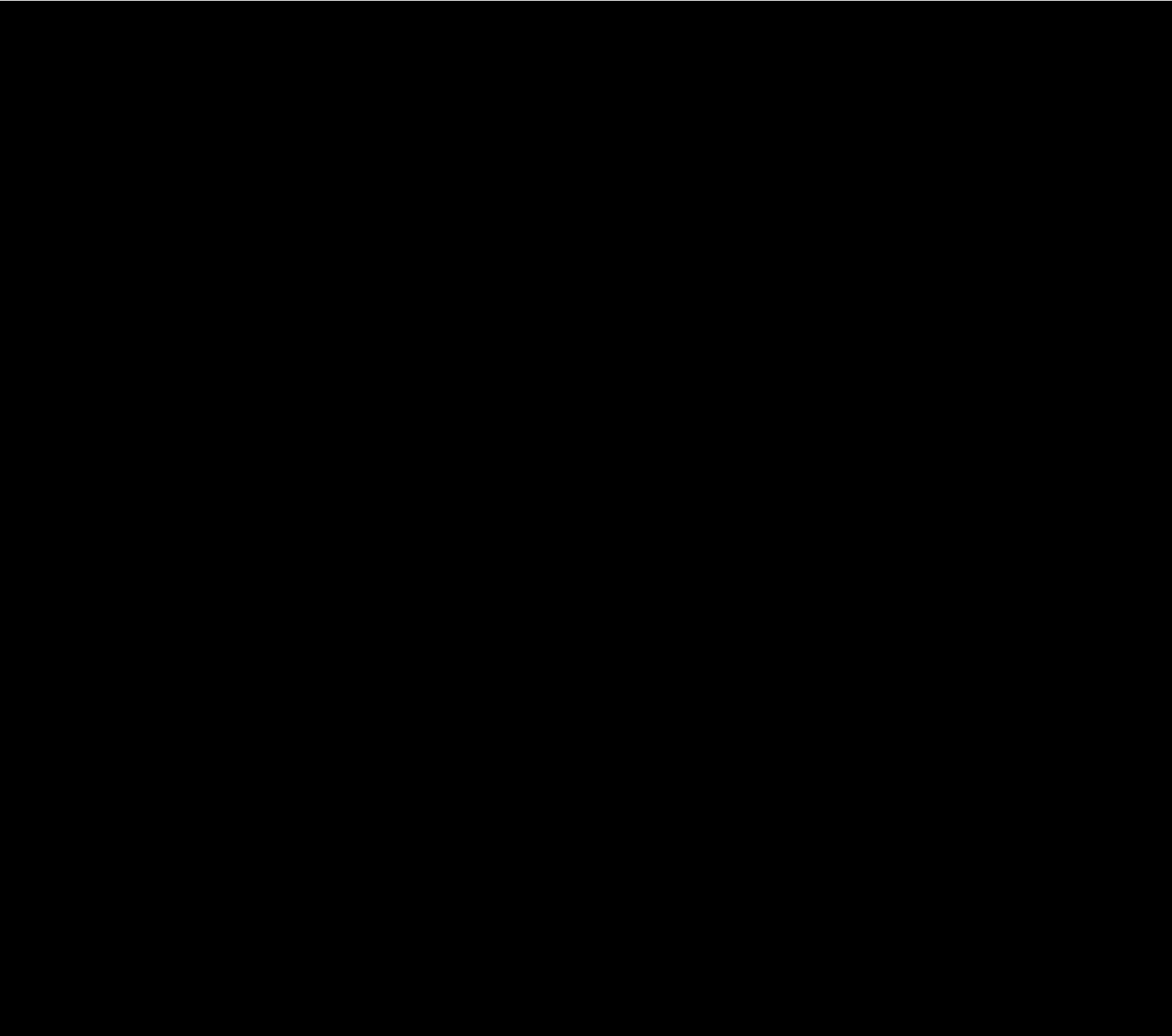
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Please let me know when Duke can expect payment on these.

Thank you,
Jeremy
Jeremy Gibson
Sr. Joint Use Facilities Specialist
859-816-7386 Cell
Jeremy.gibson@duke-energy.com

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From: King, Daniel
Sent: Thursday, December 14, 2017 4:56 PM
To: 'John Campbell' <John.Campbell@metronetinc.com>
Subject: RE: Windstream KDL Unpaid Make Ready

John:

I understand. Thanks for the update. I hope Kevin is able to push to get a discussion with Duke on this topic set up very soon.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: John Campbell [<mailto:John.Campbell@metronetinc.com>]
Sent: Thursday, December 14, 2017 4:33 PM
To: King, Daniel <Daniel.King@windstream.com>
Subject: Re: Windstream KDL Unpaid Make Ready

Dan
I apologize I'm traveling and just picked up your message. I talked to Kevin and he's going to try to get something scheduled soon. Duke has been radio silent recently on other requests to meet.

Sent from my iPhone

On Dec 14, 2017, at 12:06 PM, King, Daniel <Daniel.King@windstream.com> wrote:

John:

Is there any update that I can share internally? I have a call scheduled at 1:30 today, and I expect that I will be asked about this.

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: John Campbell [<mailto:John.Campbell@metronetinc.com>]

Sent: Wednesday, December 06, 2017 3:24 PM

To: King, Daniel <Daniel.King@windstream.com>; Anita Larson <Anita.Larson@metronetinc.com>

Subject: RE: Windstream KDL Unpaid Make Ready

Dan –

I will get with Kevin as soon as possible to discuss next steps. Thank you

John Campbell

Executive Vice President and General Counsel

8837 Bond St. | Overland Park, KS 66214

Office: 812-213-1085

Cell: 913-375-5979

This message from the Legal Department of the sender, and contains information which may be confidential, privileged, and/or exempt from disclosure under applicable law. If you are not the addressee (or authorized to receive for the addressee), you are hereby notified that the copying, use or distribution of any information or materials transmitted in or with this message is strictly prohibited. If you received this message in error, please immediately notify me by replying to this e-mail, then promptly destroy the original message. Thank you.

From: King, Daniel [<mailto:Daniel.King@windstream.com>]

Sent: Wednesday, December 6, 2017 2:06 PM

To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>

Subject: RE: Windstream KDL Unpaid Make Ready

Importance: High

John and Anita:

I wanted to follow up with the two of you on the outstanding make ready invoice from Duke Energy. As Kevin requested, we asked Duke to reverse the make-ready invoices and bill them directly to MetroNet. Duke refused to do so, and we still have the outstanding balance on our books. Although we have not received any pressure from Duke concerning the outstanding invoice, we are continuing to get internal pressure to get this invoice off of our books.

Kevin agreed that if Duke would not agree to reverse the changes and bill MetroNet directly that the next step was for MetroNet to reach out to Duke to set up a three way call among the parties to discuss the matter. Do you think that is something MetroNet could get set up to take place next week?

Dan

Daniel J. King

Senior Counsel – Commercial Contracts Team | Windstream

3701 Communications Way | Evansville, IN 47715

Daniel.King@windstream.com | windstream.com

o: 812.759.7973 | m: 812.480.4786

From: King, Daniel
Sent: Tuesday, September 05, 2017 9:24 AM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: FW: Windstream KDL Unpaid Make Ready
Importance: High

John:

As Kevin requested, we asked Duke to reverse the make-ready invoices and bill them directly to MetroNet. Please see the response we received from Duke below.

I believe that Kevin agreed that if Duke would not agree to reverse the changes and bill MetroNet directly that the next step was for MetroNet to reach out to Duke to set up a three way call among the parties to discuss the matter. We would appreciate it if MetroNet could get this call set up with Duke as quickly as possible.

Thanks.

Dan

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Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Tuesday, September 05, 2017 9:05 AM
To: Lloyd, James <James.Lloyd@windstream.com>; Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Cc: Latham, Joyce <Joyce.Latham@windstream.com>; King, Daniel <Daniel.King@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: RE: Windstream KDL Unpaid Make Ready

James,

Thank you for your response back. Duke Energy will not reverse the invoices to Windstream KDL as per section 9 of the agreement 'KDL shall reimburse the applicable Operating Company for the cost of all such work'. Windstream KDL submitted the routes and is therefore responsible for all make ready and engineering cost associated with the projects. Any invoices to Windstream KDL should be paid upon receipt and not held up due to a side agreement between Windstream KDL and Metronet.

Thank you,
Jeremy
Jeremy Gibson
Sr. Joint Use Facilities Specialist
859-816-7386 Cell

Jeremy.gibson@duke-energy.com

From: Lloyd, James [<mailto:James.Lloyd@windstream.com>]
Sent: Tuesday, September 05, 2017 9:38 AM
To: Gibson, Jeremy B
Cc: Latham, Joyce; King, Daniel; Rucker, Jamie
Subject: RE: Windstream KDL Unpaid Make Ready

***** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. *****

Jeremy,

In regards to your email below, and as we have shared before, we dispute the amounts being billed to us by Duke Energy. Since we are disputing these amounts, and since these invoices are for work that MetroNet will ultimately be responsible for paying, we would like for Duke Energy to consider reversing the invoices to Windstream and billing the amounts directly to MetroNet.

If this is not possible, please let us know as soon as possible.

Sincerely,

James Lloyd
Manager – Engineering Support
Windstream Communications, LLC
11101 Anderson Drive
Little Rock, Arkansas 72212
(501) 748-7538
Email: James.Lloyd@windstream.com

<image001.png>

From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Monday, August 21, 2017 10:01 AM
To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; Mcclure, Joseph W <Joseph.W.Mcclure@windstream.com>; Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>
Subject: Windstream KDL Unpaid Make Ready
Importance: High

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I wanted to follow up with you to see where Windstream KDL was on paying the unpaid make ready true up invoices from the Lafayette and Hanover routes. These invoices are still outstanding at this time. Last communication was back in March and we have not heard anything back in regards to these.

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From: King, Daniel
Sent: Monday, December 04, 2017 5:04 PM
To: 'Anita Larson' <Anita.Larson@metronetinc.com>
Subject: RE: Windstream Tariff

Anita:

I should be in a position to have a response to you tomorrow concerning MetroNet's ability to utilize the CATV Pole Attachment tariff.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Monday, December 04, 2017 12:59 PM
To: King, Daniel <Daniel.King@windstream.com>
Subject: Windstream Tariff

Dan: I hope you had a great weekend!

Were you able to catch up with Cesar about the tariff? Needless to say, we provide CATV too. Certainly under the definition of "Cable Television Company or Operator" in the tariff, we would be a company which provides CATV service.

Thanks,
Anita

Anita Larson
Vice President and Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel
Sent: Friday, December 08, 2017 5:58 PM
To: 'Anita Larson' <Anita.Larson@metronetinc.com>
Subject: RE: Windstream Tariff

Anita:

We are ready to speak with MetroNet about either moving forward with a Pole Attachment Agreement or proceeding under the tariff for attaching to poles in Kentucky. If you provide me some times when you and the MetroNet team would be available to talk next week, I will get a meeting set up. Myself, James Lloyd and Michelle McLaughlin will be attending for Windstream.

Dan

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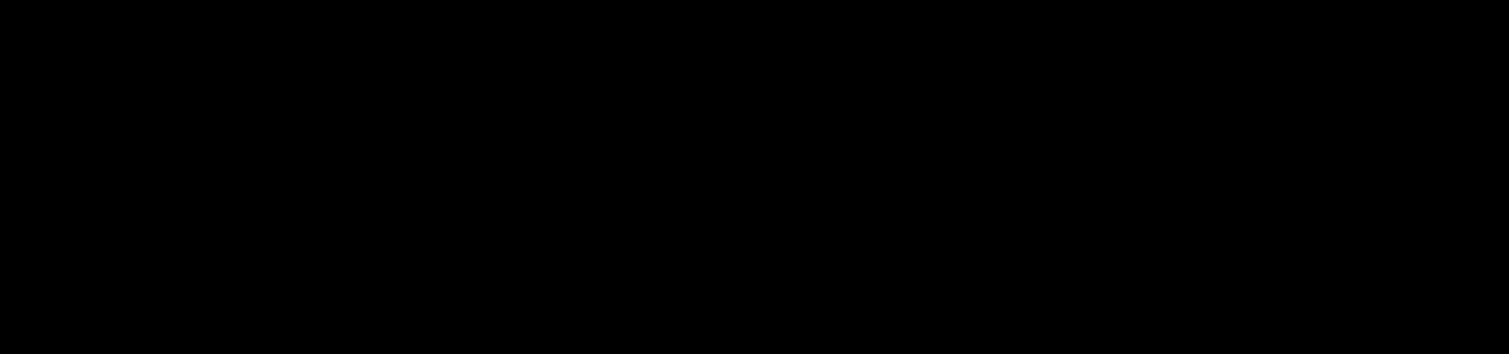
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Email: anita.larson@qservicesco.com



From: King, Daniel
Sent: Wednesday, May 10, 2017 10:22 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Anita:

I just wanted to check in with you and see if MetroNet has any follow-up meetings scheduled with Duke? I think that my internal business contacts are getting pressure to get this invoice off of our books.

Dan

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From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Tuesday, May 02, 2017 9:12 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: Duke Invoices

Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

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Email: anita.larson@qservicesco.com

From: King, Daniel

Sent: Thursday, June 08, 2017 2:07 PM

To: Anita Larson <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: RE: Duke Invoices

Importance: High

Anita:

Do you have any updates for me? There is a lot of internal pressure building to get this invoice off our books.

Dan

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From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]

Sent: Thursday, June 01, 2017 10:37 AM

To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>

Subject: RE: Duke Invoices

Dan: Thanks for the email. Let me talk to my folks about this.

Thanks again,

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Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Thursday, June 01, 2017 10:16 AM
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Subject: RE: Duke Invoices
Importance: High

Anita:

I wanted to follow up with you on this one again. We understand and appreciate MetroNet's desire to let sleeping dogs lie with Duke, but that approach causes financial issues for Windstream because we are the entity forced to carry an aging amount in our Accounts Payable and Accounts Receivable. If MetroNet doesn't object, and Duke would be willing to withdraw the Windstream invoice and issue it directly to MetroNet, we wouldn't have a concern with MetroNet's approach. However, I am not sure that Duke is going to be willing to invoice MetroNet directly since their Agreement is with Windstream.

Please let me know at your earliest convenience whether MetroNet is willing to allow Windstream to pursue having Duke withdraw the Windstream invoice and issue it directly to MetroNet.

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Sent: Wednesday, May 10, 2017 10:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan: We have heard nothing, and frankly would like to let sleeping dogs lie. I will ask Kevin if he has anything scheduled with Duke, but I haven't heard of anything.

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Have a great day!

Thanks,
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From: King, Daniel
Sent: Friday, June 09, 2017 11:04 AM
To: Anita Larson <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Anita:

Thanks for the update. I didn't think you were ignoring me. I was going to give you a call on Monday if I hadn't heard anything.

Hope you have a great weekend and are able to round up the necessary folks for a meeting early next week. ☺

Dan

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Friday, June 09, 2017 10:36 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan/Mike: I'm not intentionally ignoring you. We are trying to schedule a meeting internally to discuss this. I had hoped it would happen today, but it looks like it will be next week. I would greatly appreciate your patience and hope to be in contact with you shortly.

Hope you have a great weekend!

Thanks,
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Importance: High

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Please let me know at your earliest convenience whether MetroNet is willing to allow Windstream to pursue having Duke withdraw the Windstream invoice and issue it directly to MetroNet.

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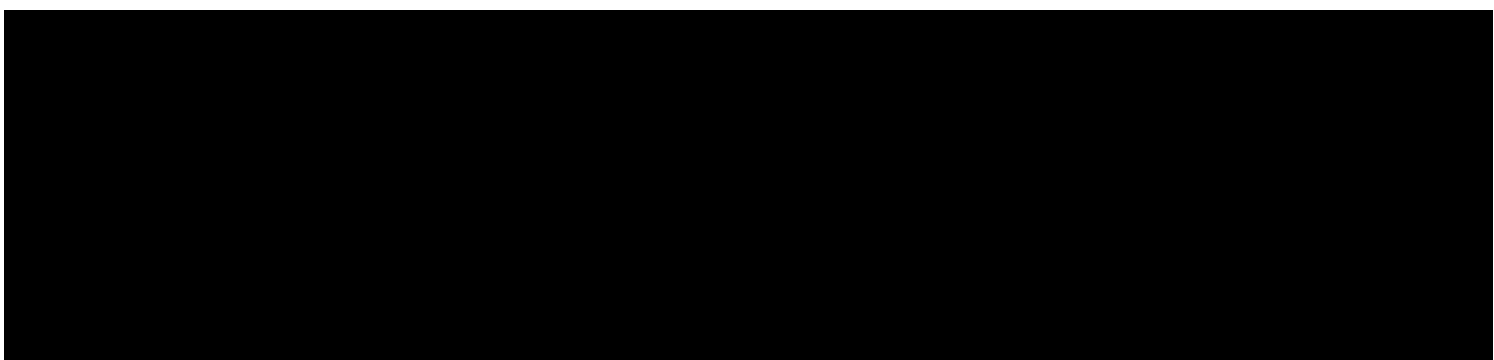
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Sent: Wednesday, June 21, 2017 4:56 PM
To: 'Anita Larson' <Anita.Larson@metronetinc.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Anita:

Any update for us? Mike and I have an internal call at 11:00 tomorrow with several other persons, and I am sure this matter will come up.

Dan

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From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Wednesday, May 10, 2017 10:27 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: RE: Duke Invoices

Dan: We have heard nothing, and frankly would like to let sleeping dogs lie. I will ask Kevin if he has anything scheduled with Duke, but I haven't heard of anything.

Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Wednesday, May 10, 2017 10:22 AM
To: Anita Larson; Richardson, Michael S
Subject: RE: Duke Invoices

Anita:

I just wanted to check in with you and see if MetroNet has any follow-up meetings scheduled with Duke? I think that my internal business contacts are getting pressure to get this invoice off of our books.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: Anita Larson [<mailto:Anita.Larson@metronetinc.com>]
Sent: Tuesday, May 02, 2017 9:12 AM
To: King, Daniel <Daniel.King@windstream.com>; Richardson, Michael S <Michael.S.Richardson@windstream.com>
Subject: Duke Invoices


Dan/Mike: I hope you are staying dry! I love rain, but a little sunshine is sure welcome. I want to let you know that we haven't heard anything from Duke with respect to backup for the invoices you sent over earlier this year. Just want you to know that we haven't forgotten you and will keep you in the loop going forward.

Have a great day!

Thanks,
Anita

Anita Larson
Senior Counsel
8837 Bond Street
Overland Park, KS 66214
Office: 812.213.1095
Mobile: 785.331.7296
Email: anita.larson@qservicesco.com

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From: John Campbell <John.Campbell@metronetinc.com>
Sent: Monday, July 24, 2017 11:05 AM
To: King, Daniel <Daniel.King@windstream.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: RE: Metronet Update

Dan –

Given the feedback we will likely have a different roster for the 27th from our side. I'll let you know who will be in attendance soon. At a minimum, myself, Anita and Jason Nutter will be a part of the phone call. Thank you

John Campbell
Executive Vice President and General Counsel
8837 Bond St. | Overland Park, KS 66214
Office: 812-213-1085
Cell: 913-375-5979

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From: King, Daniel [<mailto:Daniel.King@windstream.com>]
Sent: Monday, July 24, 2017 10:56 AM
To: John Campbell <John.Campbell@metronetinc.com>; Anita Larson <Anita.Larson@metronetinc.com>
Subject: Metronet Update

John:

I spoke with Joyce Latham this morning about this week's call / meeting on Thursday. Joyce said that if we schedule a call / meeting of the decision makers from MetroNet and Windstream for sometime in August, that will give her time to prepare and confirm settlement parameters that she could work within. This will also give us time to determine if there are any other decision makers within Windstream that need to be included in the call / meeting. Joyce would not be available August 8 – 10 or August 21 – 23, but otherwise her August is open.

It is my understanding that even if we don't have the decision makers taking part in Thursday's meeting, we (MetroNet and Windstream) still plan to use the time we have set aside on Thursday morning to work on making whatever additional progress we can in getting the Duke Energy invoice and the nGenX colocation issues worked out. Also, we can still talk through the various MetroNet / Windstream agreements and see if there is anything else the

parties can do to position ourselves to reach final agreement on a go forward plan in August for these agreements. Let me know if your understanding is different.

Thanks.

Dan

Daniel J. King
Senior Counsel – Commercial Contracts Team | Windstream
3701 Communications Way | Evansville, IN 47715
Daniel.King@windstream.com | windstream.com
o: 812.759.7973 | m: 812.480.4786

From: John Campbell [<mailto:John.Campbell@metronetinc.com>]
Sent: Tuesday, July 18, 2017 11:14 AM
To: King, Daniel <Daniel.King@windstream.com>
Subject: FW: Metronet Update

Scott Freeburn
Scott.Freeburn@duke-energy.com
Duke Energy
Grid Solutions - Joint Use
3300 Exchange Place
Lake Mary, FL 32746
(407) 942-9415 or 280-2415 (office)
(407) 312-3725 (cel)



From

From: Freeburn, Scott [<mailto:Scott.Freeburn@duke-energy.com>]
Sent: Thursday, September 29, 2016 8:06 AM
To: Gibson, Jeremy B <Jeremy.Gibson@duke-energy.com>; Kevin Stelmach <Kevin.Stelmach@metronetinc.com>
Subject: RE: Metronet Update

From: Gibson, Jeremy B
Sent: Thursday, September 29, 2016 8:56 AM
To: Kevin Stelmach; Hedrick, Jason
Cc: Freeburn, Scott
Subject: RE: Metronet Update

Kevin,

I've seen the email but have not got to get updates as of yet. We cannot commit to a weekly update on this as it pulls the engineers off their jobs to give updates and this take a lot of time to get on a weekly basis. This continues to delay jobs even further. Due to the amount of companies we are dealing with we have stressed this to all of the companies that are asking for updates. Please keep this in mind for future updates. Also with the proposals in question we really need Metronet to be talking to Windstream. I have both companies asking me for updates instead of talking to each other which they are supposed to be doing. Again I'll get these updates, but moving forward Metronet will have to get these from Windstream to alleviate the duplicate work Duke is doing.

If you have any other questions please let me know.

Thank you,
Jeremy

From: Kevin Stelmach [<mailto:Kevin.Stelmach@metronetinc.com>]
Sent: Thursday, September 29, 2016 8:20 AM
To: Gibson, Jeremy B
Subject: FW: Metronet Update

Good morning Jeremy...just wanted to follow up to see if you have had a chance to look into my email below.

Thanks

Kevin Stelmach
General Manager

From: Kevin Stelmach
Sent: Wednesday, September 21, 2016 8:37 AM
To: jeremy.gibson@duke-energy.com
Subject: FW: Metronet Update

Jeremy,
Attached is the latest which is for the most part the same as what I sent to you last week. Can you provide me with the updates that you sent to Windstream? This will allow me to ask them questions on why we have not received them yet.

Below is a snap shot of the data in the spread sheet and the average number of months we are currently at with each. Can you provide a status as to when there will be another contractor in place to help with the back log?

Total Poles Applications	78			
	Quantity	Average Days-Current	Average Months-Current	Notes
Make Ready Complete	10	201.00	6.70	
Waiting on Make Ready	5	220	7.33	
Invoices Paid	4	230	7.67	
Invoice Rec'd	1	269	8.97	
Waiting on Invoice	24	212	7.07	numbe
Make Ready Quote Rec'd	7	177	5.90	
Waiting on Make Ready Estimate	31	174	5.80	Over ha

One last item I think I asked about this a few weeks ago but if we could get the two applications below back as soon as possible this will allow us to turn up several thousand passes.

456	3 - Submitted	GN East Feeder 2	40	113485-2016	1603KDL0039DEI	2/10/2016	4/5/2016	\$3,133.75	9/1/2016	\$
457	3 - Submitted	GN East Feeder 3	37	113492-2016	1604KDL0089DEI	2/10/2016	4/5/2016		6/30/2016	\$21,350

As always Jeremy I appreciate your help.

Kevin Stelmach
General Manager

From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]
Sent: Wednesday, September 14, 2016 9:07 AM
To: Kevin Stelmach <Kevin.Stelmach@metronetinc.com>
Subject: RE: Metronet Update

Kevin,

I talked to the Windstream folks and they said they forwarded on the updates on this already. Do you still need these? Just let me know.

Thank you,
Jeremy

From: Kevin Stelmach [<mailto:Kevin.Stelmach@metronetinc.com>]
Sent: Monday, September 12, 2016 12:22 PM
To: Gibson, Jeremy B
Subject: Metronet Update

***** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. *****

Jeremy,

Please find attached the current spread sheet for all of our pole applications. I have also provided a summary below which provides the average length of time based on the current state an application is in. A high priority area for me is Greenwood East Feeder 2 and 3. I have a number passes and then customers that can be activated once these are complete. These are 2 of the 24 that we are waiting on an invoice.

When we met a few weeks back in Cincinnati it sounded like you guys were looking to add another contractor to help with all of the back log. Is that still moving forward? I appreciate your help with these Jeremy and would be happy to jump on a call to talk through any of these.

Thanks

Total Poles Applications	78			
	Quantity	Average Days-Current	Average Months-Current	Note
Make Ready Complete	10	201.00	6.70	
Waiting on Make Ready	1	146	4.87	
Invoices Paid	4	230	7.67	
Invoice Rec'd	1	269	8.97	
Waiting on Invoice	24	212	7.07	numb
Make Ready Quote Rec'd	7	177	5.90	
Waiting on Make Ready Estimate	31	174	5.80	Over

Kevin Stelmach

MetroNet | General Manager

3701 Communications Way | Evansville, IN 47715

Office: 812.759.7958

www.MetronetInc.com



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From: McClure, Joseph W
Sent: Friday, March 17, 2017 11:36 AM
To: sams@metronetinc.com
Cc: King, Daniel; Sanchez, Sherry H; Moore, Claude D
Subject: FW: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)
Attachments: Cinergy_Metronet_Customer_Statement_20170131.pdf; Hanover - New.pdf; Hanover - Old.pdf; Lafayette - New.pdf; Lafayette - Old.pdf; Duke_Energy_Invoices_20170127.xlsx; FW: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Sam,

I have attached the files that were previously attached on this email chain. The customer statement shows outstanding invoices as of 1/31/2017. There was also a true-up invoice sent on 3/14/2017 (email attached).

Thanks,

Joe

From: McClure, Joseph W
Sent: Thursday, February 23, 2017 4:18 PM
To: 'Sandra Gill' <Sandra.Gill@metronetinc.com>
Cc: Nicole Sugg <Nicole.Sugg@metronetinc.com>; Robert Thurman <Robert.Thurman@metronetinc.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Hi Sandy,

I pushed back to Duke asking for itemized costs and/or some sort of explanation of what appears to be costs exceeding the proposal amounts (after I was told by Duke that they do not provide itemized costs for any customer). I highlighted the age of the incurred expenses, the total amount of the incurred expenses, and what appears to be significant cost overruns (if the initial invoice paid was the proposal amount, again, the age of the expenses puts these pre-spans).

I will let you know their response.

Thanks,

Joe

From: Sandra Gill [<mailto:Sandra.Gill@metronetinc.com>]
Sent: Thursday, February 23, 2017 3:39 PM
To: McClure, Joseph W <Joseph.W.Mcclure@windstream.com>
Cc: Nicole Sugg <Nicole.Sugg@metronetinc.com>; Robert Thurman <Robert.Thurman@metronetinc.com>
Subject: FW: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)
Importance: High

Hey Joe!

Have you had a chance to look at this and get me any additional details? I know we are on a time crunch on getting this resolved.

Please get me something as soon as you can.

Thanks!

Sandy Gill

Information Coordinator

From: Sandra Gill
Sent: Tuesday, February 21, 2017 2:22 PM
To: 'Mcclure, Joseph W' <Joseph.W.Mcclure@windstream.com>
Cc: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Subject: FW: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)
Importance: High

Joe,

I have been looking through these invoices and have gone back through the old invoices. It appears that the amount we paid is the amount we agreed to. I need you or Duke to provide me with a detailed list of what the difference is in the invoices, please.

Thank you!

Sandy Gill

Information Coordinator

From: Mcclure, Joseph W [<mailto:Joseph.W.Mcclure@windstream.com>]
Sent: Tuesday, January 31, 2017 2:55 PM
To: Sandra Gill <Sandra.Gill@metronetinc.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Sandra,

I sent what I received from Duke. Attached is the customer statement for Metronet for these types of invoices. The process seemed to change over time, but I see a lot of Duke PO#'s listed. The number next to the payment should be a check number or some kind of identifier that you may be able to track on your side. The PO#'s could be matched against the list of PO's that Duke provided.

Unfortunately, these charges for proposals were pre-SPANS. There is no effective way to search for the communications for the relevant proposals without some unique identifier attached to each invoice. Though, I believe the point of the Duke invoices is to pass along the charges that were in excess of the estimate on the proposal.

Let me know what concerns you have and if I could provide anything else.

Thanks,

Joe

From: Sandra Gill [<mailto:Sandra.Gill@metronetinc.com>]
Sent: Monday, January 30, 2017 11:38 AM
To: McClure, Joseph W <Joseph.W.Mcclure@windstream.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Joe,

I am really struggling with the Lafayette and Hanover. Do you happen to know who would have sent you the invoices for approval to pay what has already been paid?

Thanks!

Sandy Gill
Information Coordinator

From: McClure, Joseph W [<mailto:Joseph.W.Mcclure@windstream.com>]
Sent: Friday, January 27, 2017 9:46 AM
To: Sandra Gill <Sandra.Gill@metronetinc.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Sandra,

Sorry about that. I sent you the template I use for invoice generation. Attached is the list that was compiled of the old/new Duke invoices. It contains no new info, but it may help you in your analysis.

Thanks,

Joe

From: Sandra Gill [<mailto:Sandra.Gill@metronetinc.com>]
Sent: Friday, January 27, 2017 9:38 AM
To: McClure, Joseph W <Joseph.W.Mcclure@windstream.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Joe,

Thanks for all of the information! However, when I open the spreadsheet, it appears to be blank. Am I missing something?

Thanks again!

Sandy Gill
Information Coordinator

From: McClure, Joseph W [<mailto:Joseph.W.Mcclure@windstream.com>]
Sent: Friday, January 27, 2017 7:48 AM
To: AP <ap@qservicesco.com>
Cc: Sandra Gill <Sandra.Gill@metronetinc.com>; Sanchez, Sherry H <Sherry.Sanchez@windstream.com>
Subject: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Good morning,

Please see the attached invoices. I have also attached a spreadsheet with a list of “new” and “old” Duke invoices that the Windstream invoices are based. Please note, the credit detailed on the cover sheet on the Lafayette jobs were applied to Windstream invoice # 6046647.

I asked Duke to itemize the costs of these make-ready invoices; however, I was told that they do not provide that information. Please let me know if there is anything you would like me to provide.

Thanks,

Joe McClure
Analyst I – OSP P&E Administration and Support
Engineering Leases, OpEx & Revenue Support
(501)-748-7763



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Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:
 Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice			Date	Amount	Adjustments	Balance Due
6023546		Invoice	06/08/2012	17,246.00	17,246.00	0.00
Charges	Pass through			17,246.00		
Payment	18745		08/06/2012	-17,246.00		
6023547		Invoice	06/08/2012	288.12	288.12	0.00
Charges	Pass Through			288.12		
Payment	18745		08/06/2012	-288.12		
6023548		Invoice	06/08/2012	8,834.00	8,834.00	0.00
Charges	Pass Through			8,834.00		
Payment	18745		08/06/2012	-8,834.00		
6023549		Invoice	06/08/2012	14,817.00	14,817.00	0.00
Charges	Pass through			14,817.00		
Payment	19252		09/24/2012	-14,817.00		
6023591		Invoice	06/15/2012	28,011.00	28,011.00	0.00
Charges	Pass Through			28,011.00		
Payment	19252		09/24/2012	-28,011.00		
6023872		Invoice	07/11/2012	10,081.61	10,081.61	0.00
Charges	Labor			10,081.61		
Payment	7195		10/15/2013	-10,081.61		
6023873		Invoice	07/11/2012	5,401.20	5,401.20	0.00
Charges	Labor			5,401.20		
Payment	7195		10/15/2013	-5,401.20		
6023923		Invoice	07/18/2012	134,738.00	134,738.00	0.00
Charges	Pass Through			134,738.00		
Payment	22284		07/09/2013	-134,738.00		
6024138		Invoice	08/07/2012	7,475.29	7,475.29	0.00
Charges	Invoice 30312324			3,658.02		
	Invoice 30312325			3,817.27		
Payment	22284		07/09/2013	-7,475.29		
6024139		Invoice	08/07/2012	2,933.53	2,933.53	0.00
Charges	Pass Through			2,933.53		
Payment	7195		10/15/2013	-2,933.53		
6024193		Invoice	08/13/2012	7,297.00	7,297.00	0.00

For inquiries,
 please call (501) 748-7048.

Please Return One Copy With Remittance

Please Include Invoice Number on your check or money order. Late payment charges (LPCs) will be assessed on any unpaid balance.



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:

Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice		Date	Amount	Adjustments	Balance Due	
	Charges	pass through	7,297.00			
	Payment	85040	09/17/2012	-1,295.87		
	Payment	19939	12/03/2012	-7,297.00		
	Payment	txfr chk 85040 misap	02/20/2013	1,295.87		
6024334		Invoice	08/24/2012	20,165.00	20,165.00	0.00
	Charges	Pass through		20,165.00		
	Payment	22284	07/09/2013	-20,165.00		
6024530		Invoice	09/12/2012	269,305.00	269,305.00	0.00
	Charges	Pass through		269,305.00		
	Payment	20191	12/24/2012	-269,305.00		
6025231		Invoice	10/15/2012	295,235.00	295,235.00	0.00
	Charges	Pass Through		295,235.00		
	Payment	10446	02/04/2013	-295,235.00		
6025440		Invoice	10/26/2012	12,769.00	12,769.00	0.00
	Charges	PO353270001 Pass Thru Charges CMN Whites Jr & Sr High School		12,769.00		
	Payment	21440	04/24/2013	-12,769.00		
6025680		Invoice	11/19/2012	20,741.00	20,741.00	0.00
	Charges	Pass Through		20,741.00		
	Payment	20608	02/04/2013	-20,741.00		
6025973		Invoice	12/14/2012	155,335.00	155,335.00	0.00
	Charges	Pass Through		155,335.00		
	Payment	10491	02/25/2013	-155,335.00		
6026211		Invoice	01/07/2013	123,672.00	123,672.00	0.00
	Charges	Pass Through		123,672.00		
	Payment	10627	04/22/2013	-123,672.00		
6026740		Invoice	02/27/2013	156,548.00	156,548.00	0.00
	Charges	Labor		156,548.00		
	Payment	10560	03/26/2013	-156,548.00		
6026741		Invoice	02/27/2013	2,553.00	2,553.00	0.00
	Charges	Labor		2,553.00		
	Payment	10560	03/26/2013	-2,553.00		

For inquiries,
 please call (501) 748-7048.

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WIN4204



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:
 Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice			Date	Amount	Adjustments	Balance Due
6026965		Invoice	03/20/2013	102,113.00	102,113.00	0.00
Charges	Labor			102,113.00		
Payment	10609		04/15/2013	-102,113.00		
6027019		Invoice	03/26/2013	54,112.00	54,112.00	0.00
Charges	Pass Through			54,112.00		
Payment	10609		04/15/2013	-54,112.00		
6027304		Invoice	04/24/2013	88,545.00	88,545.00	0.00
Charges	Pass Through			88,545.00		
Payment	10767		06/03/2013	-88,545.00		
6027305		Invoice	04/24/2013	32,747.00	32,747.00	0.00
Charges	Pass Through			32,747.00		
Payment	10767		06/03/2013	-32,747.00		
6027367		Invoice	05/06/2013	5,983.00	5,983.00	0.00
Charges	Pass through			5,983.00		
Payment	10767		06/03/2013	-5,983.00		
6027656		Invoice	05/29/2013	152,945.00	152,945.00	0.00
Charges	Pass Through			152,945.00		
Payment	10988		08/12/2013	-152,945.00		
6027697		Invoice	06/05/2013	2,294.18	2,294.18	0.00
Charges	Pass Through			2,294.18		
Payment	10988		08/12/2013	-2,294.18		
6028038		Invoice	07/09/2013	14,324.40	14,324.40	0.00
Charges	Pass Through			12,456.00		
	Overhead Allocation			1,868.40		
Credit			12/31/2013	-14,324.40		
6028039		Invoice	07/09/2013	89,894.35	89,894.35	0.00
Charges	Pass Through			78,169.00		
	Overhead Allocation			11,725.35		
Payment	11560		01/15/2014	-89,894.35		
6028159		Invoice	07/15/2013	55,565.70	55,565.70	0.00

For inquiries,
 please call (501) 748-7048.

Please Return One Copy With Remittance

Please Include Invoice Number on your check or money order. Late payment charges (LPCs) will be assessed on any unpaid balance.

WIN4205



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:

Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice		Date	Amount	Adjustments	Balance Due
Charges	Pass Through		48,318.00		
	Pass Through 15% Allocation		7,247.70		
Payment	11025	08/26/2013	-55,565.70		
6028328	Invoice	08/02/2013	5,166.18	5,166.18	0.00
Charges	splicing		4,492.33		
	15% Markup		673.85		
Payment	ACH - 08/15/14	08/18/2014	-5,166.18		
6028792	Invoice	09/12/2013	171,854.85	171,854.85	0.00
Charges	Labor		149,439.00		
	Overhead		22,415.85		
Payment	11206	10/15/2013	-171,854.85		
6028793	Invoice	09/12/2013	4,053.75	4,053.75	0.00
Charges	Labor		3,525.00		
	Overhead		528.75		
Payment	11206	10/15/2013	-4,053.75		
6028794	Invoice	09/12/2013	150,974.30	150,974.30	0.00
Charges	Labor		131,282.00		
	Overhead		19,692.30		
Payment	11206	10/15/2013	-150,974.30		
6028968	Invoice	09/18/2013	1,850.35	1,850.35	0.00
Charges	Pass Through		1,609.00		
	15% Overhead		241.35		
Payment	27386	11/10/2014	-1,850.35		
6029047	Invoice	09/19/2013	134,760.45	134,760.45	0.00
Charges	Pass Through		117,183.00		
	Overhead		17,577.45		
Payment	11206	10/15/2013	-134,760.45		
6029360	Invoice	09/24/2013	1,441.85	1,441.85	0.00
Charges	Labor		1,441.85		
Credit		01/08/2015	-1,441.85		
6029361	Invoice	09/24/2013	890.37	890.37	0.00

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WIN4206



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:
 Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice		Date	Amount	Adjustments	Balance Due
Charges	Pas Through		890.37		
Credit		01/08/2015	-890.37		
Credit		07/27/2016	0.20		
Payment	ACH - 10/31/14	11/03/2014	-0.20		
6029818	Invoice	10/17/2013	82,594.15	82,594.15	0.00
Charges	Labor		71,821.00		
	15% Overhead		10,773.15		
Credit		10/23/2013	-82,594.15		
6029937	Invoice	10/24/2013	41,056.15	41,056.15	0.00
Charges	Pass-Thru		35,701.00		
	15% Overhead		5,355.15		
Payment	11579	01/21/2014	-41,056.15		
6030069	Invoice	11/05/2013	7,201.16	7,201.16	0.00
Charges	Franklin IN Phase 2 Pass Thru Charges		6,261.88		
	15% Overhead		939.28		
Payment	11621	02/03/2014	-7,201.16		
6030131	Invoice	11/08/2013	9,192.10	9,192.10	0.00
Charges	Labor		7,993.13		
	15% Overhead		1,198.97		
Payment	27379	11/03/2014	-9,192.10		
6030132	Invoice	11/08/2013	329,695.80	329,695.80	0.00
Charges	Labor		286,692.00		
	15% Overhead		43,003.80		
Payment	11498	12/30/2013	-329,695.80		
6030133	Invoice	11/08/2013	114,921.80	114,921.80	0.00
Charges	Labor		99,932.00		
	15% Overhead		14,989.80		
Payment	11498	12/30/2013	-114,921.80		
6030134	Invoice	11/08/2013	3,504.97	3,504.97	0.00
Charges	Labor		3,047.80		
	15% Overhead		457.17		
Payment	11795	03/18/2014	-3,504.97		
6030187	Invoice	11/13/2013	235,540.78	235,540.78	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Labor		204,818.07		
	15% Overhead		30,722.71		
Payment	24598	02/03/2014	-235,540.78		
6031109	Invoice	01/27/2014	9,643.90	9,643.90	0.00
Charges	Make Ready Work		8,386.00		
	15% Overhead		1,257.90		
Payment	11694	02/18/2014	-9,643.90		
6031169	Invoice	02/05/2014	3,293.60	3,293.60	0.00
Charges	Labor		2,864.00		
	15% Overhead		429.60		
Payment	11756	03/04/2014	-3,293.60		
6031875	Invoice	03/25/2014	130,093.75	130,093.75	0.00
Charges	Labor		113,125.00		
	15% Overhead		16,968.75		
Payment	11908	04/18/2014	-130,093.75		
6031910	Invoice	04/02/2014	9,005.29	9,005.29	0.00
Charges	Labor		7,830.69		
	15% Overhead		1,174.60		
Payment	ACH - 10/31/14	11/03/2014	-9,005.29		
6031927	Invoice	04/03/2014	33,624.85	33,624.85	0.00
Charges	Labor		29,239.00		
	15% Overhead		4,385.85		
Payment	ACH - 05/05/14	05/06/2014	-33,624.85		
6032255	Invoice	04/30/2014	59,397.50	59,397.50	0.00
Charges	Lafayette PH 8 Part 1 West Lafayette Labor		51,650.00		
	15% Overhead		7,747.50		
Payment	ACH - 06/02/14	06/03/2014	-59,397.50		
6032574	Invoice	05/20/2014	5,960.45	5,960.45	0.00
Charges	Labor		5,183.00		
	Overhead		777.45		
Credit		09/19/2014	-5,960.45		
6032692	Invoice	06/03/2014	43,466.85	43,466.85	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Labor Franklin Rte Ph 3		37,797.26		
	Overhead		5,669.59		
Payment	ACH - 10/31/14	11/03/2014	-43,466.85		
6032693	Invoice	06/03/2014	18,550.80	18,550.80	0.00
Charges	Overhead		18,550.80		
Payment	ACH - 10/31/14	11/03/2014	-18,550.80		
6032694	Invoice	06/03/2014	40,035.64	40,035.64	0.00
Charges	Labor - Madison Hereford Lake		34,813.60		
	15% overhead		5,222.04		
Payment	ACH - 10/31/14	11/03/2014	-40,035.64		
6032695	Invoice	06/03/2014	2,650.47	2,650.47	0.00
Charges	Labor - Maple Grove Huntington		2,304.76		
	Overhead		345.71		
Payment	ACH - 08/08/14	08/11/2014	-2,650.47		
6033131	Invoice	07/02/2014	1,277.65	1,277.65	0.00
Charges	Labor		1,111.00		
	15% Overhead		166.65		
Payment	ACH - 07/23/14	07/24/2014	-1,277.65		
6033234	Invoice	07/11/2014	24,657.15	24,657.15	0.00
Charges	Labor		21,441.00		
	Overhead		3,216.15		
Payment	ACH - 07/23/14	07/24/2014	-24,657.15		
6033247	Invoice	07/14/2014	10,762.85	10,762.85	0.00
Charges	Labor		9,359.00		
	Overhead		1,403.85		
Payment	ACH - 07/23/14	07/24/2014	-10,762.85		
6033248	Invoice	07/14/2014	16,737.10	16,737.10	0.00
Charges	Labor		14,554.00		
	Overhead		2,183.10		
Payment	ACH - 07/23/14	07/24/2014	-16,737.10		
6033249	Invoice	07/14/2014	45,459.50	45,459.50	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Labor		39,530.00		
	Overhead		5,929.50		
Payment	ACH - 07/23/14	07/24/2014	-45,459.50		
6033461	Invoice	07/23/2014	64,657.60	64,657.60	0.00
Charges	Labor		56,224.00		
	Overhead 15%		8,433.60		
Payment	ACH - 08/01/14	08/04/2014	-64,657.60		
6033462	Invoice	07/23/2014	81,317.65	81,317.65	0.00
Charges	Labor		70,711.00		
	15% Overhead		10,606.65		
Payment	ACH - 08/01/14	08/04/2014	-81,317.65		
6033463	Invoice	07/23/2014	15,971.20	15,971.20	0.00
Charges	Labor		13,888.00		
	15% Overhead		2,083.20		
Payment	ACH - 08/01/14	08/04/2014	-15,971.20		
6033802	Invoice	09/02/2014	2,841.65	2,841.65	0.00
Charges	Labor - 4002 Hillside Dr, Lafayette IN		2,471.00		
	15% overhead		370.65		
Payment	ACH - 09/17/14	09/19/2014	-2,841.65		
6033803	Invoice	09/02/2014	21,624.60	21,624.60	0.00
Charges	Labor - CMR - Hanover PATH 2		18,804.00		
	HANOVER IN				
	15% overhead		2,820.60		
Payment	ACH - 09/18/14	09/19/2014	-21,624.60		
6033804	Invoice	09/02/2014	99,449.70	99,449.70	0.00
Charges	Labor - Lafayette Group 4 LAFAYETTE		86,478.00		
	IN				
	15% overhead		12,971.70		
Payment	ACH - 09/18/14	09/19/2014	-99,449.70		
6033805	Invoice	09/02/2014	48,439.15	48,439.15	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Labor - KDL/Metronet Rte - Hanover Group 3		42,121.00		
	15% overhead		6,318.15		
Payment	ACH - 09/18/14	09/19/2014	-48,439.15		
6033806	Invoice	09/02/2014	16,829.11	16,829.11	0.00
Charges	Labor - KDL/Metronet Rte - Hanover Group 2		14,634.00		
	15% overhead		2,195.11		
Payment	ACH - 09/18/14	09/19/2014	-16,829.11		
6033807	Invoice	09/02/2014	57,500.00	57,500.00	0.00
Charges	Labor - KDL Rte Lafayette Group 5 LAFAYETTE IN		50,000.00		
	15% overhead		7,500.00		
Payment	ACH - 09/18/14	09/19/2014	-57,500.00		
6034197	Invoice	09/22/2014	59,881.65	59,881.65	0.00
Charges	Labor - Lafayette Group 8 LAFAYETTE IN		52,071.00		
	15% overhead		7,810.65		
Payment	ACH - 10/10/14	10/13/2014	-59,881.65		
6035050	Invoice	10/14/2014	61,406.55	61,406.55	0.00
Charges	Labor - LAF Group 7		53,397.00		
	15% overhead		8,009.55		
Payment	ACH - 10/31/14	11/03/2014	-61,406.55		
6035124	Invoice	10/20/2014	101,285.10	101,285.10	0.00
Charges	Labor - Lafayette Group 6 LAFAYETTE IN		88,074.00		
	15% overhead		13,211.10		
Payment	ACH - 10/31/14	11/03/2014	-101,285.10		
6035827	Invoice	12/11/2014	1,538.70	1,538.70	0.00
Charges	Lafayette Group 10 LAFAYETTE IN		1,338.00		
	Overhead		200.70		
Payment	ach	12/29/2014	-1,538.70		
6035830	Invoice	12/11/2014	40,482.30	40,482.30	0.00

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WIN4211



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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Lafayette Group 11 LAFAYETTE IN		35,202.00		
	Overhead		5,280.30		
Payment	ach	12/22/2014	-40,482.30		
6036064	Invoice	01/02/2015	10,984.80	10,984.80	0.00
Charges	Hanover Group 5		9,552.00		
	Overhead		1,432.80		
Payment	ACH - 01/09/15	01/12/2015	-10,984.80		
6036181	Invoice	01/14/2015	48,185.00	48,185.00	0.00
Charges	Lafayette Group 13 LAFAYETTE IN		41,900.00		
	Overhead		6,285.00		
Payment	ACH 01/23/15 \$264,15	01/26/2015	-48,185.00		
6036182	Invoice	01/14/2015	55,864.70	55,864.70	0.00
Charges	Hanover Group 4		48,578.00		
	Overhead		7,286.70		
Payment	ACH 01/23/15 \$56,525	01/26/2015	-55,864.70		
6036183	Invoice	01/14/2015	75,395.15	75,395.15	0.00
Charges	Lafayette Group 12 LAFAYETTE IN		65,561.00		
	Overhead		9,834.15		
Payment	ACH 01/23/15 \$264,15	01/26/2015	-75,395.15		
6036184	Invoice	01/14/2015	140,577.15	140,577.15	0.00
Charges	Lafayette Group 14 LAFAYETTE IN		122,241.00		
	Overhead		18,336.15		
Payment	ACH 01/23/15 \$264,15	01/26/2015	-140,577.15		
6036247	Invoice	01/20/2015	661.25	661.25	0.00
Charges	Hanover AREA 1		575.00		
	Overhead		86.25		
Payment	ACH 01/23/15 \$56,525	01/26/2015	-661.25		
6036789	Invoice	03/04/2015	4,562.05	4,562.05	0.00
Charges	Ridgeview Part 2 Vincennes		3,967.00		
	Overhead		595.05		
Payment	ACH - 03/13/15	03/16/2015	-4,562.05		
6037272	Invoice	04/02/2015	393.30	393.30	0.00

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WIN4212



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 Little Rock AR 72222

Invoice		Date	Amount	Adjustments	Balance Due
Charges	Violations-Huntington IN Flaxmill Rd w/o US 24		342.00		
	Overhead		51.30		
Payment	ACH - 05/22/15	05/26/2015	-393.30		
6037273	Invoice	04/02/2015	12,653.45	12,653.45	0.00
Charges	Ridgeview Part 1 Vincennes		11,003.00		
	Overhead		1,650.45		
Payment	ACH - 05/01/15	05/05/2015	-12,653.45		
6037811	Invoice	05/14/2015	2,967.00	2,967.00	0.00
Charges	Pre Attachment Engineering, Structural Analysis, & Permit Coordination Fees		2,580.00		
	Overhead		387.00		
Payment	Per Becky Hay 09/21/	09/22/2015	-2,967.00		
6038487	Invoice	06/25/2015	3,960.91	3,960.91	0.00
Charges	Make Ready - 610 Meridian St, West Lafayette IN		3,444.27		
	Overhead		516.64		
Payment	ACH - 09/11/15	09/15/2015	-3,960.91		
6038488	Invoice	06/25/2015	263.24	263.24	0.00
Charges	Make Ready - 820 Robinson, West Lafayette IN		228.90		
	Overhead		34.34		
Payment	ACH - 07/24/15	07/28/2015	-263.24		
6038489	Invoice	06/25/2015	697.53	697.53	0.00
Charges	Make Ready - 622 Rose St, West Lafayette IN		606.54		
	Overhead		90.99		
Payment	ACH - 07/24/15	07/28/2015	-697.53		
6038721	Invoice	07/17/2015	902.75	902.75	0.00

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WIN4213



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Invoice		Date	Amount	Adjustments	Balance Due
Charges	1501KDL004DEI, P0714644901	7/2/15	170.00		
	1501KDL003DEI, P0714638201	7/2/15	165.00		
	1501KDL002DEI, P0722495001	7/2/15	170.00		
	1501KDL010DEI, P0714654901	7/2/15	170.00		
	1502KDL003DEI, P0722508401	7/2/15	110.00		
	Overhead		117.75		
Payment	ACH - 09/11/15	09/15/2015	-902.75		
6039808	Invoice	09/25/2015	1,878.46	1,878.46	0.00
Charges	Duke Invoice P0701182102 + 15%		126.50		
	Duke Invoice P0714551401 + 15%		264.50		
	Duke Invoice P0701182103 + 15%		458.21		
	Duke Invoice P0702866101 + 15%		126.50		
	Duke Invoice P0701525401 + 15%		195.50		
	Duke Invoice P0701033801 + 15%		258.75		
	Duke Invoice P0704224501 + 15%		126.50		
	Duke Invoice P0702832601 + 15%		126.50		
	Duke Invoice P0703832601 + 15%		195.50		
Payment	ACH - 03/25/16	03/29/2016	-1,878.46		
6040022	Invoice	10/13/2015	7,727.28	7,727.28	0.00
Charges	Invoice P0833148201 1.00 @ 6719.37 each		6,719.37		
	Overhead 1.00 @ 1007.91 each		1,007.91		
Credit		05/26/2016	-7,727.28		
6040023	Invoice	10/13/2015	966.00	966.00	0.00
Charges	1502KDL004DEI, P0722537401, 9/30/15		165.00		
	1502KDL004DEI, overhead		24.75		
	1502KDL001DEI, P0722456301, 9/29/15		110.00		
	1502KDL001DEI, overhead		16.50		
	1501KDL009DEI, P0714652701, 9/29/15		225.00		
	1501KDL009DEI, overhead		33.75		
	1501KDL008DEI, P0714652301, 9/29/15		230.00		
	1501KDL008DEI, overhead		34.50		
	1501KDL005DEI, P0714649201, 9/29/15		110.00		
	1501KDL005DEI, overhead		16.50		
Payment	ACH - 03/11/16	03/14/2016	-966.00		
6040514	Invoice	10/29/2015	3,444.05	3,444.05	0.00

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WIN4214



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Invoice		Date	Amount	Adjustments	Balance Due
Charges	1411KDL004DEI, P0701265601, 6/19/15		110.00		
	1410KDL012DEI, P0701310901, 6/9/15		364.83		
	1411KDL006DEI, P0701311801, 6/19/15		110.00		
	1411KDL007DEI, P0701318001, 6/19/15		170.00		
	1411KDL008DEI, P07013224010, 6/19/15		110.00		
	1411KDL009DEI, P0701333401, 6/19/15		170.00		
	1411KDL011DEI, P0701355201, 6/19/15		110.00		
	1411KDL002DEI, P0703804901, 6/19/15		225.00		
	1412KDL004DEI, P0703828001, 6/19/15		170.00		
	1412KDL006DEO, P0703841601, 6/19/15		170.00		
	1412KDL007DEI, P0703957701, 6/19/15		50.00		
	1412KDL009DEI, P0704014101, 6/19/15		345.00		
	1412KDL011DEI, P0704193301, 6/19/15		110.00		
	1412KDL012DEI, P0704200701, 6/19/15		225.00		
	1412KDL014DEI, P0704240501, 6/19/15		110.00		
	1412KDL015DEI, P0704249801, 6/19/15		110.00		
	1501KDL001DEI, P0704821801, 6/19/15		170.00		
	1501KDL002DEI, P0704861401, 6/19/15		165.00		
	15% OVERHEAD		449.22		
Payment	ACH - 03/25/16	03/29/2016	-3,444.05		
6040515	Invoice	10/29/2015	1,351.25	1,351.25	0.00
Charges	1506KDL0211DEI, P0802963301, 10/8/15		1,175.00		
	15% OVERHEAD		176.25		
Payment	ACH - 12/04/15	12/07/2015	-1,351.25		
6040516	Invoice	10/29/2015	810.75	810.75	0.00
Charges	1507KDL0119DEI, P0825347201, 10/8/15		705.00		
	15% OVERHEAD		105.75		
Payment	ACH - 12/04/15	12/07/2015	-810.75		
6040517	Invoice	10/29/2015	1,644.36	1,644.36	0.00
Charges	P0579214301, 10/20/15, Make Ready 2918		1,429.88		
	Virginia, Connorsville, IN				
	15% OVERHEAD		214.48		
Credit		03/18/2016	-1,644.36		
6041282	Invoice	11/23/2015	8,215.51	8,215.51	0.00

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 Overland Park, KS 66214

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Invoice P0867739501		7,143.92		
	Overhead		1,071.59		
Payment	ACH - 03/18/16	03/28/2016	-8,215.51		
6041283	Invoice	11/23/2015	1,334.00	1,334.00	0.00
Charges	Invoice P833148202		1,160.00		
	Overhead		174.00		
Payment	ACH - 03/18/16	03/28/2016	-1,334.00		
6042384	Invoice	02/26/2016	1,420.25	1,420.25	0.00
Charges	Proposal 1511KDL0042DEI; Duke Inv		1,235.00		
	P0920648001				
	15% overhead		185.25		
Payment	ACH - 03/18/16	03/28/2016	-1,420.25		
6042385	Invoice	02/26/2016	57.50	57.50	0.00
Charges	Proposal 1511KDL0035DEI; Duke Inv		50.00		
	P0920537701				
	15% Overhead		7.50		
Payment	ACH - 03/18/16	03/28/2016	-57.50		
6042386	Invoice	02/26/2016	287.50	287.50	0.00
Charges	Cancelled Proposal 1507KDL0030DEI;		50.00		
	Duke Inv P0971093201				
	Cancelled Proposal 1508KDL0319DEI;		50.00		
	Duke Inv P0971413601				
	Cancelled Proposal 1508KDL0320DEI;		50.00		
	Duke Inv P0971420601				
	Cancelled Proposal 1508KDL0321DEI;		50.00		
	Duke Inv P0971473601				
	Cancelled Proposal 1508KDL0322DEI;		50.00		
	Duke Inv P0971476401				
	15% Overhead per contract		37.50		
Payment	ACH - 03/18/16	03/28/2016	-287.50		
6042455	Invoice	03/08/2016	3,165.06	3,165.06	0.00

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Statement of Account

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Proposal 1512KDL0101DEI; Invoice P0939189601		2,752.23		
	Overhead		412.83		
Payment	ACH - 04/08/16	04/11/2016	-3,165.06		
6042462	Invoice	03/09/2016	2,863.50	2,863.50	0.00
Charges	Duke Invoice P0867739502; Proposal 1508KDL0323DEI		2,490.00		
	Overhead		373.50		
Payment	ACH - 04/08/16	04/11/2016	-2,863.50		
6042463	Invoice	03/09/2016	1,150.00	1,150.00	0.00
Charges	Duke Invoice P0873880301; Proposal 1509KDL0125DEI		1,000.00		
	Overhead		150.00		
Payment	10066	04/11/2016	-1,150.00		
6042562	Invoice	03/18/2016	115.00	115.00	0.00
Charges	Permit Coordination Fee - 1304 N 28th St, Lafayette IN; Duke invoice P0998669501		50.00		
	Permit Coordination Fee - 1025 Navarre Dr./3700 Exeter Ct, West Lafayette IN; Proposal 1411KDL0101DEI, Duke Invoice P0704183401		50.00		
	Overhead		15.00		
Payment	ACH - 05/20/16	05/23/2016	-115.00		
6042701	Invoice	03/25/2016	2,179.25	2,179.25	0.00
Charges	Pre-Attachment Eng, Structural Analysis and Permit Coord Fees - Proposal 1511KDL0039DEI, Duke Energy Inv P0923546801, 3/15/16		1,895.00		
	Overhead		284.25		
Payment	ACH - 05/20/16	05/23/2016	-2,179.25		
6043318	Invoice	05/31/2016	2,978.50	2,978.50	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Pre-Attachment Eng, Structural Analysis and Permit Coord Fees - Proposal 1512KDL0101DEI, Duke Energy Inv P0939189602, 4/27/16		2,590.00		
	Overhead		388.50		
Payment	ACH - 06/13/16	06/14/2016	-2,978.50		
6043319	Invoice	05/31/2016	2,294.25	2,294.25	0.00
Charges	Pre-Attachment Eng, Structural Analysis and Permit Coord Fees - Proposal 1512KDL0187DEI, Duke Energy P0952160501, 4/29/16		1,995.00		
	Overhead		299.25		
Payment	ACH - 06/13/16	06/14/2016	-2,294.25		
6043733	Invoice	07/06/2016	1,150.00	1,150.00	0.00
Charges	Duke Energy Invoice		1,000.00		
	15% Markup		150.00		
Payment	ACH - 07/29/16	08/01/2016	-1,150.00		
6043977	Invoice	07/29/2016	727.62	727.62	0.00
Charges	Duke Energy Inv # P0955396001, Proposal 1601KDL0034DEI		632.71		
	15% Markup		94.91		
Payment	ACH - 08/19/16	08/22/2016	-727.62		
6043978	Invoice	07/29/2016	722.84	722.84	0.00
Charges	Duke Energy Inv # P0714651402, Proposal 1501KDL07DEI		628.56		
	15% Markup		94.28		
Payment	ACH - 08/26/16	08/29/2016	-722.84		
6043999	Invoice	08/02/2016	4,378.71	4,378.71	0.00
Charges	Duke Energy Invoice		3,807.57		
	15% Markup		571.14		
Payment	ACH - 08/02/16	08/03/2016	-4,378.71		
6044097	Invoice	08/15/2016	2,857.75	2,857.75	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0955396002, Proposal 1601KDL0034DEI		2,485.00		
	15% Markup		372.75		
Payment	ACH - 09/01/16	09/02/2016	-2,857.75		
6044111	Invoice	08/15/2016	21,260.63	21,260.63	0.00
Charges	Duke Energy Inv # P1045905201, Proposal 1604KDL009DEI		18,487.50		
	15% Markup		2,773.13		
Payment	ACH - 09/01/16	09/02/2016	-21,260.63		
6044179	Invoice	08/19/2016	1,702.00	1,702.00	0.00
Charges	Duke Energy Inv # P0939226001, Proposal 1511KDL0180DEI		1,480.00		
	15% Markup		222.00		
Payment	ACH - 09/01/16	09/02/2016	-1,702.00		
6044180	Invoice	08/19/2016	465.75	465.75	0.00
Charges	Duke Energy Inv # P0979102501, Proposal 1602KDL0089DEI		405.00		
	15% Markup		60.75		
Payment	ACH - 09/01/16	09/02/2016	-465.75		
6044181	Invoice	08/19/2016	2,587.50	2,587.50	0.00
Charges	Duke Energy Inv # P1045889501, Proposal 1603KDL0035DEI		2,250.00		
	15% Markup		337.50		
Payment	ACH - 09/01/16	09/02/2016	-2,587.50		
6044182	Invoice	08/19/2016	2,167.75	2,167.75	0.00
Charges	Duke Energy Inv # P0970083901, Proposal 1601KDL0091DEI		1,885.00		
	15% Markup		282.75		
Payment	ACH - 09/01/16	09/02/2016	-2,167.75		
6044260	Invoice	08/22/2016	3,133.75	3,133.75	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # Proposal P1045901801, Proposal 1603KDL0039DEI		2,725.00		
	15% Markup		408.75		
Payment	ACH - 09/02/16	09/06/2016	-3,133.75		
6044261	Invoice	08/22/2016	2,932.50	2,932.50	0.00
Charges	Duke Energy Inv # P1034724701, Proposal 1604KDL0795DEI		2,550.00		
	15% Markup		382.50		
Payment	ACH - 09/16/16	09/22/2016	-2,932.50		
6044648	Invoice	09/26/2016	3,001.50	3,001.50	0.00
Charges	Duke Energy Inv # P1041982601, Proposal 1605KDL0302DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees		2,610.00		
	15% Markup		391.50		
Payment	ACH - 11/18/16	11/21/2016	-3,001.50		
6044649	Invoice	09/26/2016	2,771.50	2,771.50	0.00
Charges	Duke Energy Inv # P1042009101, Proposal 1605KDL0304DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees		2,410.00		
	15% Markup		361.50		
Payment	ACH - 11/4/16	11/07/2016	-2,771.50		
6044650	Invoice	09/26/2016	1,081.00	1,081.00	0.00
Charges	Duke Energy Inv # P1042387701, Proposal 1605KDL0333DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees		940.00		
	15% Markup		141.00		
Payment	ACH - 10/14/16	10/17/2016	-1,081.00		
6044654	Invoice	09/26/2016	396.75	396.75	0.00
Charges	Duke Energy Inv # P1071113001, Proposal 1606KDL0574DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees		345.00		
	15% Markup		51.75		
Payment	ACH - 10/07/16	10/11/2016	-396.75		
6044655	Invoice	09/26/2016	1,357.00	1,357.00	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1076984601, Proposal 1607PAE0061DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees 15% Markup		1,180.00 177.00		
Credit		10/24/2016	-1,357.00		
6044657	Invoice	09/26/2016	943.00	943.00	0.00
Charges	Duke Energy Inv # P1067200301, Proposal 1606KDL0410DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees 15% Markup		820.00 123.00		
Payment	ACH - 10/14/16	10/17/2016	-943.00		
6044658	Invoice	09/26/2016	2,524.25	2,524.25	0.00
Charges	Duke Energy Inv # P0952482401, Proposal 1512KDL0193DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees 15% Markup		2,195.00 329.25		
Payment	ACH - 10/07/16	10/11/2016	-2,524.25		
6044659	Invoice	09/26/2016	2,507.00	2,507.00	0.00
Charges	Duke Energy Inv # P0970072901, Proposal 1601KDL0089DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees 15% Markup		2,180.00 327.00		
Payment	ACH 11/14/16	11/15/2016	-2,507.00		
6044660	Invoice	09/26/2016	1,057.33	1,057.33	0.00
Charges	Duke Energy Inv # P0970083902, Proposal 1601KDL0091DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees 15% Markup		919.42 137.91		
Payment	ACH - 10/07/16	10/11/2016	-1,057.33		
6044661	Invoice	09/26/2016	2,984.25	2,984.25	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0970083902, Proposal 1601KDL0091DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees		2,595.00		
	15% Markup		389.25		
Payment	ACH - 10/07/16	10/11/2016	-2,984.25		
6044769	Invoice	10/05/2016	2,875.00	2,875.00	0.00
Charges	Duke Energy Inv # P1034743701, Proposal 1604KDL0801DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees for Proposal		2,500.00		
	15% Markup		375.00		
Payment	ACH 10/28/16	10/31/2016	-2,875.00		
6044770	Invoice	10/05/2016	2,173.50	2,173.50	0.00
Charges	Duke Energy Inv # P0955357201, Proposal 1601KDL0025DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees for Proposal		1,890.00		
	15% Markup		283.50		
Payment	ACH 10/28/16	10/31/2016	-2,173.50		
6044771	Invoice	10/05/2016	1,914.75	1,914.75	0.00
Charges	Duke Energy Inv # P0952253701, Proposal 1512KDL0192DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees for Proposal		1,665.00		
	15% Markup		249.75		
Payment	ACH 10/28/16	10/31/2016	-1,914.75		
6044772	Invoice	10/05/2016	3,507.50	3,507.50	0.00
Charges	Duke Energy Inv # P1041972701, Proposal 1605KDL0297DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees for Proposal		3,050.00		
	15% Markup		457.50		
Payment	ACH 10/28/16	10/31/2016	-3,507.50		
6044773	Invoice	10/05/2016	3,260.25	3,260.25	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1067169701, Proposal 1606KDL0408DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees for Proposal		2,835.00		
	15% Markup		425.25		
Payment	ACH 11/14/16	11/15/2016	-3,260.25		
6044817	Invoice	10/13/2016	556.06	556.06	0.00
Charges	Duke Energy Inv # P0955410801, Proposal 1601KDL0035DEI, Make Ready Work, Location of Work: 10 Cool Creek Circle, Westfield, IN		483.53		
	15% Markup		72.53		
Payment	ACH 11/14/16	11/15/2016	-556.06		
6044818	Invoice	10/13/2016	556.06	556.06	0.00
Charges	Duke Energy Inv # P1092903901, Proposal 1608KDL0019DEI, Make Ready Work, Location of Work: 303 East Main Street, Westfield, IN		483.53		
	15% Markup		72.53		
Payment	ACH 11/14/16	11/15/2016	-556.06		
6044958	Invoice	10/24/2016	11,395.30	0.00	11,395.30
Charges	Duke Energy Inv # P1100154301, Proposal 1608KDL0163DEI, Make Ready Work, Location of Work: Carmel, IN		9,908.96		
	15% Markup		1,486.34		
6044959	Invoice	10/24/2016	1,909.00	1,909.00	0.00
Charges	Duke Energy Inv # P0928614701, Proposal 1511KDL0041DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: Along Fry Rd, SR135 A, Greenwood, IN		1,660.00		
	15% Markup		249.00		
Payment	ACH 11/14/16	11/15/2016	-1,909.00		
6044960	Invoice	10/24/2016	57.50	57.50	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1038037601, Proposal 1604KDL0812DEI, Permit Coord Fee, Location of Work: Meridian, E Riverside Rd, E 400 N Huntington, IN		50.00		
	15% Markup		7.50		
Payment	11914	12/19/2016	-57.50		
6044961	Invoice	10/24/2016	2,921.00	2,921.00	0.00
Charges	Duke Energy Inv # P1045908901, Proposal 1604KDL0089DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: Sheek Rd & E Main, Greenwood, IN		2,540.00		
	15% Markup		381.00		
Payment	ACH 11/14/16	11/15/2016	-2,921.00		
6044962	Invoice	10/24/2016	189.75	189.75	0.00
Charges	Duke Energy Inv # P1100130301, Proposal 1608KDL0155DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: W of N Union, N of Maple Park Dr, Westfield, IN		165.00		
	15% Markup		24.75		
Payment	NETTING - 11/25/16	11/28/2016	-189.75		
6044963	Invoice	10/24/2016	1,765.25	1,765.25	0.00
Charges	Duke Energy Inv # P1100167901, Proposal 1608KDL0169DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: Bennett Rd, Carmel, IN		1,535.00		
	15% Markup		230.25		
Payment	ACH 11/14/16	11/15/2016	-1,765.25		
6044964	Invoice	10/24/2016	2,236.75	2,236.75	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1100154302, Proposal 1608KDL0163DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: South Side of W. 146th St, Carmel, IN		1,945.00		
	15% Markup		291.75		
Payment	ACH 11/14/16	11/15/2016	-2,236.75		
6044965	Invoice	10/24/2016	2,696.75	2,696.75	0.00
Charges	Duke Energy Inv # P1105349901, Proposal 1608KDL0235DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: John St, Thornberry Dr, Carmel, IN		2,345.00		
	15% Markup		351.75		
Payment	ACH 11/14/16	11/15/2016	-2,696.75		
6044989	Invoice	10/24/2016	2,852.00	2,852.00	0.00
Charges	Duke Energy Inv # P0955410802, Proposal 1601KDL0035DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 10 Cool Creek Circle, Westfield, IN		2,480.00		
	15% Markup		372.00		
Payment	ACH 11/14/16	11/15/2016	-2,852.00		
6044990	Invoice	10/24/2016	396.75	396.75	0.00
Charges	Duke Energy Inv # P1092903902, Proposal 1608KDL0019DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 303 East Main Street, Westfield, IN		345.00		
	15% Markup		51.75		
Payment	ACH 11/14/16	11/15/2016	-396.75		
6044991	Invoice	10/24/2016	345.00	345.00	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0704183402, Proposal 1412KDL010DEI, Pree-attachment Eng Fee, Location of Work: 1025 Navarre Dr/3700 Exeter Ct, West Lafayette, IN		300.00		
	15% Markup		45.00		
Payment	ACH 12717	01/30/2017	-345.00		
6045688	Invoice	11/21/2016	1,845.75	1,845.75	0.00
Charges	Duke Energy Inv # P0920537702, Proposal 1511KDL0035DEI, Pre-attachment Eng and Structural Analysis, Location of Work: Meadowview, Colonial, Williamsboro, Greenwood, IN		1,605.00		
	15% Markup		240.75		
Payment	ACH 122316	12/30/2016	-1,845.75		
6045690	Invoice	11/21/2016	2,217.80	2,217.80	0.00
Charges	Duke Energy Inv # P0924426201, Proposal 1511KDL0040DEI, Make Ready Work, Location of Work: 1637 Fry Rd, Greenwood, IN		1,928.52		
	15% Markup		289.28		
Payment	ACH 122316	12/30/2016	-2,217.80		
6045691	Invoice	11/21/2016	1,633.00	1,633.00	0.00
Charges	Duke Energy Inv # P0924426202, Proposal 1511KDL0040DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 1637 Fry Rd, Greenwood, IN		1,420.00		
	15% Markup		213.00		
Payment	ACH 122316	12/30/2016	-1,633.00		
6045692	Invoice	11/21/2016	2,581.75	2,581.75	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0928645501, Proposal 1511KDL0133DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: RT 135, Applewood Dr, W Main St, Greenwood, IN		2,245.00		
	15% Markup		336.75		
Payment	ACH 122316	12/30/2016	-2,581.75		
6045693	Invoice	11/21/2016	2,719.75	2,719.75	0.00
Charges	Duke Energy Inv # P0928660501, Proposal 1511KDL0136DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: East and South of Intersection of LO, Greenwood, IN		2,365.00		
	15% Markup		354.75		
Payment	ACH 122316	12/30/2016	-2,719.75		
6045694	Invoice	11/21/2016	2,581.75	2,581.75	0.00
Charges	Duke Energy Inv # P0939194701, Proposal 1512KDL0104DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: Janet Dr, Beech Dr, Pleant Run Dr, Greenwood, IN		2,245.00		
	15% Markup		336.75		
Payment	ACH 122316	12/30/2016	-2,581.75		
6045695	Invoice	11/21/2016	1,627.25	1,627.25	0.00
Charges	Duke Energy Inv # P0939201501, Proposal 1512KDL0107DEI, Dist & Trans Pree-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: Maple, Madison, and Riverside Drive, Greenwood, IN		1,415.00		
	15% Markup		212.25		
Payment	ACH 122316	12/30/2016	-1,627.25		
6045696	Invoice	11/21/2016	1,529.24	1,529.24	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0939207901, Proposal 1512KDL0117DEI, Make Ready Work, Location of Work: 1101 Lawndale, Greenwood, IN		1,329.77		
	15% Markup		199.47		
Payment	ACH 122316	12/30/2016	-1,529.24		
6045697	Invoice	11/21/2016	3,381.00	3,381.00	0.00
Charges	Duke Energy Inv # P0939207902, Proposal 1512KDL0117DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 1101 Lawndale, Greenwood, IN		2,940.00		
	15% Markup		441.00		
Payment	ACH 122316	12/30/2016	-3,381.00		
6045698	Invoice	11/21/2016	2,311.50	2,311.50	0.00
Charges	Duke Energy Inv # P0955366401, Proposal 1601KDL0031DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: Redbud Ln, Redbud Pl, Kensington pa; Greenwood, IN		2,010.00		
	15% Markup		301.50		
Payment	ACH 122316	12/30/2016	-2,311.50		
6045699	Invoice	11/21/2016	3,064.75	3,064.75	0.00
Charges	Duke Energy Inv # P0970059501, Proposal 1601KDL0088DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: Euclid, Greenwood and Valleylane Dr, Greenwood, IN		2,665.00		
	15% Markup		399.75		
Payment	ACH 122316	12/30/2016	-3,064.75		
6045700	Invoice	11/21/2016	2,898.00	2,898.00	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0970098901, Proposal 1601KDL0093DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: State Rd 57, Elberfeld, IN		2,520.00		
	15% Markup		378.00		
Payment	ACH 122316	12/30/2016	-2,898.00		
6045701	Invoice	11/21/2016	3,466.04	3,466.04	0.00
Charges	Duke Energy Inv # P0970098902, Proposal 1601KDL0093DEI, Make Ready Work, Location of Work: 370 Euclid Ave, Elberfeld, IN		3,013.95		
	15% Markup		452.09		
Payment	ACH 122316	12/30/2016	-3,466.04		
6045702	Invoice	11/21/2016	1,895.29	1,895.29	0.00
Charges	Duke Energy Inv # P0974594101, Proposal 1601KDL0267DEI, Make Ready Work, Location of Work: 1354 Fry Rd, Greenwood, IN		1,648.08		
	15% Markup		247.21		
Payment	ACH 122316	12/30/2016	-1,895.29		
6045703	Invoice	11/21/2016	1,702.00	1,702.00	0.00
Charges	Duke Energy Inv # P0974594102, Proposal 1601KDL0267DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: 1354 Fry Rd, Greenwood, IN		1,480.00		
	15% Markup		222.00		
Payment	ACH 122316	12/30/2016	-1,702.00		
6045704	Invoice	11/21/2016	2,852.00	2,852.00	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1034735901, Proposal 1604KDL0799DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: North and South of Elk St and East, Lafayette, IN		2,480.00		
	15% Markup		372.00		
Payment	ACH 123016	01/03/2017	-2,852.00		
6045705	Invoice	11/21/2016	3,053.25	3,053.25	0.00
Charges	Duke Energy Inv # P1041964601, Proposal 1605KDL0293DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: Monon Ave, N 20th St, 21st and 22nd, Lafayette, IN		2,655.00		
	15% Markup		398.25		
Payment	ACH 123016	01/03/2017	-3,053.25		
6045706	Invoice	11/21/2016	2,645.00	2,645.00	0.00
Charges	Duke Energy Inv # P1042355601, Proposal 1605KDL0328DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: N 17th St, Pierce St, N 19th St AN, Lafayette, IN		2,300.00		
	15% Markup		345.00		
Payment	ACH 123016	01/03/2017	-2,645.00		
6045707	Invoice	11/21/2016	6,888.18	6,888.18	0.00
Charges	Duke Energy Inv # P1048426901, Proposal 1604KDL0121DEI, Make Ready Work, Location of Work: 1502 Washington St, Lafayette, IN		5,989.72		
	15% Markup		898.46		
Payment	ACH 123016	01/03/2017	-6,888.18		
6045708	Invoice	11/21/2016	1,012.00	1,012.00	0.00

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Invoice	Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1067103501, Proposal 1606KDL0407DEI, Pre-attachment Eng, Structural Analysis, and Permit Coord Fees, Location of Work: Forest Ave, Main St, E Pearl St, Wate, Greenwood, IN	880.00		
	15% Markup	132.00		
Payment	ACH 012017	01/23/2017	-1,012.00	
6045709	Invoice	11/21/2016	26,710.33	0.00
Charges	Duke Energy Inv # P1100167902, Proposal 1608KDL0169DEI, Make Ready Work, Location of Work: Bennett Rd, Carmel, IN	23,226.37		
	15% Markup	3,483.96		
6045710	Invoice	11/21/2016	23,916.25	0.00
Charges	Duke Energy Inv # P1105349902, Proposal 1608KDL0235DEI, Make Ready Work, Location of Work: John St, Thornberry Dr, Carmel, IN	20,796.74		
	15% Markup	3,119.51		
6045989	Invoice	12/06/2016	1,351.25	1,351.25
Charges	Duke Energy Inv # P1107760502, Proposal 1608KDL0302DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 13622 Oack Ridge Road, Carmel, IN	1,175.00		
	15% Markup	176.25		
Payment	ACH 122316	12/30/2016	-1,351.25	
6045990	Invoice	12/06/2016	1,834.25	1,834.25
Charges	Duke Energy Inv # P1105325201, Proposal 1608KDL0234DEI, Pre-attachment Eng, Work Order Eng and Permit Coord Fees, Location of Work: E of 25A, E 146th St, John St, P Carmel, IN	1,595.00		
	15% Markup	239.25		
Payment	ACH 122316	12/30/2016	-1,834.25	

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Invoice		Date	Amount	Adjustments	Balance Due
6045991	Invoice	12/06/2016	1,696.25	1,696.25	0.00
Charges	Duke Energy Inv # P1105317001, Proposal 1608KDL0233DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: Jeffrey Ct, E 146th St, Rohrer Rd, Carmel, IN		1,475.00		
	15% Markup		221.25		
Payment	ACH 122316	12/30/2016	-1,696.25		
6045992	Invoice	12/06/2016	402.50	402.50	0.00
Charges	Duke Energy Inv # P1067904301, Proposal 1606KDL0453DEI, Pre-attachment Eng and Permit Coord Fees, Location of Work: N Emerson, County Aire Dr, Greenwood, IN		350.00		
	15% Markup		52.50		
Payment	ACH 122316	12/30/2016	-402.50		
6045993	Invoice	12/06/2016	1,161.50	0.00	1,161.50
Charges	Duke Energy Inv # P1067228101, Proposal 1606KDL0412DEI, Pre-attachment Eng and Permit Coord Fees, Location of Work: Tomlinson Rd, Bokeelia Bend Dr, Westfield, IN		1,010.00		
	15% Markup		151.50		
6045994	Invoice	12/06/2016	3,059.00	3,059.00	0.00
Charges	Duke Energy Inv # P1067040101, Proposal 1606KDL0403DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 550 Polk St, Greenwood, IN		2,660.00		
	15% Markup		399.00		
Payment	ACH 122316	12/30/2016	-3,059.00		
6045995	Invoice	12/06/2016	2,179.25	2,179.25	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1048426902, Proposal 1604KDL0121DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 1502 Washington St, Lafayette, IN		1,895.00		
	15% Markup		284.25		
Payment	ACH 122316	12/30/2016	-2,179.25		
6045996	Invoice	12/06/2016	2,794.50	2,794.50	0.00
Charges	Duke Energy Inv # P1042036001, Proposal 1605KDL0307DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: 1818 Underwood St, Lafayette, IN		2,430.00		
	15% Markup		364.50		
Payment	ACH 122316	12/30/2016	-2,794.50		
6045997	Invoice	12/07/2016	948.75	948.75	0.00
Charges	Duke Energy Inv # P0976849901, Proposal 1602DKL0082DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: Westfield Rd, Grassy Branch, Sanibe, Westfield, IN		825.00		
	15% Markup		123.75		
Payment	ACH 122316	12/30/2016	-948.75		
6045998	Invoice	12/07/2016	2,449.50	2,449.50	0.00
Charges	Duke Energy Inv # P0950486401, Proposal 1512KDL0194DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: Catherine St, East St, N Union St, Westfield, IN		2,130.00		
	15% Markup		319.50		
Payment	ACH 122316	12/30/2016	-2,449.50		
6045999	Invoice	12/07/2016	2,719.75	2,719.75	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0955374801, Proposal 1601KDL0033DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: S Howard, W Main St and Averitt, Greenwood, IN		2,365.00		
	15% Markup		354.75		
Payment	ACH 122316	12/30/2016	-2,719.75		
6046000	Invoice	12/07/2016	1,765.25	1,765.25	0.00
Charges	Duke Energy Inv # P0952169401, Proposal 1512KDL0190DEI, Dist & Trans Eng, Structural Analysis and Permit Coord Fees, Location of Work: Madison, Meridian St, Wiley St, NOB, Greenwood, IN		1,535.00		
	15% Markup		230.25		
Payment	ACH 122316	12/30/2016	-1,765.25		
6046002	Invoice	12/07/2016	2,386.25	2,386.25	0.00
Charges	Duke Energy Inv # P0939221201, Proposal 1511KDL0179DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: Shamrock Blvd, Westlea Dr, Westfield, IN		2,075.00		
	15% Markup		311.25		
Payment	ACH 122316	12/30/2016	-2,386.25		
6046003	Invoice	12/07/2016	2,248.25	0.00	2,248.25
Charges	Duke Energy Inv # P0939215001, Proposal 1512KDL0118DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: Fry Rd US 31, Madison, Greenwood, IN		1,955.00		
	15% Markup		293.25		
6046004	Invoice	12/07/2016	2,104.50	2,104.50	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P0939173701, Proposal 1512KDL0085DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: 4535 169th St, 1 P W, 1 P S, Westfield, IN		1,830.00		
	15% Markup		274.50		
Payment	ACH 122316	12/30/2016	-2,104.50		
6046006	Invoice	12/07/2016	2,305.75	0.00	2,305.75
Charges	Duke Energy Inv # P0928890701, Proposal 1511KDL0132DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: 135 N/O Smith Valley, Schooley Dr E, Greenwood, IN		2,005.00		
	15% Markup		300.75		
6046035	Invoice	12/12/2016	556.06	0.00	556.06
Charges	Duke Energy Inv # P1107760501, Proposal 1608KDL0302DEI, Make Ready Work, Location of Work: 13622 Oak Ridge Road, Carmel, IN		483.53		
	15% Markup		72.53		
6046257	Invoice	12/29/2016	2,863.50	2,863.50	0.00
Charges	Duke Energy Inv # P1137520801, Proposal 1610KDL0075DEI, Pre-attachment eng, Structural Analysis and Permit Cord Fees, Location of Work: Industrial Road, Greenwood, IN		2,490.00		
	15% Markup		373.50		
Payment	ACH 011317	01/17/2017	-2,863.50		
6046258	Invoice	12/29/2016	195.50	195.50	0.00

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1137527401, Proposal 1610KDL0078DEI, Pre-attachment eng and Permit Cord Fees, Location of Work: 800 Park Dr, Greenwood, IN		170.00		
	15% Markup		25.50		
Payment	ACH 011317	01/17/2017	-195.50		
6046259	Invoice	12/29/2016	2,610.50	2,610.50	0.00
Charges	Duke Energy Inv # P0920627701, Proposal 1511KDL0038DEI, Pre-attachment eng and Permit Cord Fees, Location of Work: Fry Rd, Colonial Way, and Brookview, Greenwood, IN		2,270.00		
	15% Markup		340.50		
Payment	ACH 011317	01/17/2017	-2,610.50		
6046260	Invoice	12/29/2016	2,501.25	2,501.25	0.00
Charges	Duke Energy Inv # P1042348001, Proposal 1605KDL0312DEI, Pre-attachment eng, Structural Analysis, Work Order Eng and Permit Cord Fees, Location of Work: 1502 Greenbush St, Lafayette, IN		2,175.00		
	15% Markup		326.25		
Payment	ACH 011317	01/17/2017	-2,501.25		
6046261	Invoice	12/29/2016	5,649.15	5,649.15	0.00
Charges	Duke Energy Inv # P1107887601, Proposal 1608KDL0305DEI, Make Ready Work, Location of Work: 37 Crestview Drive, Greenwood, IN		4,912.30		
	15% Markup		736.85		
Payment	ACH 011317	01/17/2017	-5,649.15		
6046262	Invoice	12/29/2016	13,024.73	0.00	13,024.73

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1107818401, Proposal 1608KDL0303DEI, Make Ready Work, Location of Work: 1252 N Meridian St., Greenwood, IN 15% Markup		11,325.85 1,698.88		
6046398	Invoice	01/13/2017	11,686.55	11,686.55	0.00
Charges	Duke Energy Inv # P1042348002, Proposal 1605KDL0312DEI, Make Ready Work, Location of Work: 1502 Greenbush Street, Lafayette, IN 15% Markup		10,162.22 1,524.33		
Payment	ACH 12717	01/30/2017	-11,686.55		
6046624	Invoice	01/26/2017	55,223.99	0.00	55,223.99
Charges	Duke Energy Inv # P1160706101, Make Ready Work, Location of Work: Hanover Part 1 15% Markup		48,020.86 7,203.13		
6046625	Invoice	01/26/2017	2,772.63	0.00	2,772.63
Charges	Duke Energy Inv # P1160717901, Make Ready Work, Location of Work: Hanover Path 2 15% Markup		2,410.98 361.65		
6046626	Invoice	01/26/2017	3,165.78	0.00	3,165.78
Charges	Duke Energy Inv # P1160786501, Make Ready Work, Location of Work: Hanover Group 2 15% Markup		2,752.85 412.93		
6046627	Invoice	01/26/2017	6,730.75	0.00	6,730.75
Charges	Duke Energy Inv # P1160795501, Make Ready Work, Location of Work: Hanover Group 3 15% Markup		5,852.83 877.92		
6046628	Invoice	01/26/2017	24,583.12	0.00	24,583.12

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1160888601, Make Ready Work, Location of Work: Lafayette Part 3 & 4 15% Markup		21,376.63 3,206.49		
6046629	Invoice	01/26/2017	16,799.42	0.00	16,799.42
Charges	Duke Energy Inv # P1160901201, Make Ready Work, Location of Work: Lafayette Phase 10 Part 1 & 2 15% Markup		14,608.19 2,191.23		
6046630	Invoice	01/26/2017	15,891.10	0.00	15,891.10
Charges	Duke Energy Inv # P1160909801, Make Ready Work, Location of Work: Lafayette Phase 12 15% Markup		13,818.35 2,072.75		
6046631	Invoice	01/26/2017	1,111.72	0.00	1,111.72
Charges	Duke Energy Inv # P1160964901, Make Ready Work, Location of Work: Lafayette Phase 4 Part 1 Rev 15% Markup		966.71 145.01		
6046632	Invoice	01/26/2017	158,935.98	0.00	158,935.98
Charges	Duke Energy Inv # P1160969801, Make Ready Work, Location of Work: Lafayette Phase 8 Part 1 15% Markup		138,205.20 20,730.78		
6046633	Invoice	01/26/2017	152,803.04	0.00	152,803.04
Charges	Duke Energy Inv # P1160979101, Make Ready Work, Location of Work: Lafayette Phase 3 Part 2 15% Markup		132,872.21 19,930.83		
6046634	Invoice	01/26/2017	12,015.57	0.00	12,015.57

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Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1160985601, Make Ready Work, Location of Work: Lafayette Phase 2 Part 3 15% Markup		10,448.32 1,567.25		
6046635	Invoice	01/26/2017	3,548.88	0.00	3,548.88
Charges	Duke Energy Inv # P1160990501, Make Ready Work, Location of Work: Lafayette Backbone Part 5 15% Markup		3,085.98 462.90		
6046636	Invoice	01/26/2017	60,838.44	0.00	60,838.44
Charges	Duke Energy Inv # P1160998201, Make Ready Work, Location of Work: Lafayette Group 1 15% Markup		52,902.99 7,935.45		
6046637	Invoice	01/26/2017	34,029.75	0.00	34,029.75
Charges	Duke Energy Inv # P1161009701, Make Ready Work, Location of Work: Lafayette Group 3 15% Markup		29,591.09 4,438.66		
6046638	Invoice	01/26/2017	99,597.22	0.00	99,597.22
Charges	Duke Energy Inv # P1161020301, Make Ready Work, Location of Work: Lafayette Group 4 15% Markup		86,606.28 12,990.94		
6046639	Invoice	01/26/2017	57,937.83	0.00	57,937.83
Charges	Duke Energy Inv # P1161073501, Make Ready Work, Location of Work: Lafayette Group 2 15% Markup		50,380.72 7,557.11		
6046640	Invoice	01/26/2017	81,385.19	0.00	81,385.19

For inquiries,
 please call (501) 748-7048.

Please Return One Copy With Remittance

Please Include Invoice Number on your check or money order. Late payment charges (LPCs) will be assessed on any unpaid balance.

WIN4239



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:
 Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1161082901, Make Ready Work, Location of Work: Lafayette Group 5 15% Markup		70,769.73 10,615.46		
6046641	Invoice	01/26/2017	56,225.46	0.00	56,225.46
Charges	Duke Energy Inv # P1161096501, Make Ready Work, Location of Work: Lafayette Group 7 15% Markup		48,891.70 7,333.76		
6046642	Invoice	01/26/2017	63,584.42	0.00	63,584.42
Charges	Duke Energy Inv # P1161104301, Make Ready Work, Location of Work: Lafayette Group 6 15% Markup		55,290.80 8,293.62		
6046643	Invoice	01/26/2017	44,562.47	0.00	44,562.47
Charges	Duke Energy Inv # P1161130301, Make Ready Work, Location of Work: Lafayette Group 8 15% Markup		38,749.97 5,812.50		
6046644	Invoice	01/26/2017	25,086.11	0.00	25,086.11
Charges	Duke Energy Inv # P1161140101, Make Ready Work, Location of Work: Lafayette Group 11 15% Markup		21,814.01 3,272.10		
6046645	Invoice	01/26/2017	721.23	0.00	721.23
Charges	Duke Energy Inv # P1161174301, Make Ready Work, Location of Work: Lafayette Group 12 15% Markup		627.16 94.07		
6046646	Invoice	01/26/2017	18,321.00	0.00	18,321.00

For inquiries,
 please call (501) 748-7048.

Please Return One Copy With Remittance

Please Include Invoice Number on your check or money order. Late payment charges (LPCs) will be assessed on any unpaid balance.

WIN4240



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:

Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice		Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1161262401, Make Ready Work, Location of Work: Lafayette Group 14 15% Markup		15,931.30 2,389.70		
6046647	Invoice	01/26/2017	30,208.15	0.00	30,208.15
Charges	Duke Energy Inv # P1161272701, Make Ready Work, Location of Work: Lafayette Phase 2 Part 1 & 2 Credits due to Previous Payments exceeding Lafayette Job Costs 15% Markup		191,116.56 -164,848.59 3,940.18		
6046648	Invoice	01/26/2017	75,264.88	0.00	75,264.88
Charges	Duke Energy Inv # P1161300201, Make Ready Work, Location of Work: Lafayette Phase 7 Part 1 & 2 15% Markup		65,447.72 9,817.16		
6046649	Invoice	01/26/2017	14,719.23	0.00	14,719.23
Charges	Duke Energy Inv # P1161311201, Make Ready Work, Location of Work: Lafayette Phase 11 Part 1 -4 15% Markup		12,799.33 1,919.90		
6046660	Invoice	01/31/2017	238.63	0.00	238.63
Charges	Duke Energy Inv # P0952169402, Proposal 1512KDL0190DEI, Administration and Engineering Fee, Location of Work: Madison, Meridian St, Wiley St, NOB Greenwood, IN 15% Markup		207.50 31.13		
6046661	Invoice	01/31/2017	678.50	0.00	678.50

For inquiries,
 please call (501) 748-7048.

Please Return One Copy With Remittance

Please Include Invoice Number on your check or money order. Late payment charges (LPCs) will be assessed on any unpaid balance.

WIN4241



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
 8837 Bond Street
 Overland Park, KS 66214

Please Make Your Check Payable To:
 Windstream Communications, Inc.
 Attn: Revenue Acctg - Misc Billing
 P O Box 18317
 Little Rock AR 72222

Invoice	Date	Amount	Adjustments	Balance Due
Charges	Duke Energy Inv # P1069970301, Proposal 1606KDL0513DEI, Pre-attachment Eng Permit Coord Fees, Location of Work: Elyse Lane, 146th St, Westfield, IN 15% Markup	590.00 88.50		
6046662	Invoice 01/31/2017	3,202.75	0.00	3,202.75
Charges	Duke Energy Inv # P1048422501, Proposal 1604KDL0120DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: S 2nd St, Owen St, Holloway Dr, Lafayette, IN 15% Markup	2,785.00 417.75		
6046663	Invoice 01/31/2017	3,168.25	0.00	3,168.25
Charges	Duke Energy Inv # P1034707101, Proposal 1604KDL0791DEI, Pre-attachment Eng, Structural Analysis and Permit Coord Fees, Location of Work: Whitcom Ave, Arlington, Dearborn, Vin, Lafayette, IN 15% Markup	2,755.00 413.25		
6046664	Invoice 01/31/2017	2,593.25	0.00	2,593.25
Charges	Duke Energy Inv # P1129195701, Proposal 1609KDL0442DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 533 Park Drive, Greenwood, IN 15% Markup	2,255.00 338.25		
6046665	Invoice 01/31/2017	2,518.50	0.00	2,518.50
Charges	Duke Energy Inv # P1107887602, Proposal 1608KDL0305DEI, Pre-attachment Eng, Structural Analysis, Work Order Eng and Permit Coord Fees, Location of Work: 37 Crestview Drive, Greenwood, IN 15% Markup	2,190.00 328.50		
6046666	Invoice 01/31/2017	3,047.50	0.00	3,047.50

For inquiries,
 please call (501) 748-7048.

Please Return One Copy With Remittance

Please Include Invoice Number on your check or money order. Late payment charges (LPCs) will be assessed on any unpaid balance.

WIN4242



Statement of Account

As of 01/31/2017

Cinergy Metronet CMN-RUS,INC
8837 Bond Street
Overland Park, KS 66214

Please Make Your Check Payable To:
Windstream Communications, Inc.
Attn: Revenue Acctg - Misc Billing
P O Box 18317
Little Rock AR 72222

Table with 5 columns: Invoice, Date, Amount, Adjustments, Balance Due. It lists charges from Duke Energy with amounts of 2,650.00 and 397.50.

Summary row with columns: Total, 6,125,316.36, 4,912,487.45, 1,212,828.91

For inquiries, please call (501) 748-7048.

Please Return One Copy With Remittance

Please Include Invoice Number on your check or money order. Late payment charges (LPCs) will be assessed on any unpaid balance.

WIN4243

Duke Project Description	Duke Invoice #
Hanover Part 1	P1160706101
Hanover Path 2	P1160717901
Hanover Group 2	P1160786501
Hanover Group 3	P1160795501
Lafayette Part 3 & 4	P1160888601
Lafayette Phase 10 Part 1 & 2	P1160901201
Lafayette Phase 12	P1160909801
Lafayette Phase 4 Part 1 Rev	P1160964901
Lafayette Phase 8 Part 1	P1160969801
Lafayette Phase 3 Part 2	P1160979101
Lafayette Phase 2 Part 3	P1160985601
Lafayette Backbone Part 5	P1160990501
Lafayette Group 1	P1160998201
Lafayette Group 3	P1161009701
Lafayette Group 4	P1161020301
Lafayette Group 2	P1161073501
Lafayette Group 5	P1161082901
Lafayette Group 7	P1161096501
Lafayette Group 6	P1161104301
Lafayette Group 8	P1161130301
Lafayette Group 11	P1161140101
Lafayette Group 12	P1161174301
Lafayette Group 14	P1161262401
Lafayette Phase 2 Part 1 & 2	P1161272701
Lafayette Phase 7 Part 1 & 2	P1161300201
Lafayette Phase 11 Part 1 -4	P1161311201

Amount

48020.86
2410.98
2752.85
5852.83
21376.63
14608.19
13818.35
966.71
138205.20
132872.21
10448.32
3085.98
52902.99
29591.09
86606.28
50380.72
70769.73
48891.70
55290.80
38749.97
21814.01
627.16
15931.30
191116.56
65447.72
12799.33
\$1,135,338.47

From: McClure, Joseph W
Sent: Tuesday, March 14, 2017 11:46 AM
To: ap@qservicesco.com
Cc: Sandra Gill
Subject: FW: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)
Attachments: True-up_to_MARS_Inv_6046647.xlsx; 6047094.pdf; 6023923_Paid_Already.pdf

Good morning,

Attached is a true-up invoice (invoice # 6047094) related to the invoices initially sent in this email thread. The reason for the need of a credit was that the initial Duke Energy invoice amount was assumed to have been given a 15% markup. Our research indicated that this was not the case. The attached spreadsheet shows how the true-up was calculated.

Let me know if you have any questions.

Thanks,

Joe

From: McClure, Joseph W
Sent: Thursday, February 23, 2017 4:18 PM
To: 'Sandra Gill' <Sandra.Gill@metronetinc.com>
Cc: Nicole Sugg <Nicole.Sugg@metronetinc.com>; Robert Thurman <Robert.Thurman@metronetinc.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Hi Sandy,

I pushed back to Duke asking for itemized costs and/or some sort of explanation of what appears to be costs exceeding the proposal amounts (after I was told by Duke that they do not provide itemized costs for any customer). I highlighted the age of the incurred expenses, the total amount of the incurred expenses, and what appears to be significant cost overruns (if the initial invoice paid was the proposal amount, again, the age of the expenses puts these pre-spans).

I will let you know their response.

Thanks,

Joe

From: Sandra Gill [<mailto:Sandra.Gill@metronetinc.com>]
Sent: Thursday, February 23, 2017 3:39 PM
To: McClure, Joseph W <Joseph.W.Mcclure@windstream.com>
Cc: Nicole Sugg <Nicole.Sugg@metronetinc.com>; Robert Thurman <Robert.Thurman@metronetinc.com>
Subject: FW: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)
Importance: High

Hey Joe!

Have you had a chance to look at this and get me any additional details? I know we are on a time crunch on getting this resolved.

Please get me something as soon as you can.

Thanks!

Sandy Gill

Information Coordinator

From: Sandra Gill
Sent: Tuesday, February 21, 2017 2:22 PM
To: 'Mcclure, Joseph W' <Joseph.W.Mcclure@windstream.com>
Cc: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Subject: FW: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)
Importance: High

Joe,

I have been looking through these invoices and have gone back through the old invoices. It appears that the amount we paid is the amount we agreed to. I need you or Duke to provide me with a detailed list of what the difference is in the invoices, please.

Thank you!

Sandy Gill

Information Coordinator

From: Mcclure, Joseph W [<mailto:Joseph.W.Mcclure@windstream.com>]
Sent: Tuesday, January 31, 2017 2:55 PM
To: Sandra Gill <Sandra.Gill@metronetinc.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Sandra,

I sent what I received from Duke. Attached is the customer statement for Metronet for these types of invoices. The process seemed to change over time, but I see a lot of Duke PO#'s listed. The number next to the payment should be a check number or some kind of identifier that you may be able to track on your side. The PO#'s could be matched against the list of PO's that Duke provided.

Unfortunately, these charges for proposals were pre-SPANS. There is no effective way to search for the communications for the relevant proposals without some unique identifier attached to each invoice. Though, I believe the point of the Duke invoices is to pass along the charges that were in excess of the estimate on the proposal.

Let me know what concerns you have and if I could provide anything else.

Thanks,

Joe

From: Sandra Gill [<mailto:Sandra.Gill@metronetinc.com>]
Sent: Monday, January 30, 2017 11:38 AM
To: McClure, Joseph W <Joseph.W.Mcclure@windstream.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Joe,

I am really struggling with the Lafayette and Hanover. Do you happen to know who would have sent you the invoices for approval to pay what has already been paid?

Thanks!

Sandy Gill
Information Coordinator

From: McClure, Joseph W [<mailto:Joseph.W.Mcclure@windstream.com>]
Sent: Friday, January 27, 2017 9:46 AM
To: Sandra Gill <Sandra.Gill@metronetinc.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Sandra,

Sorry about that. I sent you the template I use for invoice generation. Attached is the list that was compiled of the old/new Duke invoices. It contains no new info, but it may help you in your analysis.

Thanks,

Joe

From: Sandra Gill [<mailto:Sandra.Gill@metronetinc.com>]
Sent: Friday, January 27, 2017 9:38 AM
To: McClure, Joseph W <Joseph.W.Mcclure@windstream.com>
Subject: RE: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Joe,

Thanks for all of the information! However, when I open the spreadsheet, it appears to be blank. Am I missing something?

Thanks again!

Sandy Gill
Information Coordinator

From: McClure, Joseph W [<mailto:Joseph.W.Mcclure@windstream.com>]
Sent: Friday, January 27, 2017 7:48 AM
To: AP <ap@qservicesco.com>
Cc: Sandra Gill <Sandra.Gill@metronetinc.com>; Sanchez, Sherry H <Sherry.Sanchez@windstream.com>
Subject: WIN – Cinergy Metronet (Duke Passthrough) - Invoice(s)

Good morning,

Please see the attached invoices. I have also attached a spreadsheet with a list of “new” and “old” Duke invoices that the Windstream invoices are based. Please note, the credit detailed on the cover sheet on the Lafayette jobs were applied to Windstream invoice # 6046647.

I asked Duke to itemize the costs of these make-ready invoices; however, I was told that they do not provide that information. Please let me know if there is anything you would like me to provide.

Thanks,

Joe McClure
Analyst I – OSP P&E Administration and Support
Engineering Leases, OpEx & Revenue Support
(501)-748-7763



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Windstream KDL, LLC

P O Box 18317
Little Rock, AR 72222

INVOICE

Invoice Number: 6023923

Invoice Date: 07/18/2012

Customer # Cinergy Metrone	Customer Reference West-5303	Account Number 950000000.11845.5000	Due By 07/18/2012	Amount Due \$134,738.00
--------------------------------------	--	---	-----------------------------	-----------------------------------

Please Make Your Check Payable To:

Windstream Communications, LLC

Attn: Misc Billing

P O Box 18317

Little Rock, AR 72222

Cinergy Metronet CMN-RUS,INC
AP/Laura Bruce
8837 Bond Street
Overland Park,KS 66214

For questions regarding this invoice, please contact
Annette Repass at 330-650-7103
Email:annette.repass@windstream.com .

Invoice Duke InvP0269583201 Pass Through Charges 1-4-2012.
Comment Invoice for work or services performed at: Connersville.

Description	Amount
Pass Through	134,738.00
Total Due	\$134,738.00

Please Return One Copy With Payment

Please include Invoice Number on your check or money order. Late payment charges will be assessed on any unpaid balance. WIN4250

Windstream KDL, LLC

P O Box 18317
Little Rock, AR 72222

INVOICE

Invoice Number: 6047094

Invoice Date: 03/14/2017

Customer # Cinergy Metrone	Customer Reference 6046647	Account Number 950000000.11845.5000	Due By 04/13/2017	Amount Due \$20,210.70
--------------------------------------	--------------------------------------	---	-----------------------------	----------------------------------

Please Make Your Check Payable To:

Windstream Communications, LLC

Attn: Misc Billing

P O Box 18317

Little Rock, AR 72222

Cinergy Metronet CMN-RUS,INC
ap@qservicesco.com
8837 Bond Street
Overland Park,KS 66214

For questions regarding this invoice, please contact Joe McClure at 501-748-7763
Email:joseph.w.mcclure@windstream.com .

Invoice Comment True-up to Windstream invoice # 6046647.
Bill Calc Spreadsheet Attached
Initial Charged Amount \$30,208.17
Corrected Bill Calc Amount: \$50,418.87

Description	Amount
True-up Amount	20,210.70
Total Due	\$20,210.70

Please Return One Copy With Payment

Please include Invoice Number on your check or money order. Late payment charges will be assessed on any unpaid balance. WIN4251

Invoice # 6046647

Duke Energy Inv # P1161272701 (Lafayette Phase 2 Part 1 & 2)	\$	191,116.56
Lafayette Phase 6 Part 1	\$	(2,742.97)
Lafayette Phase 5 Part 1 Rev 3	\$	(3,291.66)
Lafayette Phase 3 Part 1	\$	(8,763.90)
Lafayette Phase 1	\$	(15,312.06)
Connersville Phase 1-5	\$	(134,738.00)
Subtotal	\$	26,267.97
15% Markup	\$	3,940.20
Total	\$	30,208.17

Duke Energy Inv # P1161272701 (Lafayette Phase 2 Part 1 & 2)

Lafayette Phase 6 Part 1

Lafayette Phase 5 Part 1 Rev 3

Lafayette Phase 3 Part 1

Lafayette Phase 1

Subtotal 1

15% Markup

Subtotal 2

Connersville Phase 1-5

Total

True-up Amount (Invoice # 6047094)

Corrected Calculation for Invoice # 6046646

\$	191,116.56
\$	(2,742.97)
\$	(3,291.66)
\$	(8,763.90)
\$	(15,312.06)
<hr/>	
\$	161,005.97
\$	24,150.90
<hr/>	
\$	185,156.87
\$	(134,738.00)
<hr/>	
\$	50,418.87
\$	20,210.70



November 17, 2016

Windstream Communications (KDL)
Poles
P. O. Box 25410
Little Rock, AR 72221

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Hanover job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Hanover Part 1	\$69,461.86	\$21,441.00	P1160706101	\$48,020.86
Hanover Path 2	\$21,214.98	\$18,804.00	P1160717901	\$2,410.98
Hanover Group 2	\$17,386.85	\$14,634.00	P1160786501	\$2,752.85
Hanover Group 3	\$47,188.83	\$41,336.00	P1160795501	\$5,852.83
			PAY THIS AMOUNT	\$59,037.52

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh

NOV 28 2016

WIN4255



INVOICE

Invoice: P1160706101
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016
 Amount Due: \$48,020.86

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PART 1	\$48,020.86
Amount Due:			\$48,020.86

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:
 Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:
 Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160706101
 Corporation Code: 75115
 Please Pay By: 12/15/2016
 Customer ID: 00083509
 Total Amount Due: \$48,020.86

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303730363130310000800048020860



INVOICE

Invoice: P1160717901
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016
 Amount Due: **\$2,410.98**

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER PATH 2	\$2,410.98
Amount Due:			<u>\$2,410.98</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160717901

Corporation Code: 75115
 Please Pay By: 12/15/2016
 Customer ID: 00083509
 Total Amount Due: **\$2,410.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303731373930310000100002410982



INVOICE

Invoice: P1160786501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Customer ID: 000107473
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016
 Amount Due: **\$2,752.85**

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 2	\$2,752.85
Amount Due:			\$2,752.85

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160786501

Corporation Code: 75115
 Please Pay By: 12/15/2016
 Customer ID: 000107473
 Total Amount Due: **\$2,752.85**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 17771

Amount Enclosed



1616313136303738363530310000900002752859



INVOICE

Invoice: P1160795501
 Invoice Date: 11/15/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/15/2016
 Amount Due: **\$5,852.83**

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/14/2016	Customer contribution HANOVER GROUP 3	\$5,852.83
Amount Due:			<u>\$5,852.83</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160795501

Corporation Code: 75115
 Please Pay By: 12/15/2016
 Customer ID: 00083509
 Total Amount Due: **\$5,852.83**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303739353530310000200005852838



INVOICE

Invoice: P0492862901
 Invoice Date: 6/27/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/27/2014

Amount Due: \$21,441.00

Invoice for work or services performed at: CMR-KDL/Metronet Rte - Hanover Path
 HANOVER IN

Hanover Part 1

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/26/2014	Customer contribution CHANGE OUT 2 POLES	\$21,441.00
Amount Due:			\$21,441.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0492862901

Corporation Code: 75115
 Please Pay By: 7/27/2014
 Customer Number: 00070740
 Total Amount Due: **\$21,441.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4260

1616303439323836323930310000400021441007



INVOICE

Invoice: P0572444501
 Invoice Date: 8/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/31/2014

Amount Due: \$18,804.00

Invoice for work or services performed at: CMR - Hanover PATH 2 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/31/2014	Customer contribution INST 1 POLE, PEDESTAL AND SECONDARY	\$18,804.00
Amount Due:			\$18,804.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0572444501

Corporation Code:

75115

Please Pay By:

8/31/2014

Customer Number:

00070740

Total Amount Due:

\$18,804.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4261

1616303537323434343530310000600018804000



INVOICE

Invoice: P0578173601
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$14,634.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 2
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 1 POLES, OH & UG SECONDARY	\$14,634.00
Amount Due:			\$14,634.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0578173601

Corporation Code:

75115

Please Pay By:

9/6/2014

Customer Number:

00070740

Total Amount Due:

\$14,634.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4262

1616303537383137333630310000000014634002



INVOICE

Invoice: P0599304801
 Invoice Date: 8/7/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/6/2014

Amount Due: \$42,121.00

Invoice for work or services performed at: KDL/Metronet Rte - Hanover Group 3
 HANOVER IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/06/2014	Customer contribution INST 7 POLES	\$42,121.00
Amount Due:			\$42,121.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0599304801

Corporation Code:

75115

Please Pay By:

9/6/2014

Customer Number:

00070740

Total Amount Due:

\$42,121.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4263

1616303539393330343830310000400042121002



November 30, 2016

Windstream Communications
 Attn: Poles
 P. O. Box 25410
 Little Rock, AR 72221

DEC 06 2016

Dear Sir or Madame:

Please find enclosed the invoices reflecting the final charges for make ready work for the Lafayette job. The table below lists the name of the projects, the total cost of the job and any payments that were received for the project. Listed are refunds that were subtracted from the invoices. Also listed is a credit for a payment of \$134,738.00 that we received for the Connersville Phase 1 – 5 job that Windstream was invoiced for and the invoice was paid, but the job was cancelled.

PROJECT	TOTAL COST	PAYMENT	NEW INVOICE #	TOTAL DUE
Lafayette Part 3 & 4	\$104,246.63	\$82,870.00	P1160888601	\$21,376.63
Lafayette Phase 10 Part 1 & 2	\$267,771.29	\$253,163.10	P1160901201	\$14,608.19
Lafayette Phase 12	\$46,565.35	\$32,747.00	P1160909801	\$13,818.35
Lafayette Phase 4 Part 1 Rev	\$78,485.71	\$77,519.00	P1160964901	\$966.71
Lafayette Phase 8 Part 1	\$171,895.20	\$33,690.00	P1160969801	\$138,205.20
Lafayette Phase 3 Part 2	\$202,950.21	\$70,078.00	P1160979101	\$132,872.21
Lafayette Phase 2 Part 3	\$38,382.91	\$27,934.59	P1160985601	\$10,448.32
Lafayette Backbone Part 5	\$10,172.98	\$7,087.00	P1160990501	\$3,085.98
Lafayette Group 1	\$66,790.99	\$13,888.00	P1160998201	\$52,902.99
Lafayette Group 3	\$84,548.09	\$54,957.00	P1161009701	\$29,591.09
Lafayette Group 4	\$172,813.28	\$86,207.00	P1161020301	\$86,606.28
Lafayette Group 2	\$88,404.72	\$38,024.00	P1161073501	\$50,380.72
Lafayette Group 5	\$120,769.73	\$50,000.00	P1161082901	\$70,769.73
Lafayette Group 7	\$101,640.70	\$52,749.00	P1161096501	\$48,891.70
Lafayette Group 6	\$142,067.80	\$86,777.00	P1161104301	\$55,290.80
Lafayette Group 8	\$88,226.97	\$49,477.00	P1161130301	\$38,749.97
Lafayette Group 11	\$57,016.01	\$35,202.00	P1161140101	\$21,814.01
Lafayette Group 12	\$66,188.16	\$65,561.00	P1161174301	\$627.16
Lafayette Group 14	\$138,172.30	\$122,241.00	P1161262401	\$15,931.30
Lafayette Phase 2 Part 1 & 2	\$476,012.26	\$284,895.70	P1161272701	\$191,116.56
Lafayette Phase 7 Part 1 & 2	\$307,343.72	\$241,896.00	P1161300201	\$65,447.72
Lafayette Phase 11 Part 1 - 4	\$310,616.33	\$297,817.00	P1161311201	\$12,799.33
Lafayette Phase 6 Part 1	\$45,018.03	\$47,761.00	WIN4264	\$2,742.97

Lafayette Phase 5 Part 1 Rev 3	\$146,147.34	\$149,439.00		-\$3,291.66
Lafayette Phase 3 Part 1	\$108,419.10	\$117,183.00		-\$8,763.90
Lafayette Phase 1	\$83,970.94	\$99,283.00		-\$15,312.06
Connersville Phase 1-5 JOB CANCELLED - INVOICE PAID BY WINDSTREAM	-\$134,738.00			-\$134,738.00
			PAY THIS AMOUNT	\$911,452.36

ALL CHARGES ON THESE INVOICES ARE ACTUAL DOLLARS MINUS THE ESTIMATED AMOUNT PREVIOUSLY BILLED

If there are any questions concerning these invoices, please feel free to contact me at:

Duke Energy
390 N. Main Street
Martinsville, IN 46151
1-765-349-4012 (Office)
1-317-753-8177 (Cell)

Sincerely,

Tim Umbaugh



INVOICE

Invoice: P1160888601
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$21,376.63**

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PART 3 & 4	\$21,376.63
Amount Due:			\$21,376.63

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160888601

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$21,376.63

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303838383630310000000021376639



INVOICE

Invoice: P1160901201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$14,608.19

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 10 PART 1 & 2	\$14,608.19
Amount Due:			\$14,608.19

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160901201

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$14,608.19

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930313230310000400014608192



INVOICE

Invoice: P1160909801
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$13,818.35**

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 12	\$13,818.35
Amount Due:			<u>\$13,818.35</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160909801
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$13,818.35**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303930393830310000900013818355



INVOICE

Invoice: P1160964901
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$966.71

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 4 PART 1 REV	\$966.71
Amount Due:			\$966.71

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate Invoice number on check. ↓

Payment Coupon

Please make check payable to: _____

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions: _____

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160964901

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$966.71

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936343930310000100000966711



INVOICE

Invoice: P1160969801
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107039
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$138,205.20**

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 8 PART 1	\$138,205.20
Amount Due:			<u>\$138,205.20</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160969801

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 000107039
 Total Amount Due: **\$138,205.20**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303936393830310000800138205207



INVOICE

Invoice: P1160979101
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$132,872.21

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 3 PART 2	\$132,872.21
Amount Due:			\$132,872.21

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160979101

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$132,872.21

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303937393130310000100132872210



INVOICE

Invoice: P1160985601
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$10,448.32

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 3	\$10,448.32
Amount Due:			\$10,448.32

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160985601

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$10,448.32**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303938353630310000300010448328



INVOICE

Invoice: P1160990501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Customer ID: 000107706
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$3,085.98**

Invoice for work or services performed at: Lafayette Backbone Part 5 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE BACKBONE PART 5	\$3,085.98
Amount Due:			<u>\$3,085.98</u>

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1160990501

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 000107706
 Total Amount Due: **\$3,085.98**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 (KDL)
 P O BOX 25410
 POLES
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939303530310000200003085988



INVOICE

Invoice: P1160998201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$52,902.99

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 1	\$52,902.99
Amount Due:			\$52,902.99

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1160998201

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$52,902.99

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136303939383230310000000052902991



INVOICE

Invoice: P1161009701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$29,591.09

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 3	\$29,591.09
Amount Due:			\$29,591.09

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161009701

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$29,591.09

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313030393730310000000029591091



INVOICE

Invoice: P1161020301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$86,606.28

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 4	\$86,606.28
Amount Due:			\$86,606.28

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161020301

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$86,606.28

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313032303330310000000086606283



INVOICE

Invoice: P1161073501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$50,380.72**

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$50,380.72
Amount Due:			\$50,380.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161073501

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$50,380.72**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313037333530310000700050380726



INVOICE

Invoice: P1161082901
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$70,769.73

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 5	\$70,769.73
Amount Due:			\$70,769.73

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161082901

Corporation Code: 75115

Please Pay By: 12/22/2016

Customer ID: 00083509

Total Amount Due: \$70,769.73

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1116313136313038323930310000600070769735



INVOICE

Invoice: P1161096501
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$48,891.70

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$48,891.70
Amount Due:			\$48,891.70

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161096501
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$48,891.70

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313039363530310000700048891705



INVOICE

Invoice: P1161104301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$55,290.80

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 6	\$55,290.80
Amount Due:			\$55,290.80

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161104301
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$55,290.80

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313130343330310000800055290806



INVOICE

Invoice: P1161130301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$38,749.97

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution	\$38,749.97
Amount Due:			\$38,749.97

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161130301

Corporation Code:

75115

Please Pay By:

12/22/2016

Customer ID:

00083509

Total Amount Due:

\$38,749.97

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313133303330310000400038749978



INVOICE

Invoice: P1161140101
Invoice Date: 11/22/2016
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer ID: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 12/22/2016
Amount Due: \$21,814.01

Invoice for work or services performed at: Lafayette Group 11 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 11/21/2016, Customer contribution LAFAYETTE GROUP 11, \$21,814.01. Total Amount Due: \$21,814.01

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P1161140101
Corporation Code: 75115
Please Pay By: 12/22/2016
Customer ID: 00083509
Total Amount Due: \$21,814.01

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



161631313631313430313031000000021814016



INVOICE

Invoice: P1161174301
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: **\$627.16**

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 12	\$627.16
Amount Due:			\$627.16

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161174301
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$627.16**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313137343330310000500000627160



INVOICE

Invoice: P1161262401
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$15,931.30

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE GROUP 14	\$15,931.30
Amount Due:			\$15,931.30

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to: ACH Instructions:
 Duke Energy Wells Fargo - Indiana
 PO Box 602566 121000248
 Charlotte NC 28260-2566 Duke Energy
 002000057639545

Invoice Number: P1161262401
 Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$15,931.30

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313236323430310000000015931302



INVOICE

Invoice: P1161272701
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016

Amount Due: \$191,116.56

Invoice for work or services performed at: Lafayette Phase 2 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 2 PART 1 & 2	\$191,116.56
Amount Due:			\$191,116.56

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161272701

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: **\$191,116.56**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313237323730310000800191116569



INVOICE

Invoice: P1161300201
 Invoice Date: 11/22/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/22/2016
 Amount Due: \$65,447.72

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/21/2016	Customer contribution LAFAYETTE PHASE 7 PART 1 & 2	\$65,447.72
Amount Due:			\$65,447.72

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P1161300201

Corporation Code: 75115
 Please Pay By: 12/22/2016
 Customer ID: 00083509
 Total Amount Due: \$65,447.72

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313330303230310000600065447720



INVOICE

Invoice: P1161311201
 Invoice Date: 11/29/2016
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer ID: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/29/2016

Amount Due: \$12,799.33

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
 LAFAYETTE IN

For billing questions, please call Teegarden, Marlene Sue at 513/287-5349

Line	Date of Charge	Description	Net Amount
1	11/22/2016	Customer contribution LAFAYETTE PHASE 11 PART 1-4	\$12,799.33
Amount Due:			\$12,799.33

TO AVOID SERVICE INTERRUPTION, PLEASE DO NOT SEND MONTHLY UTILITY ACCOUNT PAYMENTS TO THIS ADDRESS

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number:

P1161311201

Corporation Code:

75115

Please Pay By:

12/29/2016

Customer ID:

00083509

Total Amount Due:

\$12,799.33

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616313136313331313230310000900012799330



INVOICE

Invoice: P0385166401
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$2,553.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
LAFAYETTE IN

Lafayette Part 344

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$2,553.00. Total Amount Due: \$2,553.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0385166401

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00058611

Total Amount Due:

\$2,553.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



1616303338353136363430310000500002553007

WIN4288



INVOICE

Invoice: P0443021901
 Invoice Date: 9/28/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/28/2013

Amount Due: **\$71,821.00**

Invoice for work or services performed at: Lafayette Phase 7 Part 1 LAFAYETTE
 IN

Lafayette Part 344

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/27/2013	Customer contribution INST 18 POLES,9 SPANS SEC,2 XFMR	\$71,821.00

Amount Due: **\$71,821.00**

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0443021901

Corporation Code:

75115

Please Pay By:

10/28/2013

Customer Number:

00070740

Total Amount Due:

\$71,821.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4289

1616303434333032313930310000000071821005



INVOICE

Invoice: P0443021906
 Invoice Date: 10/15/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/14/2013

Amount Due: \$9,146.00

Invoice for work or services performed at: Lafayette Backbone Part 4 LAFAYETTE
 IN

Lafayette Part 3+4

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/14/2013	Customer contribution	\$9,146.00
Amount Due:			<u>\$9,146.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0443021906

Corporation Code: 75115
 Please Pay By: 11/14/2013
 Customer Number: 00070740
 Total Amount Due: **\$9,146.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4290

1616303434333032313930360000200009146008



INVOICE

Invoice: P0358360201
Invoice Date: 2/22/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00068484
PO / Contract No:
Payment Terms: Net 30
Due Date: 3/24/2013

Amount Due: \$156,548.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 142

For billing questions, please call Miscellaneous Accounts Receivable at 800/952-0417.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 2/22/2013, Customer contribution, \$156,548.00. Total Amount Due: \$156,548.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0358360201

Corporation Code:

75115

Please Pay By:

3/24/2013

Customer Number:

00068484

Total Amount Due:

\$156,548.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE RD.
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



1616303335383336303230310000700156548006

WIN4291



INVOICE

Invoice: P0390913001
Invoice Date: 3/13/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Customer No: 00059721
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/12/2013

Amount Due: \$102,113.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
WEST LAFAYETTE IN

Lafayette Phase 10
Part 1 & 2

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/12/2013, Customer contribution, \$102,113.00. Amount Due: \$102,113.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0390913001

Corporation Code:

75115

Please Pay By:

4/12/2013

Customer Number:

00059721

Total Amount Due:

\$102,113.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DRIVE
MARY ANN SETTLES
EVANSVILLE IN 47715

Amount Enclosed



WIN4292

1616303339303931333030310000100102113004



INVOICE

Invoice: P0375201001
 Invoice Date: 4/10/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Customer No: 00070112
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/10/2013

Amount Due: **\$32,747.00**

Invoice for work or services performed at: KDL Windstream-Lafayette PH 12
 WEST LAFAYETTE IN

Lafayette Phase 12

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/9/2013	Customer contribution	\$32,747.00
Amount Due:			<u>\$32,747.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0375201001

Corporation Code: 75115
 Please Pay By: 5/10/2013
 Customer Number: 00070112
 Total Amount Due: **\$32,747.00**

Fed Tax ID # 35-0594457

KDL/WINDSTREAM/METRONET
 1925 ENTERPRISE PARKWAY
 THOMAS HUDOCK, JR.
 TWINSBURG OH 44087

Amount Enclosed



1616303337353230313030310000600032747000

WIN4293



INVOICE

Invoice: P0390914001
 Invoice Date: 7/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/1/2013

Amount Due: **\$78,169.00**

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 WEST LAFAYETTE IN

*Lafayette Phase 4
 Part 1 Rev*

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/1/2013	Customer contribution INSTALL 2-35'; 3-40'; 3-45'; 3-50' POLES	\$78,169.00

Amount Due: **\$78,169.00**

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0390914001

Corporation Code:

75115

Please Pay By:

8/1/2013

Customer Number:

00070740

Total Amount Due:

\$78,169.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0406906005
 Invoice Date: 6/14/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/14/2014

Amount Due: \$34,323.00

Invoice for work or services performed at: Lafayette Ph 8 Part 1 WEST LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/13/2014	Customer contribution CHANGE OUT 3 POLES, RAISE MISC EQUIP	\$34,323.00
Amount Due:			\$34,323.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0406906005

Corporation Code:

75115

Please Pay By:

7/14/2014

Customer Number:

00070740

Total Amount Due:

\$34,323.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4295

1616303430363930363030350000500034323003



INVOICE

Invoice: P0456348801
 Invoice Date: 7/15/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/14/2014
 Amount Due: \$70,711.00

Invoice for work or services performed at: Lafayette Phase 3 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/14/2014	Customer contribution INST 6 POLES, 3 XFRMS & 5 SPAN SECONDARY	\$70,711.00
Amount Due:			\$70,711.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0456348801

Corporation Code:

75115

Please Pay By:

8/14/2014

Customer Number:

00070740

Total Amount Due:

\$70,711.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4296

1616303435363334383830310000200070711001



INVOICE

Invoice: P0461769501
 Invoice Date: 3/21/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/20/2014

Amount Due: \$29,239.00

Invoice for work or services performed at: Lafayette Phase 2 Part 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	03/20/2014	Customer contribution INST 3 POLES, 3 SP SEC, 2 TRANSF	\$29,239.00

Amount Due: \$29,239.00

pd 5/28/14

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0461769501

Corporation Code:

75115

Please Pay By:

4/20/2014

Customer Number:

00070740

Total Amount Due:

\$29,239.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4297

1616303436313736393530310000500029239002



INVOICE

Invoice: P0465572501
 Invoice Date: 1/13/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/12/2014

Amount Due: \$8,386.00

Invoice for work or services performed at:

Lafayette Backbone Part 5

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	1/10/2014	Customer contribution INST 2 POLES, 2 XFRMS, 2 SPANS SECONDARY	\$8,386.00
Amount Due:			<u>\$8,386.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0465572501

Corporation Code: 75115
 Please Pay By: 2/12/2014
 Customer Number: 00070740
 Total Amount Due: **\$8,386.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4298

1616303436353537323530310000700008386005



INVOICE

Invoice: P0538967901
 Invoice Date: 7/16/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/15/2014

Amount Due: \$13,888.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
 LAFAYETTE IN

Lafayette Group 1

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/15/2014	Customer contribution INST 3 SPANS SECONDARY	\$13,888.00
Amount Due:			\$13,888.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: **P0538967901**

Corporation Code: 75115
 Please Pay By: 8/15/2014
 Customer Number: 00070740
 Total Amount Due: **\$13,888.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4299

1616303533383936373930310000800013888000



INVOICE

Invoice: P0542790501
 Invoice Date: 7/15/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/14/2014

Amount Due: \$56,224.00

Invoice for work or services performed at: Lafayette Group 3 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	07/14/2014	Customer contribution INST 7 POLES, 3 XFRM AND 4 SPANS SECONDARY	\$56,224.00
Amount Due:			\$56,224.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0542790501

Corporation Code:

75115

Please Pay By:

8/14/2014

Customer Number:

00070740

Total Amount Due:

\$56,224.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4300

1616303534323739303530310000300056224009



INVOICE

Invoice: P0550195601
 Invoice Date: 8/6/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/5/2014

Amount Due: \$86,478.00

Invoice for work or services performed at: Lafayette Group 4 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	08/05/2014	Customer contribution INST 7 POLES AND 13 SPANS SECONDARY	\$86,478.00
Amount Due:			\$86,478.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0550195601

Corporation Code: 75115
 Please Pay By: 9/5/2014
 Customer Number: 00070740
 Total Amount Due: **\$86,478.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0558002401
 Invoice Date: 7/1/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 7/31/2014

Amount Due: \$39,530.00

Invoice for work or services performed at: Lafayette Group 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	06/30/2014	Customer contribution CHANGE OUT POLES; SECONDARY; TRANSFORMERS	\$39,530.00
Amount Due:			\$39,530.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0558002401

Corporation Code:

75115

Please Pay By:

7/31/2014

Customer Number:

00070740

Total Amount Due:

\$39,530.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4302

1616303535383030323430310000300039530007



INVOICE

Invoice: P0586750401
Invoice Date: 8/21/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 9/20/2014

Amount Due: \$50,000.00

Invoice for work or services performed at: KDL Rte Lafayette Lafayette - LAF
LAFAYETTE IN

Lafayette Group 5

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 08/20/2014, Customer contribution INST 4 POLES, 8 SPANS SEC, UG SEC, \$50,000.00. Total Amount Due: \$50,000.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0586750401

Corporation Code:

75115

Please Pay By:

9/20/2014

Customer Number:

00083509

Total Amount Due:

\$50,000.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



WIN4303

1616303538363735303430310000500050000001



INVOICE

Invoice: P0597309501
 Invoice Date: 9/30/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/30/2014
 Amount Due: **\$53,397.00**

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 7

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	09/29/2014	Customer contribution INST 9 POLES, 1 XFRM, 3 SPANS SECONDARY	\$53,397.00
Amount Due:			<u><u>\$53,397.00</u></u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0597309501

Corporation Code: 75115
 Please Pay By: 10/30/2014
 Customer Number: 00083509
 Total Amount Due: **\$53,397.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4304

1616303539373330393530310000900053397000



INVOICE

Invoice: P0597302501
 Invoice Date: 10/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 11/16/2014
 Amount Due: **\$88,074.00**

Invoice for work or services performed at: Lafayette Group 6 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	10/16/2014	Customer contribution INST 10 POLES, 7 SEC, 2 XFRM, 2 UG PAD	\$88,074.00
Amount Due:			\$88,074.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0597302501

Corporation Code:

75115

Please Pay By:

11/16/2014

Customer Number:

00083509

Total Amount Due:

\$88,074.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4305

1616303539373330323530310000700088074009



INVOICE

Invoice: P0601563901
 Invoice Date: 9/17/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS P.O. BOX 25410 OSP ADMINISTRATION AND SUPPORT LITTLE ROCK AR 72221	Customer No: 00083509 PO / Contract No: Payment Terms: Net 30 Due Date: 10/17/2014
Amount Due: \$52,071.00	

Invoice for work or services performed at: Lafayette Group 8 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	09/16/2014	Customer contribution INST 4 POLES, 3 XFRM, UG SEC	\$52,071.00
Amount Due:			<u>\$52,071.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to: _____ **ACH Instructions:** _____
 Duke Energy Indiana, Inc. PNC Bank
 PO Box 1771 041000124
 Cincinnati OH 45201-1771 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0601563901
 Corporation Code: 75115
 Please Pay By: 10/17/2014
 Customer Number: 00083509
 Total Amount Due: **\$52,071.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



WIN4306

1616303630313536333930310000400052071003



INVOICE

Invoice: P0626920801
Invoice Date: 12/3/2014
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS P.O. BOX 25410 OSP ADMINISTRATION AND SUPPORT LITTLE ROCK AR 72221	Customer No: 00083509 PO / Contract No: Payment Terms: Net 30 Due Date: 1/2/2015
Amount Due: \$35,202.00	

Invoice for work or services performed at: Lafayette Group 11 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	12/02/2014	Customer contribution INST 3 POLES, 5 SPANS SECONDARY	\$35,202.00
Amount Due:			<u>\$35,202.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number:

P0626920801

Corporation Code:

75115

Please Pay By:

1/2/2015

Customer Number:

00083509

Total Amount Due:

\$35,202.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed





INVOICE

Invoice: P0626921801
 Invoice Date: 1/14/2015
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND SUPPORT
 LITTLE ROCK AR 72221

Customer No: 00083509
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 2/13/2015

Amount Due: \$65,561.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
 LAFAYETTE IN

Lafayette Group 12

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	01/13/2015	Customer contribution INSTALL 3 POLES; 12 SPANS SECONDARY	\$65,561.00
Amount Due:			\$65,561.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy
 PO Box 602566
 Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
 121000248
 Duke Energy
 002000057639545

Invoice Number: P0626921801

Corporation Code: 75115
 Please Pay By: 2/13/2015
 Customer Number: 00083509
 Total Amount Due: **\$65,561.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 P.O. BOX 25410
 OSP ADMINISTRATION AND
 SUPPORT
 LITTLE ROCK AR 72221

Amount Enclosed



1616303632363932313830310000000065561000



INVOICE

Invoice: P0626926101
Invoice Date: 1/14/2015
Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND SUPPORT
LITTLE ROCK AR 72221

Customer No: 00083509
PO / Contract No:
Payment Terms: Net 30
Due Date: 2/13/2015

Amount Due: \$122,241.00

Invoice for work or services performed at: KDL/Windstream/Metronet - LAF Group
LAFAYETTE IN

Lafayette Group 14

For billing questions, please call Jane Nickles at 317/838-2155

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 01/13/2015, Customer contribution, \$122,241.00. Description: INSTALL 11 POLES; 21 SPANS SECPNDARY. Amount Due: \$122,241.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy
PO Box 602566
Charlotte NC 28260-2566

ACH Instructions:

Wells Fargo - Indiana
121000248
Duke Energy
002000057639545

Invoice Number: P0626926101

Corporation Code: 75115
Please Pay By: 2/13/2015
Customer Number: 00083509
Total Amount Due: \$122,241.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
P.O. BOX 25410
OSP ADMINISTRATION AND
SUPPORT
LITTLE ROCK AR 72221

Amount Enclosed



WIN4309

1616303632363932363130310000900122241009



INVOICE

Invoice: P0448325001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$286,692.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Laf P
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST 28 POLES, SECONDARY, XFRM	\$286,692.00
Amount Due:			<u>\$286,692.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0448325001

Corporation Code:

75115

Please Pay By:

12/2/2013

Customer Number:

00070740

Total Amount Due:

\$286,692.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4310

1616303434383332353030310000200286692001



INVOICE

Invoice: P0400095101
 Invoice Date: 8/30/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/29/2013

Amount Due: \$3,525.00

Invoice for work or services performed at: KDL/Windstream/Metronet Rte - Lafay
 LAFAYETTE IN

Lafayette Phase 2 Part 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/29/2013	Customer contribution INSTALL 1-45' POLE; 2 TRANSFORMERS	\$3,525.00

Amount Due: \$3,525.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0400095101

Corporation Code: 75115
 Please Pay By: 9/29/2013
 Customer Number: 00070740
 Total Amount Due: **\$3,525.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0396988701
 Invoice Date: 8/30/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/29/2013

Amount Due: \$131,282.00

Invoice for work or services performed at: Lafayette Phase 7 Part 1 LAFAYETTE
 IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/29/2013	Customer contribution INSTALL 5-40';3-45';3-50'; 2 TRANSFORMERS; 32 SPANSSEC	\$131,282.00
Amount Due:			<u>\$131,282.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0396988701

Corporation Code:

75115

Please Pay By:

9/29/2013

Customer Number:

00070740

Total Amount Due:

\$131,282.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0439102201
 Invoice Date: 3/12/2014
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/11/2014
 Amount Due: **\$113,125.00**

Invoice for work or services performed at: Lafayette Ph 7 Part 2 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155

Line	Date of Charge	Description	Net Amount
1	03/11/2014	Customer contribution INST 12 POLES, 8 SP SEC, 3 XFRM	\$113,125.00
Amount Due:			\$113,125.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0439102201

Corporation Code:

75115

Please Pay By:

4/11/2014

Customer Number:

00070740

Total Amount Due:

\$113,125.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4313

1616303433393130323230310000900113125004



INVOICE

Invoice: P0361184601
Invoice Date: 3/21/2013
Page: 1 of 1

Bill to: KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Customer No: 00058611
PO / Contract No:
Payment Terms: Net 30
Due Date: 4/20/2013

Amount Due: \$54,112.00

Invoice for work or services performed at: Lafayette Ph 11 Part 1 WEST
LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Table with 4 columns: Line, Date of Charge, Description, Net Amount. Row 1: 1, 3/20/2013, Customer contribution, \$54,112.00. Description: INST 10 POLES, 4 SPANS SECONDARY. Amount Due: \$54,112.00

Please detach and return with your payment. Please indicate invoice number on check.

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
PO Box 1771
Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
041000124
Duke Energy Indiana, Inc.
4110754135

Invoice Number:

P0361184601

Corporation Code:

75115

Please Pay By:

4/20/2013

Customer Number:

00058611

Total Amount Due:

\$54,112.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
5020 SMYTHE DR
AMANDA EPMEIER
EVANSVILLE IN 47715

Amount Enclosed



WIN4314

1616303336313138343630310000000054112009



INVOICE

Invoice: P0394833201
 Invoice Date: 3/27/2013
 Page: 1 of 1

Bill to: KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Customer No: 00058611
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 4/26/2013
 Amount Due: **\$88,545.00**

Invoice for work or services performed at: Lafayette Ph 11 Part 2 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	3/26/2013	Customer contribution INST 30 POLES, 6 TRANSF, SPANS OF SEC	\$88,545.00
Amount Due:			<u>\$88,545.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0394833201

Corporation Code:

75115

Please Pay By:

4/26/2013

Customer Number:

00058611

Total Amount Due:

\$88,545.00

Fed Tax ID # 35-0594457

KDL/WINDSTREAM
 5020 SMYTHE DR
 AMANDA EPMEIER
 EVANSVILLE IN 47715

Amount Enclosed



WIN4315

1616303339343833333230310000200088545001



INVOICE

Invoice: P0398161201
 Invoice Date: 5/9/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 6/8/2013

Amount Due: \$152,945.00

Invoice for work or services performed at: Lafayette Phase 11 Part 3 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	5/8/2013	Customer contribution INST 49 POLES, 3 XFMR AND SECONDARY	\$152,945.00
Amount Due:			<u>\$152,945.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0398161201
 Corporation Code: 75115
 Please Pay By: 6/8/2013
 Customer Number: 00070740
 Total Amount Due: **\$152,945.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4316

1616303339383136313230310000100152945000



INVOICE

Invoice: P0398162501
 Invoice Date: 4/27/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 5/27/2013

Amount Due: \$5,983.00

Invoice for work or services performed at: Lafayette Phase 11 Part 4 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	4/26/2013	Customer contribution	\$5,983.00
Amount Due:			<u>\$5,983.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0398162501

Corporation Code:

75115

Please Pay By:

5/27/2013

Customer Number:

00070740

Total Amount Due:

\$5,983.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4317

1616303339383136323530310000500005983002



INVOICE

Invoice: P0377471201
 Invoice Date: 7/4/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 8/3/2013

Amount Due: **\$48,318.00**

Invoice for work or services performed at: LAFAYETTE PHAS 6 PART 1- REV
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317-838-2155.

Line	Date of Charge	Description	Net Amount
1	7/3/2013	Customer contribution INSTALL 1-55' POLE; 1 TRANS; 10 SPANS SEC	\$48,318.00
Amount Due:			<u>\$48,318.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0377471201

Corporation Code:

75115

Please Pay By:

8/3/2013

Customer Number:

00070740

Total Amount Due:

\$48,318.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4318

1616303337373437313230310000&0004&31&002



INVOICE

Invoice: P0386170304
 Invoice Date: 8/19/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 9/18/2013

Amount Due: **\$149,439.00**

Invoice for work or services performed at: Lafayette Phase 5 Part 1 Rev 3
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	8/15/2013	Customer contribution	\$149,439.00
INSTALL: 7-40'; 1-45'; 1-50'; 16 SPANS SECONDARY			
Amount Due:			\$149,439.00

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0386170304

Corporation Code:

75115

Please Pay By:

9/18/2013

Customer Number:

00070740

Total Amount Due:

\$149,439.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed





INVOICE

Invoice: P0399668701
 Invoice Date: 9/17/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 10/17/2013
 Amount Due: **\$117,183.00**

Invoice for work or services performed at: Lafayette Phase 3 Part 1 WEST
 LAFAYETTE IN

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	9/16/2013	Customer contribution INST 10 POLES, 3 XFMR, 7 SPANS SEC	\$117,183.00
Amount Due:			<u>\$117,183.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number:

P0399668701

Corporation Code:

75115

Please Pay By:

10/17/2013

Customer Number:

00070740

Total Amount Due:

\$117,183.00

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4320

1616303339393636383730310000100117183009



INVOICE

Invoice: P0410544001
 Invoice Date: 11/2/2013
 Page: 1 of 1

Bill to: WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Customer No: 00070740
 PO / Contract No:
 Payment Terms: Net 30
 Due Date: 12/2/2013

Amount Due: \$99,932.00

Invoice for work or services performed at: LAFAYETTE IN

Lafayette Phase 1

For billing questions, please call Jane Nickles at 317/838-2155.

Line	Date of Charge	Description	Net Amount
1	10/31/2013	Customer contribution INST POLES, XFMR, SECONDARY	\$99,932.00
Amount Due:			<u>\$99,932.00</u>

↓ Please detach and return with your payment. Please indicate invoice number on check. ↓

Payment Coupon

Please make check payable to:

 Duke Energy Indiana, Inc.
 PO Box 1771
 Cincinnati OH 45201-1771

Wire/ACH Instructions:

 PNC Bank
 041000124
 Duke Energy Indiana, Inc.
 4110754135

Invoice Number: P0410544001
 Corporation Code: 75115
 Please Pay By: 12/2/2013
 Customer Number: 00070740
 Total Amount Due: **\$99,932.00**

Fed Tax ID # 35-0594457

WINDSTREAM COMMUNICATIONS
 1925 ENTERPRISE PKWY
 THOMAS HUDOCK JR
 TWINSBURG OH 44087

Amount Enclosed



WIN4321

1616303431303534343030310000600099932007

From: Hays, Sarah K
Sent: Friday, January 05, 2018 10:21 AM
To: Nicole Sugg
Cc: Permits; Mcgehee, Brandie; Edwards, Kimberly
Subject: FW: Tagging Strand

Nicole,

Good morning. Hope you had a great holiday and New Year's!

We are currently looking into this tagging complaint. Is there any correspondence you have where you were told by Windstream not to tag as MetroNet? Do you remember who from Windstream originally told you this?

Thanks for your help,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Nicole Sugg [<mailto:Nicole.Sugg@metronetinc.com>]
Sent: Thursday, January 04, 2018 4:58 PM
To: Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: Tagging Strand

Hey there Brandie and Kim!

We have seen a complaint from Duke regarding us not tagging our strand. We were told originally by Windstream to not tag our stuff. Can you guys look into this and advise?

Thank you,

Nicole Sugg

MetroNet | OSP Field Construction Process Manager
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1365
www.MetronetInc.com

METRONET.

From: Edwards, Kimberly
Sent: Monday, June 11, 2018 3:41 PM
To: 'Nicole Sugg'
Cc: Hays, Sarah K; Mcgehee, Brandie; Rucker, Jamie; Lloyd, James; Permits; Pizzo, Amanda
Subject: RE: Windstream Make Ready

Nicole,

Windstream respectfully declines the offer from MetroNet to take care of the make ready work required on Windstream owned poles. We will continue to work with our contractors to complete the make ready required for approved MetroNet pole attachment applications.

Please let me know of any other questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Nicole Sugg [mailto:Nicole.Sugg@metronetinc.com]
Sent: Thursday, June 07, 2018 10:08 AM
To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>; Pizzo, Amanda <Amanda.Pizzo@windstream.com>
Subject: RE: Windstream Make Ready

Thank you Kim!

Who would I need to contact if I want to discuss taking the burden of dealing with the electrical make ready off of Windstream's plate? With KU, once they approve our applications, we are responsible for hiring an approved contractor chosen by them and completing the necessary work.

I am interested in discussing with the appropriate party the opportunity for us to take care of the make ready work for our applications we put in to you also.

Nicole Sugg

OSP Field Construction Process Manager

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]
Sent: Wednesday, June 6, 2018 1:18 PM
To: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>; Pizzo, Amanda <Amanda.Pizzo@windstream.com>
Subject: RE: Windstream Make Ready

Hello Nicole,

I will get with the Poles Team and the field regarding the make ready invoice breakdown or list of average costs per move. More to come on this.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Nicole Sugg [<mailto:Nicole.Sugg@metronetinc.com>]
Sent: Tuesday, June 05, 2018 4:24 PM
To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>
Subject: RE: Windstream Make Ready

Kim,

Thank you so much for the below. I think this is going to help us immensely moving forward.

Only question I have is in regards to the Make Ready Recommendations. We received invoices but with no attachments itemizing what moves we would be paying for. Can you help me out with understanding that portion of the process?

I can't let my people approve an invoice if we don't know exactly what make ready needs to happen in Windstream's opinion. What would maybe help if you can't give us the breakdown for the invoice is if you can supply my Make Ready Engineer with a list of average costs per move etc. Is that a possibility?

Thanks again,

Nicole Sugg

OSP Field Construction Process Manager

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]

Sent: Monday, June 4, 2018 4:10 PM

To: Nicole Sugg <Nicole.Sugg@metronetinc.com>

Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: FW: Windstream Make Ready

Good afternoon Nicole,

We met with the OSP Manager for Lexington, KY regarding the status of the initial applications received from MetroNet as well as to review the process in the field for processing the applications.

We have three packets (total of 75 poles) in which we are currently preparing the make ready invoices. These should be sent to MetroNet either late this afternoon or early morning tomorrow. We are also expecting the make ready estimates on 4 more packets for an additional 100 poles by the end of this week. The progress on the initial applications has been delayed slightly due to another large pole attachment project in the Lexington, KY area, however resources have been reallocated to mitigate additional delays.

The process in the field for the MetroNet applications is as follows:

- OSP receives the accepted pole attachment application packets from the Windstream Permitting Team
- OSP reviews each of the packets to determine what Windstream exchanges are impacted and to how many poles are impacted per exchange, they review the
- OSP send the application, print, exchange information to the engineering contractor
- The engineering contractor completes the field survey work for each application and create an OSP job for any applicable make ready work required
- The OSP Manager reviews the job and provides approval
- Once the job is fully approved the estimated make ready costs are sent to the Windstream Poles Team
- The Poles Team prepares a make ready invoice and sends to MetroNet
- Once confirmation of payment is received from the Windstream Poles Team – the field distributes the job and the make ready work is scheduled with the contractor.

We have asked the OSP Manager to join the bi-weekly MetroNet KY calls going forward to assist with any questions you may have for OSP Engineering regarding current status.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Edwards, Kimberly

Sent: Friday, June 01, 2018 7:23 AM

To: Nicole.Sugg@metronetinc.com

Cc: Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Rucker,

Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: Windstream Make Ready

Good morning Nicole,

We have an internal meeting scheduled for Monday - 06/04/2018 to discuss the MetroNet KY applications received and the current status.

I will provide you an update, after this internal meeting, including additional information on the process the field is utilizing for working the applications to complete the make ready estimates and point of contact information for Windstream OSP personnel.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

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From: Edwards, Kimberly
Sent: Monday, June 11, 2018 3:05 PM
To: Nicole Sugg
Cc: Hays, Sarah K; Mcgehee, Brandie; Rucker, Jamie; Permits; Pizzo, Amanda
Subject: RE: Windstream Make Ready

Nicole,

The Windstream make ready estimate provides the total costs associated with each package including labor, materials, engineering, etc. This is the same level of detail Windstream provides others attaching submitting pole attachment applications. The costs will vary for every package as they each have different work associated with Windstream lowering facilities as MetroNet has requested.

Please let me know of any further questions or concerns.

Thank you,

Kim

Kimberly Edwards
Manager – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Edwards, Kimberly
Sent: Wednesday, June 06, 2018 1:18 PM
To: 'Nicole Sugg' <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>; Pizzo, Amanda <Amanda.Pizzo@windstream.com>
Subject: RE: Windstream Make Ready

Hello Nicole,

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Thank you,

Kim

Kimberly Edwards
Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Nicole Sugg [<mailto:Nicole.Sugg@metronetinc.com>]
Sent: Tuesday, June 05, 2018 4:24 PM
To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>
Subject: RE: Windstream Make Ready

Kim,

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Only question I have is in regards to the Make Ready Recommendations. We received invoices but with no attachments itemizing what moves we would be paying for. Can you help me out with understanding that portion of the process?

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Thanks again,

Nicole Sugg
OSP Field Construction Process Manager

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]
Sent: Monday, June 4, 2018 4:10 PM
To: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>
Subject: FW: Windstream Make Ready

Good afternoon Nicole,

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- OSP reviews each of the packets to determine what Windstream exchanges are impacted and to how many poles are impacted per exchange, they review the
- OSP send the application, print, exchange information to the engineering contractor
- The engineering contractor completes the field survey work for each application and create an OSP job for any applicable make ready work required
- The OSP Manager reviews the job and provides approval
- Once the job is fully approved the estimated make ready costs are sent to the Windstream Poles Team
- The Poles Team prepares a make ready invoice and sends to MetroNet
- Once confirmation of payment is received from the Windstream Poles Team – the field distributes the job and the make ready work is scheduled with the contractor.

We have asked the OSP Manager to join the bi-weekly MetroNet KY calls going forward to assist with any questions you may have for OSP Engineering regarding current status.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Edwards, Kimberly

Sent: Friday, June 01, 2018 7:23 AM

To: Nicole.Sugg@metronetinc.com

Cc: Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: Windstream Make Ready

Good morning Nicole,

We have an internal meeting scheduled for Monday - 06/04/2018 to discuss the MetroNet KY applications received and the current status.

I will provide you an update, after this internal meeting, including additional information on the process the field is utilizing for working the applications to complete the make ready estimates and point of contact information for Windstream OSP personnel.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

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From: George Kemp <George.Kemp@metronetinc.com>
Sent: Sunday, March 25, 2018 7:58 PM
To: Mateyoke, Charles
Cc: Hays, Sarah K; Williamson, Tim; Rucker, Jamie; Henson, Jason; Lloyd, James; Edwards, Kimberly
Subject: Re: METRONET CONSTRUCTION

Good evening Mr. Mateyoke,

Please call me George. Yes, I will be there. Is there a time on Tuesday that works better for you?

I look forward to our meeting.

George Kemp, Ph.D.
Director, Safety & Quality Assurance
MetroNet, Inc
904.504.3571

On Sun, Mar 25, 2018 at 6:02 PM -0400, "Mateyoke, Charles" <Charles.Mateyoke@windstream.com> wrote:

Mr. Kemp,

If you would like I could meet with you on Tuesday outside of our facility at 2901 Palumbo Drive at the corner of Palumbo Drive and Darby Creek Drive.

Tom Mateyoke

Local Manager - Operations | Windstream
1401 Higbee Mill Road | Lexington, KY 40503

o: 859 272-0214 | m: 859 221-7914
charles.mateyoke@windstream.com

From: George Kemp [mailto:George.Kemp@metronetinc.com]
Sent: Friday, March 23, 2018 10:37 AM
To: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Williamson, Tim <Tim.Williamson@windstream.com>; Henson, Jason <Jason.Henson@windstream.com>; Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Cc: George Kemp <George.Kemp@metronetinc.com>
Subject: Re: METRONET CONSTRUCTION

Good morning,

The information you are sharing with us is very concerning to us as well. As MetroNet's Director, Safety & Quality Assurance one of my goals is to help ensure we are doing everything we can to protect the facilities of other utilities.

I will be in Lexington next Monday and Tuesday. Who can I meet with to review these concerns? Do you have a field operations manager and a damage prevention manager or are there other people that would be better to meet with? Protecting your facilities is important to us!

Please let me know who, when and where and I will be there. This is important to me.

Best regards,
George

George Kemp, Ph.D.
Director, Safety & Quality Assurance
MetroNet

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Date: Friday, March 23, 2018 at 10:12 AM
To: "Edwards, Kimberly" <Kimberly.Edwards@windstream.com>, Nicole Sugg <Nicole.Sugg@metronetinc.com>, Tom Osborne <Tom.Osborne@metronetinc.com>, George Kemp <George.Kemp@metronetinc.com>, John Storey <John.Storey@metronetinc.com>
Cc: "Hays, Sarah K" <Sarah.K.Hays@windstream.com>, "Lloyd, James" <James.Lloyd@windstream.com>, "Rucker, Jamie" <Jamie.Rucker@windstream.com>
Subject: RE: METRONET CONSTRUCTION

Tom/George/John, See below and please apply to all to address these concerns.

Kim,

We are adding our underground team to this email. We most definitely contact 811 and take every precaution to avoid any disturbances. I am unaware of the recent incident you describe. I am on the aerial permitting team, but can assure you the gentleman mentioned above will get back to you as soon as possible.

Thank you,

Lauren Sandefur
Permit Specialist

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]
Sent: Friday, March 23, 2018 9:00 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>; Nicole Sugg <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: FW: METRONET CONSTRUCTION
Importance: High

Lauren/Nicole,

Please see the email string below regarding Windstream cut cables – at 248 Catera Trace and another on Darlington Circle. Is the MetroNet contractor contacting 811 or taking normal precautions before digging? This is impacting

Windstream customers in the area and this is completely unacceptable. Windstream has escalating concerns on how many Windstream cables are being cut. What are the next steps to getting these issues addressed and to have the cuts Windstream has identified properly fixed? Will MetroNet please send notification of all cuts to Windstream for inspection and to properly resolve? We would like to have a meeting as soon as possible to discuss this in detail.

Please advise ASAP.

Thank you,

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Williamson, Tim

Sent: Thursday, March 22, 2018 4:50 PM

To: Henson, Jason <Jason.Henson@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Cc: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Trimble, David <David.Trimble@windstream.com>; Roberts, Barry <Barry.Roberts@windstream.com>; McAbee, Phillip <Phillip.McAbee@windstream.com>

Subject: RE: METRONET CONSTRUCTION

Thanks Jason! We need to stop these actions.

Timothy Williamson

Director of Field Operations | Windstream Lexington KY

130 W. New Circle Rd. Suite 170 Lexington, KY 40505

O: 859-357-6105 / M: 859-421-9766

tim.williamson@windstream.com | windstreambusiness.com

From: Henson, Jason

Sent: Thursday, March 22, 2018 5:49 PM

To: Williamson, Tim <Tim.Williamson@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Cc: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Trimble, David <David.Trimble@windstream.com>; Roberts, Barry <Barry.Roberts@windstream.com>; McAbee, Phillip <Phillip.McAbee@windstream.com>

Subject: Re: METRONET CONSTRUCTION

Tim,

I have sent this down to James Lloyd as well. Hoping they may have some contacts from the Joint Use discussions they had with Metronet.

Jason Henson

OSP Design Manager KY-NY-PA

c:859-361-0323 o:859-258-2196

jason.henson@windstream.com

On Mar 22, 2018, at 5:41 PM, Williamson, Tim <Tim.Williamson@windstream.com> wrote:

Barry and David,

Who do we address this with? This is just some of what we have.

Timothy Williamson

Director of Field Operations | Windstream Lexington KY

130 W. New Circle Rd. Suite 170 Lexington, KY 40505

O: 859-357-6105 / M: 859-421-9766

tim.williamson@windstream.com | windstreambusiness.com

From: Mateyoke, Charles

Sent: Thursday, March 22, 2018 5:16 PM

To: Williamson, Tim <Tim.Williamson@windstream.com>; Henson, Jason

<Jason.Henson@windstream.com>; Trimble, David <David.Trimble@windstream.com>

Subject: METRONET CONSTRUCTION

Just to update everyone Metro net has cut two more cables today. One at 248 Catera Trace a 200 pair cable in the East and one on Darlington Circle in the Lakeside was a 400 pair, possible dead cable though. The other thing that has come up is there are numerous buried drops that have been cut during this process as well. Metronet contractor is putting wire nuts on the pairs and then taping it up with electrical tape and then putting back in the ground and covering it up. We know of 4 – 5 drops, but do not know how many they have done that we do not know about. Without having the Ranger-seal closure on the splice, it will sooner or later go bad and will need replaced. I am not quite sure what steps should be taken either by Metronet to let us know a drop has been cut or to prevent them from splicing them together the way they are.

Tom Mateyoke

Local Manager - Operations | Windstream

1401 Higbee Mill Road | Lexington, KY 40503

o: 859 272-0214 | m: 859 221-7914

charles.mateyoke@windstream.com

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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Friday, June 29, 2018 9:11 AM
To: Hays, Sarah K; Hodges, Felicia N; Pizzo, Amanda
Cc: Edwards, Kimberly; Mcgehee, Brandie; Sanders, Ashley L; Tom Osborne
Subject: New Metronet Permitting Supervisor

Follow Up Flag: Follow up
Flag Status: Flagged

Good Morning,
I just wanted to let you know that we have a new permitting supervisor starting 7/2. His name is Tom Osborne and he should be copied on his emails rather than Addison Burk.
Tom.Osborne@metronetinc.com

Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Gibson, Jeremy B <Jeremy.Gibson@duke-energy.com>
Sent: Tuesday, September 05, 2017 10:05 AM
To: Lloyd, James; Freeburn, Scott; Asche, Dustin K
Cc: Latham, Joyce; King, Daniel; Rucker, Jamie
Subject: RE: Windstream KDL Unpaid Make Ready

James,

Thank you for your response back. Duke Energy will not reverse the invoices to Windstream KDL as per section 9 of the agreement 'KDL shall reimburse the applicable Operating Company for the cost of all such work'. Windstream KDL submitted the routes and is therefore responsible for all make ready and engineering cost associated with the projects. Any invoices to Windstream KDL should be paid upon receipt and not held up due to a side agreement between Windstream KDL and Metronet.

Thank you,
Jeremy

Jeremy Gibson
Sr. Joint Use Facilities Specialist
859-816-7386 Cell
Jeremy.gibson@duke-energy.com

From: Lloyd, James [mailto:James.Lloyd@windstream.com]
Sent: Tuesday, September 05, 2017 9:38 AM
To: Gibson, Jeremy B
Cc: Latham, Joyce; King, Daniel; Rucker, Jamie
Subject: RE: Windstream KDL Unpaid Make Ready

***** Exercise caution. This is an EXTERNAL email. DO NOT open attachments or click links from unknown senders or unexpected email. *****

Jeremy,

In regards to your email below, and as we have shared before, we dispute the amounts being billed to us by Duke Energy. Since we are disputing these amounts, and since these invoices are for work that MetroNet will ultimately be responsible for paying, we would like for Duke Energy to consider reversing the invoices to Windstream and billing the amounts directly to MetroNet.

If this is not possible, please let us know as soon as possible.

Sincerely,

James Lloyd

**Manager – Engineering Support
Windstream Communications, LLC**

11101 Anderson Drive
Little Rock, Arkansas 72212
(501) 748-7538

Email: James.Lloyd@windstream.com



From: Gibson, Jeremy B [<mailto:Jeremy.Gibson@duke-energy.com>]

Sent: Monday, August 21, 2017 10:01 AM

To: Sanchez, Sherry H <Sherry.Sanchez@windstream.com>; Mcclure, Joseph W <Joseph.W.Mcclure@windstream.com>;
Windstream Jointuse <Windstream.Jointuse@windstream.com>

Cc: Freeburn, Scott <Scott.Freeburn@duke-energy.com>; Asche, Dustin K <Dustin.Asche@duke-energy.com>

Subject: Windstream KDL Unpaid Make Ready

Importance: High

Sherry and Joe,

I wanted to follow up with you to see where Windstream KDL was on paying the unpaid make ready true up invoices from the Lafayette and Hanover routes. These invoices are still outstanding at this time. Last communication was back in March and we have not heard anything back in regards to these.

Please let me know when Duke can expect payment on these.

Thank you,

Jeremy

Jeremy Gibson

Sr. Joint Use Facilities Specialist

859-816-7386 Cell

Jeremy.gibson@duke-energy.com

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From: Windstream Jointuse
Sent: Thursday, August 09, 2018 1:31 PM
To: Lauren Sandefur
Cc: Permits
Subject: RE: LX134-01W Pole Application

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR6237 and submitted to the Windstream Engineer, Ashley Sanders as of 8/9/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, August 7, 2018 7:33 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX134-01W Pole Application

Good Morning,
Please see attached for proposal titled LX134-01W. This is a proposal for Windstream poles.
Let me know if you have any questions or need anything else.
Thank you

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hays, Sarah K
Sent: Monday, April 02, 2018 8:48 AM
To: Lauren Sandefur
Subject: RE: Lexington Call

Good morning, Lauren

I will get a bi-weekly call set up starting this week. I'll look at our schedule here and see what works.

Thanks!

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Friday, March 30, 2018 9:58 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: Lexington Call

Good Morning Sarah,

We are needing to set up a biweekly call for the Lexington market, any day/time works for me except: Monday 8-10am and Friday 9-10am.

The attendees will just be myself, Addison Burk and Nicole Sugg.

Thanks!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 06, 2018 9:37 AM
To: Hays, Sarah K; Hodges, Felicia N
Subject: Metronet - LX Applications

Good Morning,
I hope you all had a good weekend!
I am just following up on a few applications that are at 60 days since submittal.

LX-FR07-06W
LX-FR07-07W
LX-FR07-08W
LX-FR07-09W
LX-FR07-10W
LX-FR07-11W
LX-FR07-12W
LX-FR07-13W

Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hays, Sarah K
Sent: Monday, August 06, 2018 10:44 AM
To: Lauren Sandefur; Hodges, Felicia N
Subject: RE: Metronet - LX Applications

Good morning, Lauren!

I heard from Ashley over the weekend and she said she has gotten a lot of applications back from our contractor and will be sending those out this week.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, August 6, 2018 8:37 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Subject: Metronet - LX Applications

Good Morning,

I hope you all had a good weekend!

I am just following up on a few applications that are at 60 days since submittal.

LX-FR07-06W
LX-FR07-07W
LX-FR07-08W
LX-FR07-09W
LX-FR07-10W
LX-FR07-11W
LX-FR07-12W
LX-FR07-13W

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

From: Hays, Sarah K
Sent: Thursday, August 09, 2018 1:00 PM
To: 'Lauren Sandefur'; Hodges, Felicia N; Sanders, Ashley L
Subject: RE: Windstream Tracking Sheet

Lauren,

Here is your spreadsheet updated with Ashley's notes. The ones in red you should receive by the end of the week. The ones in black will be in her next batch. Thanks!

LX-FR07-06W	25	6/6/2018	64	Will receive approval today
LX-FR07-09W	25	6/6/2018	64	Will receive approval today
LX-FR07-10W	25	6/6/2018	64	Will receive approval today
LX-FR07-11W	25	6/6/2018	64	Next batch to be sent to Me
LX-FR07-12W	25	6/6/2018	64	Next batch to be sent to Me
LX-FR07-13W	19	6/7/2018	63	Will receive approval today
LX-FR03-02W	4	6/18/2018	52	Will receive approval today
LX-Winchester Reroute-01W	10	6/18/2018	52	Next batch to be sent to Me
LX-FR07-14W	25	6/19/2018	51	Next batch to be sent to Me
LX-FR07-15W	9	6/19/2018	51	Next batch to be sent to Me

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>

Sent: Thursday, August 9, 2018 10:52 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>

Subject: Windstream Tracking Sheet

Good Morning,

I just wanted to send this out before our call today regarding the applications that are outstanding.

Thanks!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, August 09, 2018 11:52 AM
To: Hays, Sarah K; Hodges, Felicia N; Sanders, Ashley L
Subject: Windstream Tracking Sheet
Attachments: LX Windstream Tracking Sheet.xlsx

Good Morning,
I just wanted to send this out before our call today regarding the applications that are outstanding.
Thanks!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



8/23/2018

Windstream Application	Poles	Submittal Date	Approved Date	Days Since Submittal	45 Day Target	60 Day Target
LX135-01W	25	3/13/2018	6/6/2018			
LX132-01W	25	3/14/2018	6/6/2018			
LX135-04W	25	3/17/2018	6/14/2018			
LX135-05W	25	3/17/2018	6/15/2018			
LX135-03W	25	3/18/2018	6/14/2018			
LX135-06W	3	3/18/2018	6/15/2018			
LX-FR02-01W	25	3/18/2018	6/15/2018			
LX-FR02-02W	25	3/18/2018	6/15/2018			
LX-FR02-03W	25	3/18/2018	6/15/2018			
LX-FR02-04W	10	3/18/2018	6/15/2018			
LX135-02W	25	3/19/2018	6/6/2018			
LX167-01W	25	3/19/2018	6/29/2018			
LX167-02W	25	3/19/2018	6/29/2018			
LX167-03W	25	3/19/2018	6/18/2018			
LX167-04W	25	3/19/2018	6/18/2018			
LX167-05W	22	3/19/2018	6/19/2018			
LX-FR04-05BW	12	3/19/2018	6/15/2018			
LX151-01W	1	4/19/2018	6/13/2018			
LX159-01W	2	4/19/2018	6/19/2018			
LX165-01W	10	6/11/2018	7/18/2018			
LX166-01W	1	4/19/2018	6/20/2018			
LX276-01W	6	4/19/2018	6/21/2018			
LX-FR01-03W	5	4/19/2018	6/13/2018			
LX-FR07-01W	25	4/19/2018	6/21/2018			
LX009-01W	20	4/23/2018	6/21/2018			
LX049-01W	25	4/23/2018	6/21/2018			
LX-FR07-02W	18	6/28/2018	7/11/2018			
LX-FR07-04W	18	4/26/2018	6/21/2018			
LX047-01W	3	4/30/2018	6/21/2018			
LX053-01W	25	4/30/2018	6/28/2018			
LX064-01W	25	4/30/2018	6/13/2018			
LX-FR05-09W	18	4/30/2018	6/28/2018			
LX-FR07-03W	1	4/30/2018	6/13/2018			
LX049-03W	25	5/22/2018	6/28/2018			
LX059-01W	3	5/23/2018	7/12/2018			
LX221-01W	7	5/23/2018	6/28/2018			
LX-FR09-01W	13	5/23/2018	6/28/2018			
LX-FR10-01W	2	5/23/2018	6/28/2018			
LX-FR11-01W	1	5/23/2018	6/18/2018			
LX-FR11-02W	3	5/23/2018	6/28/2018			
LX025-01W	13	6/4/2018	7/3/2018			
LX-FR05-11W	21	6/6/2018	7/3/2018			
LX-FR07-05W	25	6/6/2018	7/20/2018			
LX-FR07-06W	25	6/6/2018		78	7/21/2018	8/5/2018
LX-FR07-07W	25	6/6/2018	7/3/2018			
LX-FR07-08W	25	6/6/2018	7/3/2018			
LX-FR07-09W	25	6/6/2018		78	7/21/2018	8/5/2018
LX-FR07-10W	25	6/6/2018		78	7/21/2018	8/5/2018
LX-FR07-11W	25	6/6/2018		78	7/21/2018	8/5/2018
LX-FR07-12W	25	6/6/2018		78	7/21/2018	8/5/2018
LX-FR07-13W	19	6/7/2018		77	7/22/2018	8/6/2018
LX-FR03-02W	4	6/18/2018		66	8/2/2018	8/17/2018
LX-Winchester Reroute-01W	10	6/18/2018		66	8/2/2018	8/17/2018
LX-FR07-14W	25	6/19/2018		65	8/3/2018	8/18/2018
LX-FR07-15W	9	6/19/2018		65	8/3/2018	8/18/2018
LX-FR06-02W	25	7/5/2018		49	8/19/2018	9/3/2018
LX-FR06-03W	25	7/5/2018		49	8/19/2018	9/3/2018
LX-FR06-04W	10	7/5/2018		49	8/19/2018	9/3/2018
LX-FR07-17W	23	7/5/2018		49	8/19/2018	9/3/2018
LX-FR07-19W	7	7/5/2018		49	8/19/2018	9/3/2018
LX-FR07-16W	5	7/5/2018		49	8/19/2018	9/3/2018
LX-FR05-05W	25	7/5/2018		49	8/19/2018	9/3/2018
LX-FR05-06W	25	7/5/2018		49	8/19/2018	9/3/2018
LX-FR05-07W	25	7/5/2018		49	8/19/2018	9/3/2018
LX-FR05-08W	24	7/5/2018		49	8/19/2018	9/3/2018
LX-FR05-10W	17	7/5/2018		49	8/19/2018	9/3/2018
LX-FR06-01W	25	7/5/2018		49	8/19/2018	9/3/2018
LX-FR07-18W	7	7/5/2018		49	8/19/2018	9/3/2018
LX-FR08-01W	25	7/5/2018		49	8/19/2018	9/3/2018
LX-FR08-02W	25	7/7/2018		47	8/21/2018	9/5/2018
LX-FR08-01W	25	7/9/2018		45	8/23/2018	9/7/2018
LX-FR08-02W	25	7/11/2018		43	8/25/2018	9/9/2018
LX-FR06-05W	13	7/16/2018		38	8/30/2018	9/14/2018
LX164-01W	4	7/17/2018		37	8/31/2018	9/15/2018
LX159-02W	4	7/17/2018		37	8/31/2018	9/15/2018
LX175-01W	21	8/6/2018		17	9/20/2018	10/5/2018
LX132-02W	17	8/6/2018		17	9/20/2018	10/5/2018
LX158-01W	10	8/6/2018		17	9/20/2018	10/5/2018
LX174-01W	16	8/6/2018		17	9/20/2018	10/5/2018
LX173-01W	17	8/6/2018		17	9/20/2018	10/5/2018
LX166-02W	6	8/6/2018		17	9/20/2018	10/5/2018
LX166-03W	25	8/6/2018		17	9/20/2018	10/5/2018
LX276-02W	17	8/6/2018		17	9/20/2018	10/5/2018
LX101-01W	5	8/6/2018		17	9/20/2018	10/5/2018
LX136-01W	25	8/6/2018		17	9/20/2018	10/5/2018
LX136-02W	13	8/6/2018		17	9/20/2018	10/5/2018
LX134-01W	25	8/7/2018		16	9/21/2018	10/6/2018
LX134-02W	7	8/7/2018		16	9/21/2018	10/6/2018
LX105-01W	25	8/7/2018		16	9/21/2018	10/6/2018
LX105-02W	25	8/7/2018		16	9/21/2018	10/6/2018
LX105-03W	25	8/7/2018		16	9/21/2018	10/6/2018
LX105-04W	7	8/7/2018		16	9/21/2018	10/6/2018

STARTED SUBMITTING 8/6/18 - CAN SUBMIT 14 MORE FOR THIS MONTH.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, February 05, 2018 12:14 PM
To: Hays, Sarah K
Subject: FW: Lexington Market Applications

Good Afternoon Sarah,
Sorry to bug you, I know you were out of town last week and I'm sure you're catching up on everything. These two applications are needed to be submitted by the end of the week and I will be out of town tomorrow and Wednesday.
I was hoping you had some information on this process?
Thank you,

Lauren Sandefur
Permit Specialist

From: Lauren Sandefur
Sent: Thursday, February 1, 2018 9:04 AM
To: 'Sarah.k.hays@windstream.com' <Sarah.k.hays@windstream.com>
Subject: Lexington Market Applications

Good Morning Sarah,
I noticed that we are to fill out a Windstream Pole Attachment Data Sheet. We do provide OCALC's with our application, do we still need to fill out this form?
I can send you an example of our application package if you would like to tell me what all you need from it.
Thanks!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Friday, February 16, 2018 10:19 AM
To: Hays, Sarah K
Subject: FW: LX135-01 Metronet Application
Attachments: Application and pole data sheet.xlsx

Lauren Sandefur
Permit Specialist

From: Edwards, Kimberly [mailto:Kimberly.Edwards@windstream.com]
Sent: Tuesday, February 13, 2018 9:54 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: RE: LX135-01 Metronet Application

Good morning Lauren,

Windstream OSP has reviewed the information you provided and they will accept the Pole Inventory Report in replacement of the Pole Attachment Data Sheets, however they will require a signed standard Windstream Pole Attachment Application form – see attached.

There is a \$75.00 application processing fee – with a maximum of 25 poles/application and a \$50.00 post inspection fee/pole.

Please note: Windstream will accept up to 300/poles per 30 rolling calendar days.

Please let me know of any other questions or concerns.

Thank you,

Kim

Kimberly Edwards
Manager – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Edwards, Kimberly
Sent: Monday, February 12, 2018 7:07 AM

To: 'Lauren Sandefur' <Lauren.Sandefur@metronetinc.com>

Subject: RE: LX135-01 Metronet Application

Good morning Lauren,

The Windstream OSP Managers/Supervisors in the field are currently reviewing the application/inventory report you provided to determine if this is acceptable. Since these are not the Windstream standard forms for pole attachments, I will need their approval to accept.

As soon as they have reviewed and provide their feedback, I will let you know.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Friday, February 09, 2018 11:12 AM

To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>

Subject: RE: LX135-01 Metronet Application

Good Morning Kim,

Per my conversation yesterday with Brandie, she was reviewing our application to see if this would be ok to submit. If you have a chance to review it today that would be great, I just need an update for Monday morning.

Thanks!

Lauren Sandefur

Permit Specialist

From: Lauren Sandefur

Sent: Thursday, February 8, 2018 10:43 AM

To: 'Brandie.Mcgehee@windstream.com' <Brandie.Mcgehee@windstream.com>

Subject: LX135-01 Metronet Application

Good Morning Brandie,

Attached are the files for LX135-01, please let me know if these will work for you.

When applying we have to apply under the name 'CMN-RUS, Inc'.

There is a LX135-02 that will be submitted once we get this one figured out.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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**NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH
BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE N**

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

Name of Firm Applying: _____ Contact Name, Phone # _____
 Street Address, City, ST, ZIP of Firm Applying _____ EMAIL ADDRESS _____
 _____ Authorized Signature & Date: _____

By this application & signature, my firm is agreeing to pay all engineering fees associated with this app
 If we choose to proceed all ESTIMATED fees, including engineering & makeready
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATI
NOTE: Final costs will be determined by actual time & material required to do the make-ready wor

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete
	Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop
1						
2						
3						
4						
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PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE CONSIDERED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

**THE APPLICATION - YOU WILL BE
NO EXCEPTIONS TO THIS POLICY!!!!**

PROPOSAL #:

Submit in Duplicate

application if my firm chooses NOT to proceed with the project.
MUST BE PAID IN FULL UP FRONT.
CONDITIONS BEING PLACED ON HOLD
k. Any difference in charges will be billed accordingly.

Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensor Work Description	Bill for Rent Y or N

ESTIMATED TOTAL COSTS					
IF BE PROCESSED WITHOUT THEM					

ndstream.com.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, February 01, 2018 10:04 AM
To: Hays, Sarah K
Subject: Lexington Market Applications

Good Morning Sarah,

I noticed that we are to fill out a Windstream Pole Attachment Data Sheet. We do provide OCALC's with our application, do we still need to fill out this form?

I can send you an example of our application package if you would like to tell me what all you need from it.

Thanks!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Friday, February 16, 2018 10:45 AM
To: Hays, Sarah K
Subject: Pole Attachment Ex.

Good Morning Sarah,
Is there any way you can provide an example application for us to review? We are wanting to get this right from the beginning.
Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hays, Sarah K
Sent: Monday, February 19, 2018 11:48 AM
To: Lauren Sandefur
Subject: RE: FW: Pole Attachment Ex.

Lauren,

Column 4: WXM is good
Column 5: Highest telephone cable
Column 10 and 11: Windstream completes these including Column 12. It's stated below the Column #

Let me know if you have any other questions.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, February 19, 2018 10:32 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: FW: FW: Pole Attachment Ex.

Good Morning Sarah,
Please see below.
Thanks!

Lauren Sandefur
Permit Specialist

From: David Solomon [mailto:dsolomon@iconengineering.net]
Sent: Monday, February 19, 2018 10:31 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: Re: FW: Pole Attachment Ex.

Hi Lauren,

This helps a little but I still have several questions. I noticed the proposed strand height on her example is only 37" from power and the antenna is higher than the tip of the proposed pole they will be placing.

Column 4: Should we use "WXM" to signify Windstream pole ownership. It would appear so based on her example.
Column 5: Is this actually the highest Telephone cable or highest comm attachment on the pole?
Column 10: Does Icon propose attachment height or Windstream?

Column 11: Does Icon propose MRE or Windstream?

For PLA do we model the pole as it is today (Existing) or with make ready and proposed Metronet plant installed?

David Solomon
National Technical Services Manager
Icon Engineering, Inc.
400 Kimberly Way
Suite 403
Canton, GA. 30114
Office [770-592-9797](tel:770-592-9797)
Cell [770-687-4932](tel:770-687-4932)

On Mon, Feb 19, 2018 at 11:12 AM, Lauren Sandefur <Lauren.Sandefur@metronetinc.com> wrote:

Good Morning!

Here is the example she sent me regarding the WS application.

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Monday, February 19, 2018 9:58 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Subject: RE: Pole Attachment Ex.

Lauren,

Good morning. Here's a snippet of a filled out Exhibit B I received from our manager for the area.

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm is selected to proceed. If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING DENIED.

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any differences will be the responsibility of the applicant.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable
24900-400		408 Marquis Ave, Lexington, KY 40508	4 / 35' / WXM	17'9"	N/A	25'1"

Hope this helps.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

[11101 Anderson Drive, Suite 100 | Little Rock, AR 72212](#)

sarah.k.hays@windstream.com

o: [501.748.5864](tel:501.748.5864) | f: [330.486.3600](tel:330.486.3600)

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Friday, February 16, 2018 9:45 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: Pole Attachment Ex.

Good Morning Sarah,

Is there any way you can provide an example application for us to review? We are wanting to get this right from the beginning.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: [812.213.1328](tel:812.213.1328)

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From: Edwards, Kimberly
Sent: Tuesday, February 13, 2018 10:54 AM
To: Lauren Sandefur
Cc: Hays, Sarah K
Subject: RE: LX135-01 Metronet Application
Attachments: Application and pole data sheet.xlsx

Good morning Lauren,

Windstream OSP has reviewed the information you provided and they will accept the Pole Inventory Report in replacement of the Pole Attachment Data Sheets, however they will require a signed standard Windstream Pole Attachment Application form – see attached.

There is a \$75.00 application processing fee – with a maximum of 25 poles/application and a \$50.00 post inspection fee/pole.

Please note: Windstream will accept up to 300/poles per 30 rolling calendar days.

Please let me know of any other questions or concerns.

Thank you,

Kim

Kimberly Edwards
Manager – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Edwards, Kimberly
Sent: Monday, February 12, 2018 7:07 AM
To: 'Lauren Sandefur' <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01 Metronet Application

Good morning Lauren,

The Windstream OSP Managers/Supervisors in the field are currently reviewing the application/inventory report you provided to determine if this is acceptable. Since these are not the Windstream standard forms for pole attachments, I will need their approval to accept.

As soon as they have reviewed and provide their feedback, I will let you know.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Friday, February 09, 2018 11:12 AM

To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>

Subject: RE: LX135-01 Metronet Application

Good Morning Kim,

Per my conversation yesterday with Brandie, she was reviewing our application to see if this would be ok to submit.

If you have a chance to review it today that would be great, I just need an update for Monday morning.

Thanks!

Lauren Sandefur

Permit Specialist

From: Lauren Sandefur

Sent: Thursday, February 8, 2018 10:43 AM

To: 'Brandie.Mcgehee@windstream.com' <Brandie.Mcgehee@windstream.com>

Subject: LX135-01 Metronet Application

Good Morning Brandie,

Attached are the files for LX135-01, please let me know if these will work for you.

When applying we have to apply under the name 'CMN-RUS, Inc'.

There is a LX135-02 that will be submitted once we get this one figured out.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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**NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH
BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE N**

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

Name of Firm Applying: _____ Contact Name, Phone # _____
 Street Address, City, ST, ZIP of Firm Applying _____ EMAIL ADDRESS _____
 _____ Authorized Signature & Date: _____

By this application & signature, my firm is agreeing to pay all engineering fees associated with this app
 If we choose to proceed all ESTIMATED fees, including engineering & makeready
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATI
NOTE: Final costs will be determined by actual time & material required to do the make-ready wor

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete
	Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop
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PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE CONSIDERED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

**THE APPLICATION - YOU WILL BE
NO EXCEPTIONS TO THIS POLICY!!!!**

PROPOSAL #:

Submit in Duplicate

lication if my firm chooses NOT to proceed with the project.

7 MUST BE PAID IN FULL UP FRONT.

ATIONS BEING PLACED ON HOLD

k. Any difference in charges will be billed accordingly.

Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensor Work Description	Bill for Rent Y or N

ESTIMATED TOTAL COSTS					
IF BE PROCESSED WITHOUT THEM					

ndstream.com.

From: Hays, Sarah K
Sent: Monday, February 19, 2018 10:58 AM
To: Lauren Sandefur
Cc: Edwards, Kimberly
Subject: RE: Pole Attachment Ex.
Attachments: Example Exhibit B.png

Lauren,

Good morning. Here's a snippet of a filled out Exhibit B I received from our manager for the area.

Licensee Signature & Date.

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm is chosen to proceed. If we choose to proceed all **ESTIMATED** fees, including engineering & make-ready **MUST BE PAID** by the licensee. **NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING REJECTED.**

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference will be the responsibility of the licensee.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable
24900-400		408 Marquis Ave, Lexington, KY 40508	4 / 35' / WXM	17'9"	N/A	25'1"

Hope this helps.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Friday, February 16, 2018 9:45 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: Pole Attachment Ex.

Good Morning Sarah,

Is there any way you can provide an example application for us to review? We are wanting to get this right from the beginning.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Winstream to Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmnts on pole	# & type of Attachmnts	Height Licensee to attach at	Licenser Work Description
24900-400		408 Marquis Ave, Lexington, KY 40508	4 / 35' / WXM	17'9"	N/A	25'1"		(1) Strand/Cable	22'0"	Replace with CL 3-45' Pol WIN4367
								(1) Antenna	46'0"	

From: Edwards, Kimberly
Sent: Wednesday, January 31, 2018 4:46 PM
To: Lauren Sandefur
Cc: Hays, Sarah K
Subject: RE: Windstream Pole Application Lexington Market
Attachments: Example Standard Exhibit B.XLS; Pole Attachment Data Sheet.xlsx; Example of Windstream Proposal Form.xls

Good afternoon Lauren,

Attached is the Windstream Pole Attachment Application (Standard Exhibit B) and Pole Attachment Data Sheet. The Windstream Pole Attachment Application allows for 25 poles/application. A completed Pole Attachment Data Sheet is required for each pole listed on the application. Applications and pole data sheet can be submitted to windstream.jointuse@windstream.com for processing.

A Windstream Proposal Form should be submitted for any modification to an existing attachment only.

The Windstream Analyst II assigned to the Lexington, KY area for joint use permitting is Sarah Hays. Sarah's contact information is below and she should be your first point of contact for questions or concerns.

Sarah Hays
Office – 501-748-5864
Email: Sarah.k.hays@windstream.com

Thank you,

Kim

Kimberly Edwards
Manager – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, January 30, 2018 12:34 PM
To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Subject: Windstream Pole Application Lexington Market

Good Afternoon Kim,

I am needing to apply to poles for Windstream in our Lexington market. We have the form that we are supposed to use for our Indy Wreath, I wanted to make sure that this was the same one that we use for Lexington as well.

We do have an engineering company that is putting together a pole loading and engineering analysis sheet, we were unsure if we could use that. Also do we submit these applications to Windstream.jointuse@windstream.com?

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



Company: _____
 Region _____
 Operating Area or Exchange _____
 City, Township or County _____
 State _____



TO _____ AT _____

ANTICIPATED CONSTRUCTION DT: _____

COMMENTS/REASON FOR WORK:

POWER COMPANY POLE NO.	TELEPHONE COMPANY POLE NO.	LOCATION	POLES								MAX	Feet Ex	Ex Height	Sac. Life	Other	Foreign Company Reply	Rentals					
			EXISTING				New		Requirements								VOLTAG E	Foreig n	Billing to Foreign Company		+	-
			Ht	Cl	Year	Jt	Ht	Cl	Foreign	Windstream												
<i>Windstream Poles</i>																						
<i>FOREIGN COMPANY OR JOINT OWNED POLES</i>																						
SUBMITTED BY: _____			CONCURRED BY: _____											TOTAL TO RECAP								
TELE. CO. ORDER NO.: _____			ORDER NO.: _____											RECAPPED								
ORIG. ENG'R: _____ TEL#: _____			ENG'R: _____ AT: _____																			
APPROVED BY: _____ DATE: _____			APPROVED BY _____ DATE: _____											MONTH-YEAR								
TELEPHONE CO. WORK COMPLETE ON: _____			PHYS. WORK COMP. ON: _____ PER: _____											PROPOSAL NO.								
PER: _____														SHEET NO. 1 OF WIN4370								

NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

**PROPOSAL #:
Submit in Duplicate**

Name of Firm Applying: _____ Contact Name, _____
 Phone # _____
 EMAIL ADDRESS _____
 Street Address, _____
 City, ST, ZIP of Firm _____
 Applying _____ Authorized Signature & Date: _____

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
	Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1												
2												
3												
4												
5												
6												
7												
8												
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20												
21												
22												
23												
24												
25												
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

WIN4371

Windstream Pole Attachment Data Sheet

EXHIBIT B- PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER	
STREET LOCATION		NAME OF ATTACHER	
CITY/BORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy			
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT / TOP OF CONDUIT RISER HEIGHT
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; If yes <input type="checkbox"/> Primary <input type="checkbox"/> Secondary	

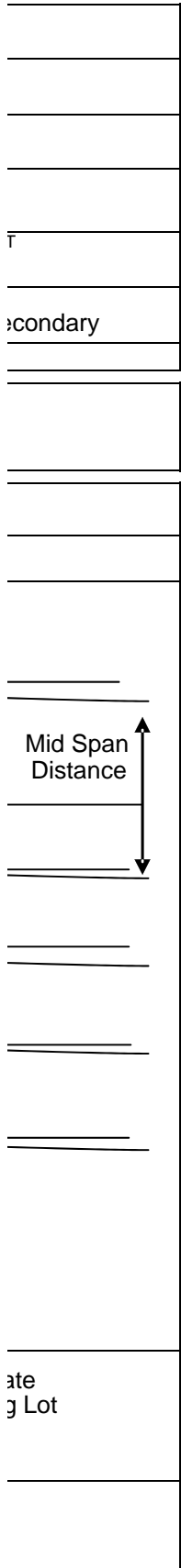
MAKE READY WORK	REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, PROVIDE ADDITIONAL DETAIL

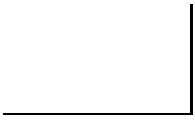
POLE DRAWING	POLE NO. ➡	BEFORE	AFTER	
	TYPE OF POWER ATTACHMENT	<input type="checkbox"/> Neutral <input type="checkbox"/> Secondary		
	Company Name 1. _____ 2. _____ 3. _____ 4. _____			

SPAN	MID-SPAN HEIGHT Ft.	SPAN CROSSES OVER (Check all that apply)				
		<input type="checkbox"/> Body of Water	<input type="checkbox"/> Street	<input type="checkbox"/> Driveway	<input type="checkbox"/> Field	<input type="checkbox"/> Interstate
		<input type="checkbox"/> Swimming Pool	<input type="checkbox"/> Building	<input type="checkbox"/> Railroad	<input type="checkbox"/> Yard	<input type="checkbox"/> Parking

NOTE	
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NOTE





From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, July 12, 2018 3:15 PM
To: Hays, Sarah K; Pizzo, Amanda; Sanders, Ashley L; Hodges, Felicia N
Subject: LX MetroNet Invoicing

All,
I have followed up with Sandy and she is starting on our invoices for Windstream now.
I have a call with our field this afternoon and will pass along the information for Richmond Road.
Thanks!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hays, Sarah K
Sent: Wednesday, July 25, 2018 11:13 AM
To: Lauren Sandefur
Subject: MetroNet/Windstream Call

Good morning, Lauren!

I am going to be out of the office tomorrow and Friday. I wanted to check with you to see if you all at MetroNet still wanted to have the call. Brandie McGehee and Nicole Hodges will be available, so they can host the call if it's still needed for this week.

Let me know. Either way is good for us!

Thanks!

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

windstream.jointuse@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, July 17, 2018 2:39 PM
To: Hodges, Felicia N
Cc: Hays, Sarah K
Subject: RE: Kentucky

Nicole,
I'm just confirming that I can apply 8 more poles for the month of July?
Thanks,

Lauren Sandefur
Permit Specialist

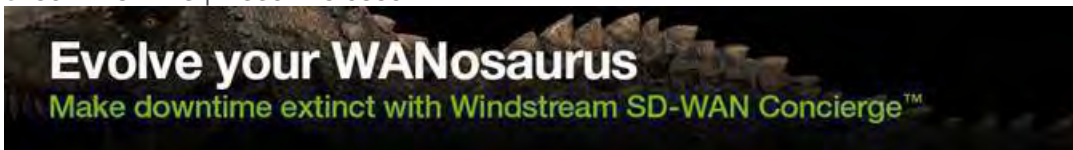
From: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>
Sent: Monday, July 9, 2018 2:42 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>; Permits <Permits@metronetinc.com>
Cc: Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: Kentucky

Lauren,

Good afternoon, hope you enjoyed your 4th of July. I'm sending this email to let you know that as of today 12 applications has been sent to the engineer for a total of 254 poles. You have 46 poles left for the month of July to submit. Let me know if you have any more question or concerns.

Thank you,

Felicia(Nicole)Hodges
Analyst I - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



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From: Hays, Sarah K
Sent: Wednesday, July 25, 2018 11:35 AM
To: Lauren Sandefur
Subject: RE: MetroNet/Windstream Call

Alright, sounds good to me.

Enjoy your vacation! Talk to you in two weeks!

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Wednesday, July 25, 2018 10:32 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: RE: MetroNet/Windstream Call

We can just have the call in two weeks, I am traveling tomorrow!
I will also be on vacation starting July 30th – August 5th, if you guys need anything you can contract our permits distro.

Thank you!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Sent: Wednesday, July 25, 2018 10:13 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: MetroNet/Windstream Call

Good morning, Lauren!

I am going to be out of the office tomorrow and Friday. I wanted to check with you to see if you all at MetroNet still wanted to have the call. Brandie McGehee and Nicole Hodges will be available, so they can host the call if it's still needed for this week.

Let me know. Either way is good for us!

Thanks!

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

windstream.jointuse@windstream.com

o: 501.748.5864 | f: 330.486.3600

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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Wednesday, July 25, 2018 11:32 AM
To: Hays, Sarah K
Subject: RE: MetroNet/Windstream Call

We can just have the call in two weeks, I am traveling tomorrow!
I will also be on vacation starting July 30th – August 5th, if you guys need anything you can contract our permits distro.

Thank you!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Sent: Wednesday, July 25, 2018 10:13 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: MetroNet/Windstream Call

Good morning, Lauren!

I am going to be out of the office tomorrow and Friday. I wanted to check with you to see if you all at MetroNet still wanted to have the call. Brandie McGehee and Nicole Hodges will be available, so they can host the call if it's still needed for this week.

Let me know. Either way is good for us!

Thanks!

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
windstream.jointuse@windstream.com
o: 501.748.5864 | f: 330.486.3600

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From: Addison Burk <Addison.Burk@metronetinc.com>
Sent: Thursday, June 07, 2018 11:46 AM
To: Hays, Sarah K; Pizzo, Amanda
Cc: Lauren Sandefur
Subject: Invoice
Attachments: MN6053584.pdf; MN6053585.pdf; MN6053588.pdf

Greetings,

I have been trying to get ahold of you via phone in regards to the attached invoices. In order for AP to process these, they need to code them correctly. Can you please detail the Labor description and exactly what that entails. Please reach out so we can have a better understanding so that invoices can get paid in a timely manner.

Thank you,

Addison Burk
MetroNet | Permitting Supervisor
| Evansville, IN 47715
Office: 812.213.1167
www.MetronetInc.com



Windstream Kentucky East, LLC

P O Box 18317
Little Rock, AR 72222

Invoice Number: 6053584

Invoice Date: 06/04/2018

Customer #	Customer Reference	Account Number	Due By	Amount Due
MetroNet	219000691-80637	950000000.11845.5000	06/04/2018	\$2,272.46

Please Make Your Check Payable To:

Windstream Communications, LLC
Attn: Misc Billing
P O Box 18317
Little Rock, AR 72222

MetroNet
Accounts Payable
8837 Bond St
Overland,KS 66214

For questions regarding this invoice, please contact Amanda Pizzo at 5017487291
Email: Amanda.Pizzo@Windstream.com .

Invoice Comment Make Ready
Proposal: LX13502W
Permit: JU1634

Engineer: Debbie Sullivan

*Work / Permit will not begin/released until this invoice is paid in full.
Construction will commence upon receipt of payment.*

*This is an estimate only, not a contract. Application fee and engineering costs are due regardless if make ready accepted.
This estimate will expire 30 days from date of invoice.*

<u>Description</u>	<u>Amount</u>
Labor	2093.07
Material	104.39
Permit	75.00
<hr/>	
Total Due	\$2,272.46

Please Return One Copy With Payment

Please include Invoice Number on your check or money order. Late payment charges will be assessed on any unpaid balance.

WIN4383

Windstream Kentucky East, LLC

P O Box 18317
Little Rock, AR 72222

Invoice Number: 6053585

Invoice Date: 06/04/2018

Customer #	Customer Reference	Account Number	Due By	Amount Due
MetroNet	721989721-00023	950000000.11845.5000	06/04/2018	\$5,526.92

Please Make Your Check Payable To:
Windstream Communications, LLC
Attn: Misc Billing
P O Box 18317
Little Rock, AR 72222

MetroNet
Accounts Payable
8837 Bond St
Overland,KS 66214

For questions regarding this invoice, please contact Amanda Pizzo at 5017487291
Email: Amanda.Pizzo@Windstream.com .

Invoice Comment Make Ready
Proposal: LX13501W
Permit: JU 1688

Engineer: Kevin Grigsby

*Work / Permit will not begin/released until this invoice is paid in full.
Construction will commence upon receipt of payment.*

*This is an estimate only, not a contract. Application fee and engineering costs are due regardless if make ready accepted.
This estimate will expire 30 days from date of invoice.*

<u>Description</u>	<u>Amount</u>
Labor	4595.64
Material	856.29
Permit	75.00
<hr/>	
Total Due	\$5,526.92

Please Return One Copy With Payment

Please include Invoice Number on your check or money order. Late payment charges will be assessed on any unpaid balance.

WIN4384

Windstream Kentucky East, LLC

P O Box 18317
Little Rock, AR 72222

Invoice Number: 6053588

Invoice Date: 06/04/2018

Customer #	Customer Reference	Account Number	Due By	Amount Due
MetroNet	721989721-00020&00021	950000000.11845.5000	06/04/2018	\$7,924.79

Please Make Your Check Payable To:

Windstream Communications, LLC
Attn: Misc Billing
P O Box 18317
Little Rock, AR 72222

MetroNet
Accounts Payable
8837 Bond St
Overland,KS 66214

For questions regarding this invoice, please contact Amanda Pizzo at 5017487291
Email: Amanda.Pizzo@Windstream.com .

Invoice Comment Make Ready
Proposal: LX13201W (2 jobs)
Permit: JU 1527

Engineer: Kevin Grigsby

*Work / Permit will not begin/released until this invoice is paid in full.
Construction will commence upon receipt of payment.*

*This is an estimate only, not a contract. Application fee and engineering costs are due regardless if make ready accepted.
This estimate will expire 30 days from date of invoice.*

<u>Description</u>	<u>Amount</u>
Labor	6591.46
Material	1258.33
Permit	75.00

Total Due **\$7,924.79**

Please Return One Copy With Payment

Please include Invoice Number on your check or money order. Late payment charges will be assessed on any unpaid balance.

WIN4385

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Friday, June 29, 2018 9:11 AM
To: Hays, Sarah K; Hodges, Felicia N; Pizzo, Amanda
Cc: Edwards, Kimberly; Mcgehee, Brandie; Sanders, Ashley L; Tom Osborne
Subject: New Metronet Permitting Supervisor

Good Morning,

I just wanted to let you know that we have a new permitting supervisor starting 7/2. His name is Tom Osborne and he should be copied on his emails rather than Addison Burk.

Tom.Osborne@metronetinc.com

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Hays, Sarah K
Sent: Thursday, June 07, 2018 12:14 PM
To: Addison Burk; Pizzo, Amanda
Cc: Lauren Sandefur
Subject: RE: Invoice

Addison,

This has been forwarded onto Amanda Pizzo and her staff manager. I will let you know when I hear back from them about providing this information on the invoices for MetroNet.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Addison Burk [mailto:Addison.Burk@metronetinc.com]
Sent: Thursday, June 07, 2018 10:46 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Pizzo, Amanda <Amanda.Pizzo@windstream.com>
Cc: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: Invoice

Greetings,

I have been trying to get ahold of you via phone in regards to the attached invoices. In order for AP to process these, they need to code them correctly. Can you please detail the Labor description and exactly what that entails. Please reach out so we can have a better understanding so that invoices can get paid in a timely manner.

Thank you,

Addison Burk

MetroNet | Permitting Supervisor

| Evansville, IN 47715

Office: 812.213.1167

www.MetronetInc.com

METRONET.

From: Hays, Sarah K
Sent: Tuesday, June 05, 2018 12:01 PM
To: Lauren Sandefur
Subject: RE: Windstream Application Requirements

Lauren,

I heard back from the engineer, and she said that the O-Cals and photos aren't needed. The other attachments/info are.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Monday, June 04, 2018 2:51 PM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: Windstream Application Requirements

Good Afternoon Sarah,

I have been providing O-Calcs and pole photos for our applications however the information is provided on the Metronet Inventory Report that we provide rather than the Pole Data Sheet.

Can you please let me know if these are required for our submittal process?

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Sent: Thursday, June 07, 2018 11:08 AM
To: Edwards, Kimberly
Cc: Hays, Sarah K; Mcgehee, Brandie; Rucker, Jamie; Lloyd, James; Permits; Pizzo, Amanda
Subject: RE: Windstream Make Ready

Thank you Kim!

Who would I need to contact if I want to discuss taking the burden of dealing with the electrical make ready off of Windstream's plate? With KU, once they approve our applications, we are responsible for hiring an approved contractor chosen by them and completing the necessary work.

I am interested in discussing with the appropriate party the opportunity for us to take care of the make ready work for our applications we put in to you also.

Nicole Sugg

OSP Field Construction Process Manager

From: Edwards, Kimberly [mailto:Kimberly.Edwards@windstream.com]
Sent: Wednesday, June 6, 2018 1:18 PM
To: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>; Pizzo, Amanda <Amanda.Pizzo@windstream.com>
Subject: RE: Windstream Make Ready

Hello Nicole,

I will get with the Poles Team and the field regarding the make ready invoice breakdown or list of average costs per move. More to come on this.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Nicole Sugg [<mailto:Nicole.Sugg@metronetinc.com>]

Sent: Tuesday, June 05, 2018 4:24 PM

To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>

Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>

Subject: RE: Windstream Make Ready

Kim,

Thank you so much for the below. I think this is going to help us immensely moving forward.

Only question I have is in regards to the Make Ready Recommendations. We received invoices but with no attachments itemizing what moves we would be paying for. Can you help me out with understanding that portion of the process?

I can't let my people approve an invoice if we don't know exactly what make ready needs to happen in Windstream's opinion. What would maybe help if you can't give us the breakdown for the invoice is if you can supply my Make Ready Engineer with a list of average costs per move etc. Is that a possibility?

Thanks again,

Nicole Sugg

OSP Field Construction Process Manager

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]

Sent: Monday, June 4, 2018 4:10 PM

To: Nicole Sugg <Nicole.Sugg@metronetinc.com>

Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: FW: Windstream Make Ready

Good afternoon Nicole,

We met with the OSP Manager for Lexington, KY regarding the status of the initial applications received from MetroNet as well as to review the process in the field for processing the applications.

We have three packets (total of 75 poles) in which we are currently preparing the make ready invoices. These should be sent to MetroNet either late this afternoon or early morning tomorrow. We are also expecting the make ready estimates on 4 more packets for an additional 100 poles by the end of this week. The progress on the initial applications has been delayed slightly due to another large pole attachment project in the Lexington, KY area, however resources have been reallocated to mitigate additional delays.

The process in the field for the MetroNet applications is as follows:

- OSP receives the accepted pole attachment application packets from the Windstream Permitting Team
- OSP reviews each of the packets to determine what Windstream exchanges are impacted and to how many poles are impacted per exchange, they review the
- OSP send the application, print, exchange information to the engineering contractor
- The engineering contractor completes the field survey work for each application and create an OSP job for any applicable make ready work required
- The OSP Manager reviews the job and provides approval

- Once the job is fully approved the estimated make ready costs are sent to the Windstream Poles Team
- The Poles Team prepares a make ready invoice and sends to MetroNet
- Once confirmation of payment is received from the Windstream Poles Team – the field distributes the job and the make ready work is scheduled with the contractor.

We have asked the OSP Manager to join the bi-weekly MetroNet KY calls going forward to assist with any questions you may have for OSP Engineering regarding current status.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Edwards, Kimberly

Sent: Friday, June 01, 2018 7:23 AM

To: Nicole.Sugg@metronetinc.com

Cc: Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: Windstream Make Ready

Good morning Nicole,

We have an internal meeting scheduled for Monday - 06/04/2018 to discuss the MetroNet KY applications received and the current status.

I will provide you an update, after this internal meeting, including additional information on the process the field is utilizing for working the applications to complete the make ready estimates and point of contact information for Windstream OSP personnel.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

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From: Edwards, Kimberly
Sent: Wednesday, June 06, 2018 2:18 PM
To: Nicole Sugg
Cc: Hays, Sarah K; Mcgehee, Brandie; Rucker, Jamie; Lloyd, James; Permits; Pizzo, Amanda
Subject: RE: Windstream Make Ready

Hello Nicole,

I will get with the Poles Team and the field regarding the make ready invoice breakdown or list of average costs per move. More to come on this.

Thank you,

Kim

Kimberly Edwards
Manager – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Nicole Sugg [mailto:Nicole.Sugg@metronetinc.com]
Sent: Tuesday, June 05, 2018 4:24 PM
To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Permits <Permits@metronetinc.com>
Subject: RE: Windstream Make Ready

Kim,

Thank you so much for the below. I think this is going to help us immensely moving forward.

Only question I have is in regards to the Make Ready Recommendations. We received invoices but with no attachments itemizing what moves we would be paying for. Can you help me out with understanding that portion of the process?

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Thanks again,

Nicole Sugg

OSP Field Construction Process Manager

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]

Sent: Monday, June 4, 2018 4:10 PM

To: Nicole Sugg <Nicole.Sugg@metronetinc.com>

Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: FW: Windstream Make Ready

Good afternoon Nicole,

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- The engineering contractor completes the field survey work for each application and create an OSP job for any applicable make ready work required
- The OSP Manager reviews the job and provides approval
- Once the job is fully approved the estimated make ready costs are sent to the Windstream Poles Team
- The Poles Team prepares a make ready invoice and sends to MetroNet
- Once confirmation of payment is received from the Windstream Poles Team – the field distributes the job and the make ready work is scheduled with the contractor.

We have asked the OSP Manager to join the bi-weekly MetroNet KY calls going forward to assist with any questions you may have for OSP Engineering regarding current status.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Edwards, Kimberly

Sent: Friday, June 01, 2018 7:23 AM

To: Nicole.Sugg@metronetinc.com

Cc: Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: Windstream Make Ready

Good morning Nicole,

We have an internal meeting scheduled for Monday - 06/04/2018 to discuss the MetroNet KY applications received and the current status.

I will provide you an update, after this internal meeting, including additional information on the process the field is utilizing for working the applications to complete the make ready estimates and point of contact information for Windstream OSP personnel.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

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From: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Sent: Tuesday, June 05, 2018 5:24 PM
To: Edwards, Kimberly
Cc: Hays, Sarah K; Mcgehee, Brandie; Rucker, Jamie; Lloyd, James; Permits
Subject: RE: Windstream Make Ready

Kim,

Thank you so much for the below. I think this is going to help us immensely moving forward.

Only question I have is in regards to the Make Ready Recommendations. We received invoices but with no attachments itemizing what moves we would be paying for. Can you help me out with understanding that portion of the process?

I can't let my people approve an invoice if we don't know exactly what make ready needs to happen in Windstream's opinion. What would maybe help if you can't give us the breakdown for the invoice is if you can supply my Make Ready Engineer with a list of average costs per move etc. Is that a possibility?

Thanks again,

Nicole Sugg

OSP Field Construction Process Manager

From: Edwards, Kimberly [mailto:Kimberly.Edwards@windstream.com]
Sent: Monday, June 4, 2018 4:10 PM
To: Nicole Sugg <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>
Subject: FW: Windstream Make Ready

Good afternoon Nicole,

We met with the OSP Manager for Lexington, KY regarding the status of the initial applications received from MetroNet as well as to review the process in the field for processing the applications.

We have three packets (total of 75 poles) in which we are currently preparing the make ready invoices. These should be sent to MetroNet either late this afternoon or early morning tomorrow. We are also expecting the make ready estimates on 4 more packets for an additional 100 poles by the end of this week. The progress on the initial applications has been delayed slightly due to another large pole attachment project in the Lexington, KY area, however resources have been reallocated to mitigate additional delays.

The process in the field for the MetroNet applications is as follows:

- OSP receives the accepted pole attachment application packets from the Windstream Permitting Team
- OSP reviews each of the packets to determine what Windstream exchanges are impacted and to how many poles are impacted per exchange, they review the
- OSP send the application, print, exchange information to the engineering contractor

- The engineering contractor completes the field survey work for each application and create an OSP job for any applicable make ready work required
- The OSP Manager reviews the job and provides approval
- Once the job is fully approved the estimated make ready costs are sent to the Windstream Poles Team
- The Poles Team prepares a make ready invoice and sends to MetroNet
- Once confirmation of payment is received from the Windstream Poles Team – the field distributes the job and the make ready work is scheduled with the contractor.

We have asked the OSP Manager to join the bi-weekly MetroNet KY calls going forward to assist with any questions you may have for OSP Engineering regarding current status.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Edwards, Kimberly

Sent: Friday, June 01, 2018 7:23 AM

To: Nicole.Sugg@metronetinc.com

Cc: Mcgehee, Brandie <Brandie.Mcgehee@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Subject: Windstream Make Ready

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I will provide you an update, after this internal meeting, including additional information on the process the field is utilizing for working the applications to complete the make ready estimates and point of contact information for Windstream OSP personnel.

Please let me know of any questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

Kimberly.edwards@windstream.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, June 04, 2018 3:51 PM
To: Hays, Sarah K
Subject: Windstream Application Requirements

Good Afternoon Sarah,
I have been providing O-Calcs and pole photos for our applications however the information is provided on the Metronet Inventory Report that we provide rather than the Pole Data Sheet.
Can you please let me know if these are required for our submittal process?

Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, March 06, 2018 1:16 PM
To: Hays, Sarah K
Subject: FW: LX Application

Sarah,

That was the email I was referring to!

We have 350 poles on backlog for Windstream we are hoping to start submitting this week if we get approval on that application.

Thank you,

Lauren Sandefur

Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Monday, March 5, 2018 2:29 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX Application

Lauren,

I found it from 3/1. Is this the email you are talking about?

We should get it processed today and let you know.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Monday, March 05, 2018 9:35 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: LX Application

Good Morning Sarah,

I submitted an application for Lexington last week. I was just wondering if you could let me know if I left anything out or if that was all the information that was needed.

I have several others that I'm ready to send off, we're just waiting on approval of that one.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328
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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, March 06, 2018 3:07 PM
To: Hays, Sarah K
Subject: FW: LX Application

Sarah,
Thank you very much!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Tuesday, March 6, 2018 1:49 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX Application

Lauren,

Nicole has sent it on our OSP Manager for the area so she can have a look at it and make sure it meets our requirements.

We'll let you know.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 06, 2018 12:16 PM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: FW: LX Application

Sarah,

That was the email I was referring to!

We have 350 poles on backlog for Windstream we are hoping to start submitting this week if we get approval on that application.

Thank you,

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Monday, March 5, 2018 2:29 PM

To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>

Subject: RE: LX Application

Lauren,

I found it from 3/1. Is this the email you are talking about?

We should get it processed today and let you know.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Monday, March 05, 2018 9:35 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: LX Application

Good Morning Sarah,

I submitted an application for Lexington last week. I was just wondering if you could let me know if I left anything out or if that was all the information that was needed.

I have several others that I'm ready to send off, we're just waiting on approval of that one.

Thank you,

Lauren Sandefur

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3701 Communications Way | Evansville, IN 47715

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METRONET.

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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Friday, March 09, 2018 9:28 AM
To: Hays, Sarah K
Cc: Edwards, Kimberly
Subject: FW: LX Pole Photos

Yes, our application does state that but we were wondering how you would like the pole photos. Either with existing attachments as it is today or with our make ready proposed.
Thanks,

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Friday, March 9, 2018 8:24 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: RE: LX Pole Photos

Lauren,

MetroNet will need to note on the applications where they are wanting to attach and where they are wanting Windstream to lower/move to. MetroNet cannot move or touch Windstream facilities.

Let me know if you have any questions.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, March 08, 2018 3:29 PM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: LX Pole Photos

Good afternoon Sarah,
As far as our pole photos for PLA do we model the pole as it is today (Existing) or with make ready and proposed Metronet plant installed?
I would assume the second since we are doing our own make ready for these poles?
Thanks,

Lauren Sandefur
Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Wednesday, March 14, 2018 9:37 AM
To: Windstream Jointuse
Cc: Hays, Sarah K
Subject: FW: LX132-01W
Attachments: LX132-01W Pole App Map.pdf; O-Calcs.pdf; Pole Photos.pdf; Map Key.pdf; LX132-01W - Windstream Inventory Report.pdf; LX132-01W - METRONET POLE INVENTORY REPORT.XLSX

Good Morning,
Please see attached for the proposal titled LX132-01W. This is a proposal for Windstream Poles. Let me know if you have questions or anything else.
Thanks!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



9W	501-12		WS
9W	501-12		WS
9W	501-12		WS
9W	501-12		WS
9W	501-12		WS
9W	501-12		WS
9W	501-12		WS
9W	501-12		WS
9W	501-12		WS
10W	501-12-40	40/3	WS 2=Comms
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
10W	501-12-40		WS
11W	501-13	45/3	WS 2=Comms
11W	501-13		WS
11W	501-13		WS
11W	501-13		WS
11W	501-13		WS
11W	501-13		WS
11W	501-13		WS
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11W	501-13		WS
11W	501-13		WS
11W	501-13		WS
11W	501-13		WS
11W	501-13		WS
12W	501-14	40/3	WS 2=Comms
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
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12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS
12W	501-14		WS

13W	NT	45/3	WS	1=None
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
13W	NT		WS	
14W	501-15	45/2	WS	1=None
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
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14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
14W	501-15		WS	
42W	00501-34	45/3	WS	1=None
42W	00501-34		WS	
42W	00501-34		WS	
42W	00501-34		WS	
42W	00501-34		WS	
42W	00501-34		WS	
43W	00501-35	45/3	WS	1=None
43W	00501-35		WS	
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44W	00501-36	45/3	WS	1=None
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44W	00501-36		WS	
44W	00501-36		WS	
44W	00501-36		WS	
44W	00501-36		WS	

45W	501-37	55/2	WS	1=None	
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45W	501-37		WS		
45W	501-37		WS		
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45W	501-37		WS		
46W	501-38	50/2	WS	1=None	
46W	501-38		WS		
46W	501-38		WS		
46W	501-38		WS		
46W	501-38		WS		
46W	501-38		WS		
46W	501-38		WS		
47W	501-40	45/3	WS	1=None	
47W	501-40		WS		
47W	501-40		WS		
47W	501-40		WS		
47W	501-40		WS		
47W	501-40		WS		
47W	501-40		WS		
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47W	501-40		WS		
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47W	501-40		WS		
47W	501-40		WS		
129W	24546-32	30/4	WS	1=None	
129W	24546-32		WS		
129W	24546-32		WS		
140W	501-61	40/3	WS	2=Comms	
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140W	501-61		WS		
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140W	501-61		WS		
140W	501-61		WS		
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140W	501-61		WS		
140W	501-61		WS		

140W	501-61		WS	
140W	501-61		WS	
140W	501-61		WS	
145W	80939-12645	40/2	WS	2=Comms
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145W	80939-12645		WS	
145W	80939-12645		WS	
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145W	80939-12645		WS	
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145W	80939-12645		WS	
146W	81061-12801	35/4	WS	2=Comms
146W	81061-12801		WS	
146W	81061-12801		WS	
146W	81061-12801		WS	
146W	81061-12801		WS	
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146W	81061-12801		WS	
146W	81061-12801		WS	
146W	81061-12801		WS	
147W	81101-12851	40/2	WS	2=Comms
147W	81101-12851		WS	
147W	81101-12851		WS	
147W	81101-12851		WS	
147W	81101-12851		WS	
147W	81101-12851		WS	
148W	81178-12946	40/3	WS	2=Comms
148W	81178-12946		WS	
148W	81178-12946		WS	
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148W	81178-12946		WS	
149W	81262-13055	40/4	WS	2=Comms

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149W	81262-13055		WS
149W	81262-13055		WS
149W	81262-13055		WS
149W	81262-13055		WS
149W	81262-13055		WS
150W	81335-13147	40/4	WS 2=Comms
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
150W	81335-13147		WS
151W	81399-13229	40/3	WS 1=None
151W	81399-13229		WS
151W	81399-13229		WS
151W	81399-13229		WS
151W	81399-13229		WS
151W	81399-13229		WS
151W	81399-13229		WS
152W	81499-13354	40/4	WS 2=Comms
152W	81499-13354		WS
152W	81499-13354		WS
152W	81499-13354		WS
152W	81499-13354		WS
152W	81499-13354		WS
152W	81499-13354		WS
152W	81499-13354		WS
152W	81499-13354		WS
152W	81499-13354		WS
END			

Owner	1=None	2=Comms	5=Simple PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude
by :	4=Comms&Elec	6=Complex PCO						Existing

	23.80	180 CODELL DR	38.01299	-84.45430	KU
			38.01299	-84.45430	KU
			38.01299	-84.45430	Metronet
Lower Charter			38.01299	-84.45430	Charter
	37.80	180 CODELL DR	38.01292	-84.45409	KU
			38.01292	-84.45409	KU
			38.01292	-84.45409	KU
			38.01292	-84.45409	KU
			38.01292	-84.45409	KU
			38.01292	-84.45409	KU
			38.01292	-84.45409	KU
			38.01292	-84.45409	KU
			38.01292	-84.45409	KU
Lower Charter			38.01292	-84.45409	Metronet
Attach to new pole			38.01292	-84.45409	Charter
Attach to new pole			38.01292	-84.45409	Windstream
Attach to new pole			38.01292	-84.45409	Windstream
	58.90	237 CODELL DR	38.01279	-84.45359	KU
			38.01279	-84.45359	KU
			38.01279	-84.45359	KU
			38.01279	-84.45359	KU
			38.01279	-84.45359	KU
			38.01279	-84.45359	KU
			38.01279	-84.45359	KU
			38.01279	-84.45359	KU
Lower Charter			38.01279	-84.45359	Metronet
Lower Windstream			38.01279	-84.45359	Charter
Lower Windstream			38.01279	-84.45359	Windstream
	33.30	221 CODELL DR	38.01266	-84.45313	KU
			38.01266	-84.45313	KU
			38.01266	-84.45313	KU
			38.01266	-84.45313	KU
			38.01266	-84.45313	KU

			38.01266	-84.45313	KU
			38.01266	-84.45313	KU
			38.01266	-84.45313	KU
			38.01266	-84.45313	Metronet
Lower Charter			38.01266	-84.45313	Charter
Lower Windstream			38.01266	-84.45313	Windstream
Lower Windstream			38.01266	-84.45313	Windstream
Lower Windstream			38.01266	-84.45313	Windstream
	24.90	219 CODELL DR	38.01258	-84.45284	KU
			38.01258	-84.45284	KU
			38.01258	-84.45284	KU
			38.01258	-84.45284	KU
			38.01258	-84.45284	KU
			38.01258	-84.45284	KU
			38.01258	-84.45284	Metronet
Lower Charter			38.01258	-84.45284	Charter
Lower Windstream			38.01258	-84.45284	Windstream
Lower Windstream			38.01258	-84.45284	Windstream
Lower Windstream			38.01258	-84.45284	Windstream
	40.30	215 CODELL DR	38.01250	-84.45260	KU
			38.01250	-84.45260	KU
			38.01250	-84.45260	KU
			38.01250	-84.45260	KU
			38.01250	-84.45260	KU
			38.01250	-84.45260	KU
			38.01250	-84.45260	KU
			38.01250	-84.45260	KU
			38.01250	-84.45260	Metronet
Lower Charter			38.01250	-84.45260	Charter
Lower Windstream			38.01250	-84.45260	Windstream
Lower Windstream			38.01250	-84.45260	Windstream
Lower Windstream			38.01250	-84.45260	Windstream
	31.60	2618 CHANT DR	38.01237	-84.45210	KU
			38.01237	-84.45210	KU
			38.01237	-84.45210	KU
			38.01237	-84.45210	KU
			38.01237	-84.45210	KU
			38.01237	-84.45210	KU
			38.01237	-84.45210	KU
			38.01237	-84.45210	KU
			38.01237	-84.45210	Metronet
Lower Charter			38.01237	-84.45210	Charter
Lower Windstream			38.01237	-84.45210	Windstream
Lower Windstream			38.01237	-84.45210	Windstream
Lower Windstream			38.01237	-84.45210	Windstream
Lower Windstream			38.01237	-84.45210	Windstream

	22.20	2618 CHANT DR	38.01233	-84.45194	KU
			38.01233	-84.45194	KU
			38.01233	-84.45194	KU
			38.01233	-84.45194	KU
			38.01233	-84.45194	Metronet
			38.01233	-84.45194	Charter
Attach to pole			38.01233	-84.45194	Windstream
Attach to pole			38.01233	-84.45194	Windstream
Attach to pole			38.01233	-84.45194	Windstream
	43.70	2630 CHANT DR	38.01222	-84.45154	KU
			38.01222	-84.45154	KU
			38.01222	-84.45154	KU
			38.01222	-84.45154	KU
			38.01222	-84.45154	KU
			38.01222	-84.45154	KU
			38.01222	-84.45154	KU
			38.01222	-84.45154	KU
			38.01222	-84.45154	Metronet
			38.01222	-84.45154	Metronet
			38.01222	-84.45154	Charter
			38.01222	-84.45154	Windstream
			38.01222	-84.45154	Windstream
			38.01222	-84.45154	Windstream
			38.01222	-84.45154	Windstream
			38.01222	-84.45154	Windstream
	22.50	2700 OLD TODDS RD	38.00966	-84.44241	KU
			38.00966	-84.44241	KU
			38.00966	-84.44241	KU
			38.00966	-84.44241	Metronet
			38.00966	-84.44241	Charter
			38.00966	-84.44241	Windstream
	22.90	2700 OLD TODDS RD	38.00960	-84.44194	KU
			38.00960	-84.44194	KU
			38.00960	-84.44194	Metronet
			38.00960	-84.44194	Charter
			38.00960	-84.44194	Windstream
	12.00	2700 OLD TODDS RD	38.00956	-84.44138	KU
			38.00956	-84.44138	KU
			38.00956	-84.44138	KU
			38.00956	-84.44138	Metronet
			38.00956	-84.44138	Charter
			38.00956	-84.44138	Windstream

	24.50	2700 OLD TODDS RD	38.00954	-84.44090	KU
			38.00954	-84.44090	KU
			38.00954	-84.44090	KU
			38.00954	-84.44090	KU
			38.00954	-84.44090	KU
			38.00954	-84.44090	Metronet
			38.00954	-84.44090	Charter
			38.00954	-84.44090	Windstream
	21.80	397 PINEWOOD CT	38.00951	-84.44031	KU
			38.00951	-84.44031	KU
			38.00951	-84.44031	KU
			38.00951	-84.44031	KU
			38.00951	-84.44031	Metronet
			38.00951	-84.44031	Charter
			38.00951	-84.44031	Windstream
	56.20	2850 OLD TODDS RD	38.00949	-84.43990	KU
			38.00949	-84.43990	KU
			38.00949	-84.43990	KU
			38.00949	-84.43990	KU
			38.00949	-84.43990	KU
			38.00949	-84.43990	KU
			38.00949	-84.43990	KU
			38.00949	-84.43990	Metronet
			38.00949	-84.43990	Charter
			38.00949	-84.43990	Charter
			38.00949	-84.43990	Windstream
			38.00949	-84.43990	Windstream
	10.00	409 BAINBRIDGE CT	38.00679	-84.42891	Metronet
Attach to pole			38.00679	-84.42891	Charter
			38.00679	-84.42891	Windstream
	77.50	626 CADEN LN	38.00918	-84.42748	KU
			38.00918	-84.42748	KU
			38.00918	-84.42748	KU
			38.00918	-84.42748	KU
			38.00918	-84.42748	KU
			38.00918	-84.42748	KU
			38.00918	-84.42748	KU
			38.00918	-84.42748	KU
			38.00918	-84.42748	Metronet
Lower Level 3			38.00918	-84.42748	Level 3
Lower Charter			38.00918	-84.42748	Charter
Lower Windstream			38.00918	-84.42748	Windstream

Lower Windstream	38.00918	-84.42748	Windstream
Lower Windstream	38.00918	-84.42748	Windstream
Lower Windstream	38.00918	-84.42748	Windstream
33.40 705 CADEN LN	38.01054	-84.42902	KU
	38.01054	-84.42902	KU
	38.01054	-84.42902	KU
	38.01054	-84.42902	KU
	38.01054	-84.42902	KU
	38.01054	-84.42902	KU
	38.01054	-84.42902	KU
	38.01054	-84.42902	KU
	38.01054	-84.42902	Metronet
Lower Charter	38.01054	-84.42902	Charter
	38.01054	-84.42902	Windstream
25.30 752 CADEN LN	38.01089	-84.42861	KU
	38.01089	-84.42861	KU
	38.01089	-84.42861	KU
	38.01089	-84.42861	KU
	38.01089	-84.42861	KU
	38.01089	-84.42861	KU
	38.01089	-84.42861	Metronet
Lower Charter	38.01089	-84.42861	Charter
Lower Windstream	38.01089	-84.42861	Windstream
21.30 752 CADEN LN	38.01112	-84.42838	KU
	38.01112	-84.42838	KU
	38.01112	-84.42838	KU
	38.01112	-84.42838	Metronet
Lower Charter	38.01112	-84.42838	Charter
Lower Windstream	38.01112	-84.42838	Windstream
37.30 752 CADEN LN	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	KU
	38.01133	-84.42815	Metronet
Lower Charter	38.01133	-84.42815	Charter
Lower Windstream	38.01133	-84.42815	Windstream
43.80 772 CADEN LN	38.01162	-84.42783	KU

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
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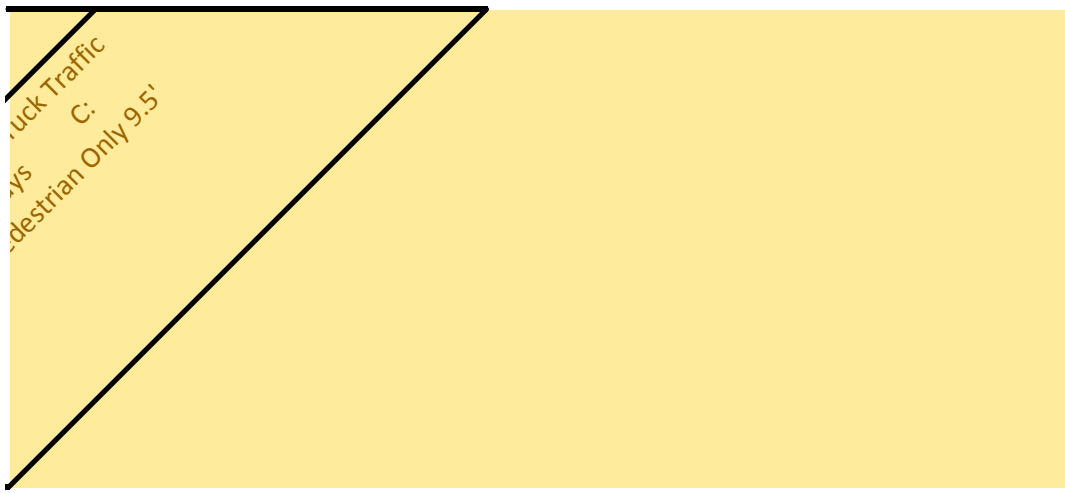
Primary	35' 9"				N	N		D: Pedestrian Only 9.5'		
Neutral	28' 4"				N	N				
Communication		24'9"			N	N				
Communication	24' 9"	23'9"	21'10"	66	N	N				
Primary	34' 2"				N	N		B: Residential/Over Driveways		
Primary	30' 6"				N	N				
Neutral	27' 1"				N	N				
Neutral	26' 11"				N	N				
Secondary	26' 4"				N	N				
Secondary	26' 0"				N	N				
Secondary	25' 4"				N	N				
Streetlight	22' 7"				N	N				
Communication		21'4"			N	N				
Communication	21' 4"	20'4"		32	N	N				
Communication		19'4"			N	N				
Communication		18'4"			N	N				
Communication		17'4"	16'11"		N	N				
Primary	34' 11"				Y	N		D: Pedestrian Only 9.5'		
Primary	34' 6"				Y	N				
Transformer	28' 8"				Y	N				
Neutral	27' 6"				Y	N				
Secondary	26' 8"				Y	N				
Secondary	26' 1"				Y	N				
Secondary Riser	24' 9"				Y	N				
Communication		21'3"			Y	N				
Communication	23' 0"	20'1"		77	Y	N				
Communication	21' 3"	19'1"			Y	N				
Communication	20' 1"	18'1"	17'10"		Y	N				
Primary	34' 5"				Y	Y		D: Pedestrian Only 9.5'		
Primary	33' 9"				Y	Y				
Primary Riser	28' 8"				Y	Y				
Neutral	26' 8"				Y	Y				
Secondary	25' 10"				Y	Y				

Secondary Riser	24' 11"			Y	Y	
Streetlight	24' 4"			Y	Y	
Streetlight Drip Loop	23' 11"			Y	Y	
Communication		21'7"		Y	Y	
Communication	23' 0"	20'6"	20	Y	Y	
Communication	21' 7"	19'5"		Y	Y	
Communication	20' 6"	18'5"		Y	Y	
Communication	19' 5"	17'5"	18'4"	Y	Y	
Primary	34' 7"			Y	N	D: Pedestrian Only 9.5'
Primary	34' 2"			Y	N	
Transformer	28' 3"			Y	N	
Neutral	26' 11"			Y	N	
Secondary	25' 11"			Y	N	
Secondary Drip Loop	25' 0"			Y	N	
Communication		21'4"		Y	N	
Communication	22' 10"	19'4"	44	Y	N	
Communication	20' 4"	18'2"		Y	N	
Communication	19' 4"	17'2"		Y	N	
Communication	18' 2"	16'2"	18'4"	Y	N	
Primary	36' 4"			Y	N	B:Residential/Over Driveways
Primary	35' 11"			Y	N	
Primary	33' 8"			Y	N	
Secondary Riser	29' 7"			Y	N	
Neutral	29' 0"			Y	N	
Streetlight	27' 9"			Y	N	
Secondary	27' 6"			Y	N	
Streetlight Drip Loop	25' 10"			Y	N	
Communication		24'2"		Y	N	
Communication	25' 3"	23'2"	70	Y	N	
Communication	22' 6"	22'2"		Y	N	
Communication	21' 5"	21'1"		Y	N	
Communication	20' 3"	19'11"	17'10"	Y	N	
Primary	34' 10"			Y	N	D: Pedestrian Only 9.5'
Primary	34' 5"			Y	N	
Transformer	27' 3"			Y	N	
Neutral	26' 9"			Y	N	
Secondary Riser	25' 8"			Y	N	
Streetlight	24' 0"			Y	N	
Secondary Drip Loop	23' 10"			Y	N	
Communication		20'6"		Y	N	
Communication	23' 0"	19'8"	57	Y	N	
Communication	21' 8"	19'4"		Y	N	
Communication	20' 6"	18'3"		Y	N	
Communication	19' 4"	17'3"		Y	N	
Communication	18' 3"	16'3"	17'5"	Y	N	

Primary	38' 6"			N	N	D: Pedestrian Only 9.5'
Primary	38' 1"			N	N	
Primary	34' 7"			N	N	
Neutral	27' 9"			N	N	
Communication		23'5"		N	N	
Communication	22' 5"		66	N	N	
Communication		21'5"		N	N	
Communication		20'5"		N	N	
Communication		19'5"	17'9"	N	N	
Primary	39' 9"			N	N	B:Residential/Over Driveways
Primary	39' 4"			N	N	
Primary	35' 6"			N	N	
Neutral	31' 5"			N	N	
Primary Riser	30' 7"			N	N	
Neutral	30' 2"			N	N	
Secondary	29' 1"			N	N	
Streetlight	27' 9"			N	N	
Communication		24'11"		N	N	
Communication		24'7"		N	N	
Communication	23' 11"			N	N	
Communication	22' 11"			N	N	
Communication	21' 11"	16'2"	66	N	N	
Communication	21' 6"			N	N	
Communication	20' 9"			N	N	
Communication	19' 11"			N	N	
Primary	37' 3"			N	N	B:Residential/Over Driveways
Transformer	30' 0"			N	N	
Neutral	29' 10"			N	N	
Communication		26'5"		N	N	
Communication	25' 5"		54	N	N	
Communication	22' 5"	23'5"		N	N	
Primary	37' 10"			N	N	D: Pedestrian Only 9.5'
Neutral	31' 3"			N	N	
Communication		26'11"		N	N	
Communication	25' 11"		57	N	N	
Communication	22' 7"	20'0"		N	N	
Primary	38' 4"			N	N	D: Pedestrian Only 9.5'
Down Guy	35' 4"			N	N	
Neutral	31' 3"			N	N	
Communication		27'2"		N	N	
Communication	26' 2"		97	N	N	
Communication	23' 6"	20'8"		N	N	

Primary	46' 8"		N	N	B:Residential/Over Driveways	
Neutral	39' 5"		N	N		
Primary Riser	39' 1"		N	N		
Secondary	38' 1"		N	N		
Secondary Riser	37' 11"		N	N		
Communication		27'9"	N	N		
Communication	26' 9"		101	N	N	
Communication	23' 7"	23'4"	N	N		
Primary	41' 11"		N	N	D: Pedestrian Only 9.5'	
Transformer	35' 6"		N	N		
Neutral	34' 7"		N	N		
Secondary	33' 4"		N	N		
Communication		26'3"	N	N		
Communication	25' 3"		80	N	N	
Communication	22' 4"	18'8"	N	N		
Primary	38' 0"		N	N	D: Pedestrian Only 9.5'	
Primary	37' 9"		N	N		
Down Guy	34' 7"		N	N		
Down Guy	34' 4"		N	N		
Neutral	31' 0"		N	N		
Neutral	30' 9"		N	N		
Secondary	29' 8"		N	N		
Communication		26'4"	N	N		
Communication	25' 5"		N	N		
Communication	25' 1"		78	N	N	
Communication	23' 6"		N	N		
Communication	23' 1"	17'7"	N	N		
Communication		21'1"	63	N	N	B:Residential/Over Driveways
Communication		20'1"	N	N		
Communication	19' 1"	19'7"	N	N		
Primary	33' 1"		Y	N	B:Residential/Over Driveways	
Primary	32' 10"		Y	N		
Neutral	26' 6"		Y	N		
Secondary	26' 4"		Y	N		
Secondary Drip Loop	24' 9"		Y	N		
Streetlight	24' 1"		Y	N		
Streetlight	23' 9"		Y	N		
Streetlight Drip Loop	23' 6"		Y	N		
Communication		21'5"	Y	N		
Communication	22' 3"	20'5"	Y	N		
Communication	21' 9"	19'5"	48	Y	N	
Communication	20' 9"	18'5"	Y	N		

Communication	19' 11"	17'5"		Y	N	
Communication	19' 0"	17'1"		Y	N	
Communication	17' 11"	16'5"	19'8"	Y	N	
Primary	33' 2"			N	Y	D: Pedestrian Only 9.5'
Transformer	27' 2"			N	Y	
Neutral	26' 1"			N	Y	
Secondary	25' 11"			N	Y	
Secondary	25' 1"			N	Y	
Secondary	24' 2"			N	Y	
Streetlight	22' 10"			N	Y	
Streetlight Drip Loop	22' 6"			N	Y	
Communication		19'9"		N	Y	
Communication	20' 5"	18'9"	25	N	Y	
Communication	17' 9"		15'1"	N	Y	
Primary	28' 1"			Y	N	D: Pedestrian Only 9.5'
Neutral	21' 9"			Y	N	
Secondary	21' 6"			Y	N	
Secondary	21' 1"			Y	N	
Streetlight	19' 11"			Y	N	
Streetlight Drip Loop	19' 8"			Y	N	
Communication		17'8"		Y	N	
Communication	18' 11"	16'8"	51	Y	N	
Communication	17' 11"	15'8"	15'8"	Y	N	
Primary	33' 4"			N	N	D: Pedestrian Only 9.5'
Transformer	26' 3"			N	N	
Neutral	25' 3"			N	N	
Communication		21'2"		N	N	
Communication	21' 2"	20'1"	65	N	N	
Communication	20' 1"	19'1"	18'1"	N	N	
Primary	32' 11"			N	N	B:Residential/Over Driveways
Transformer	27' 5"			N	N	
Neutral	26' 9"			N	N	
Secondary	26' 1"			N	N	
Secondary	25' 6"			N	N	
Secondary Riser	25' 4"			N	N	
Streetlight	25' 2"			N	N	
Secondary	24' 10"			N	N	
Streetlight Drip Loop	24' 6"			N	N	
Communication		21'5"		N	N	
Communication	21' 1"	20'5"	86	N	N	
Communication	20' 5"	19'5"	17'0"	N	N	
Primary	35' 3"			N	N	B:Residential/Over Driveways



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX132-01W

Submit in Duplicate

Name of Firm Applying: CMN, RUS, Inc Contact Name, Phone #: Lauren Sandefur 812.212.1328
 EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Lauren Sandefur

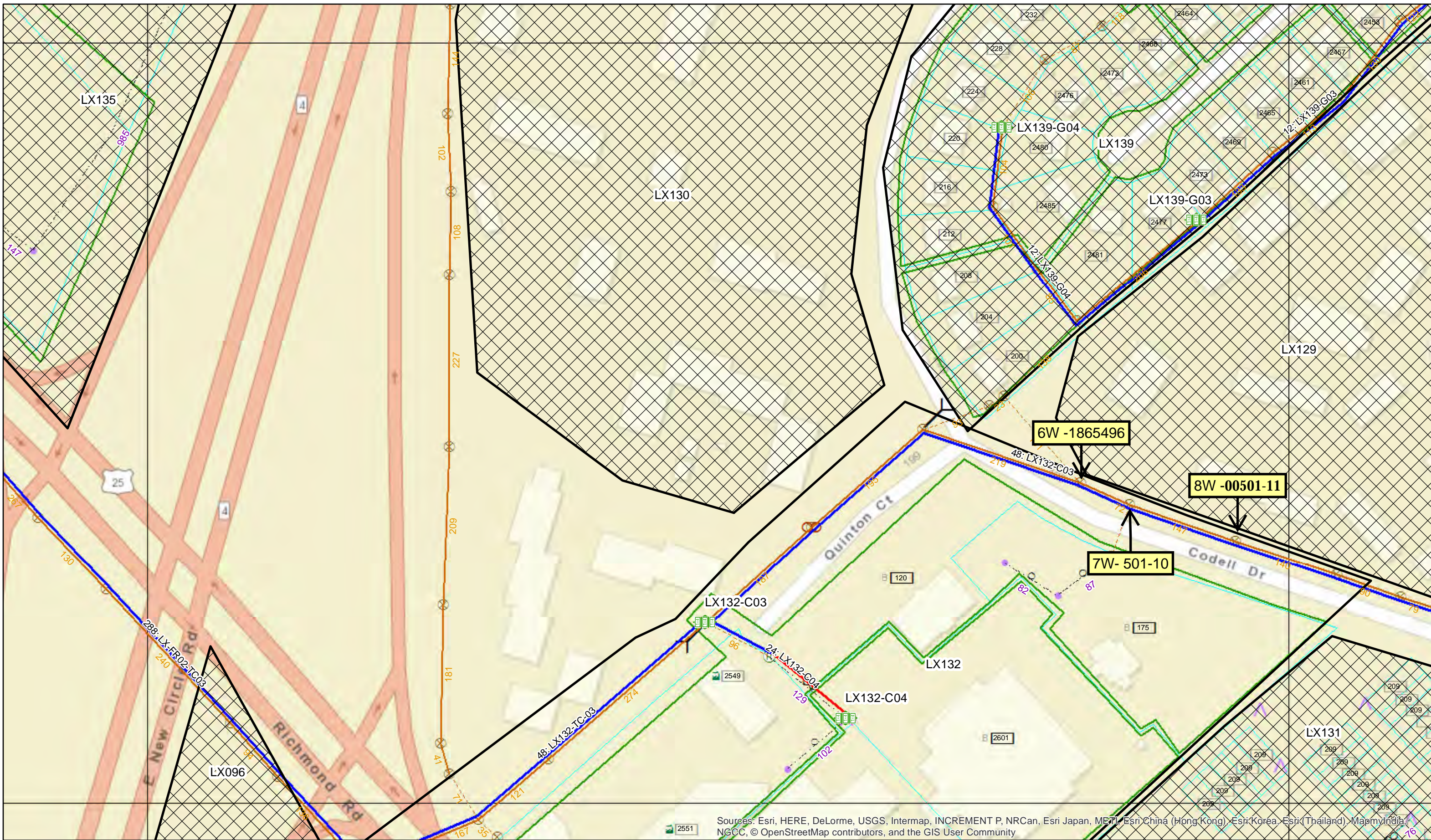
By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	1865496	6W	180 Codell Dr, Lexington, 40509	45, 3, WXM	N/A	N/A	28'4"	(1)Fiber/Strand			
2	501-10	7W	180 Codell Dr, Lexington, 40509	40, 3, WXM	N/A	N/A	25'4"	(1)Fiber/Strand			
3	00501-11	8W	239 Alsab Ct, Lexington, 40509	40, 3, WXM	20'1"	N/A	26'1"	(1)Fiber/Strand			
4	501-12	9W	221 Alsab Ct, Lexington, 40509	40, 3, WXM	20'6"	23'7"	25'10"	(1)Fiber/Strand			
5	501-12-40	10W	217 Alsab Ct, Lexington, 40509	40, 3, WXM	19'4"	21'2"	25'11"	(1)Fiber/Strand			
6	501-13	11W	215 Alsab Ct, Lexington, 40509	45, 3, WXM	21'5"	N/A	27'6"	(1)Fiber/Strand			
7	501-14	12W	2618 Chant Ct, Lexington, 40509	40, 3, WXM	19'4"	21'8"	26'9"	(1)Fiber/Strand			
8	NT	13W	2618 Chant Ct, Lexington, 40509	45, 3, WXM	N/A	N/A	27'9"	(1)Fiber/Strand			
9	501-15	14W	2618 Chant Ct, Lexington, 40509	45, 2, WXM	21'11"	N/A	29'1"	(1)Fiber/Strand			
10	00501-34	42W	2704 Chelsea Woods Ct, Lexington	45, 3, WXM	22'5"	N/A	29'10"	(1)Fiber/Strand			
11	00501-35	43W	2716 Chelsea Woods Ct, Lexington	45, 3, WXM	22'7"	N/A	31'3"	(1)Fiber/Strand			
12	00501-36	44W	2740 Chelsea Woods Ct, Lexington	45, 3, WXM	23'6"	N/A	31'3"	(1)Fiber/Strand			
13	501-37	45W	396 Pinewood Ct, Lexington, 4050	55, 2, WXM	23'7"	N/A	38'1"	(1)Fiber/Strand			
14	501-38	46W	397 Pinewood Ct, Lexington, 4050	50, 2, WXM	22'4"	N/A	33'4"	(1)Fiber/Strand			
15	501-40	47W	397 Pinewood Ct, Lexington, 4050	45, 3, WXM	23'6"	N/A	29'8"	(1)Fiber/Strand			
16	24546-32	129W	409 Man O War Blvd, Lexington, 4	30, 4, WXM	19'1"	N/A	N/A	(1)Fiber/Strand			
17	501-61	140W	626 Caden Ln, Lexington, 40509	40, 3, WXM	19'11"	N/A	26'4"	(1)Fiber/Strand			
18	80939-12645	145W	705 Caden Ln, Lexington, 40509	40, 2, WXM	17'9"	N/A	24'2"	(1)Fiber/Strand			
19	81061-12801	146W	731 Caden Ln, Lexington, 40509	35, 4, WXM	17'11"	N/A	21'1"	(1)Fiber/Strand			

20	81101-12851	147W	749 Caden Ln, Lexington, 40509	40, 2, WXM	20'1"	N/A	25'3"		(1)Fiber/Strand			
21	81178-12946	148W	752 Caden Ln, Lexington, 40509	40, 3, WXM	20'5"	21'10"	26'9"		(1)Fiber/Strand			
22	81262-13055	149W	772 Caden Ln, Lexington, 40509	40, 4, WXM	21'4"	21'10"	26'3"		(1)Fiber/Strand			
23	81335-13147	150W	784 Caden Ln, Lexington, 40509	40, 4, WXM	21'11"	22'0"	27'0"		(1)Fiber/Strand			
24	81399-13229	151W	788 Caden Ln, Lexington, 40509	40, 3, WXM	N/A	N/A	25'7"		(1)Fiber/Strand			
25	81499-13354	152W	796 Caden Ln, Lexington, 40509	40, 4, WXM	21'6"	N/A	25'4"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAS35
 PROJECT NUMBER:
 LXTNXY.00457.CB

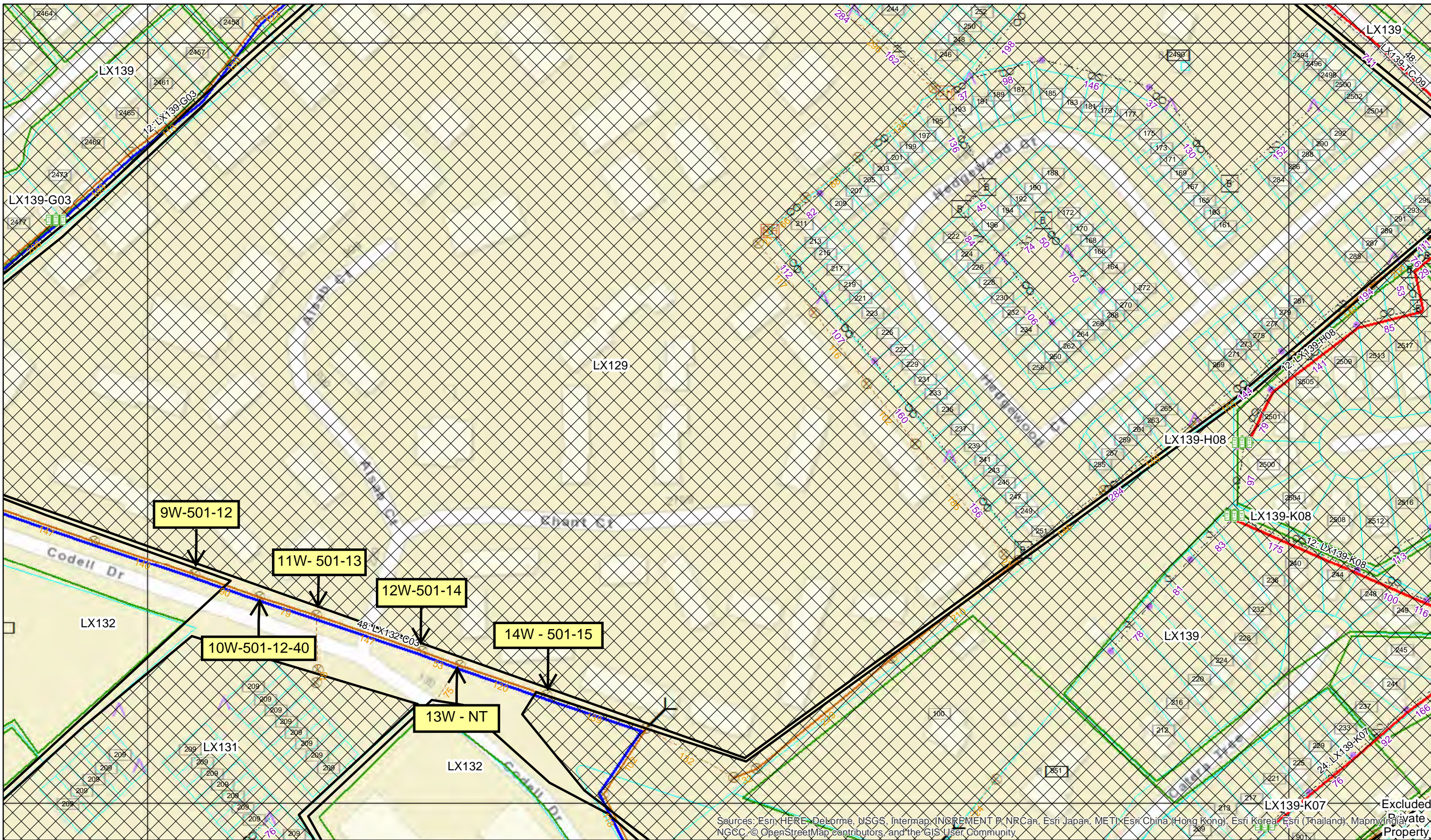
STAKING GRID DRAWING
 ROUTE: LX132 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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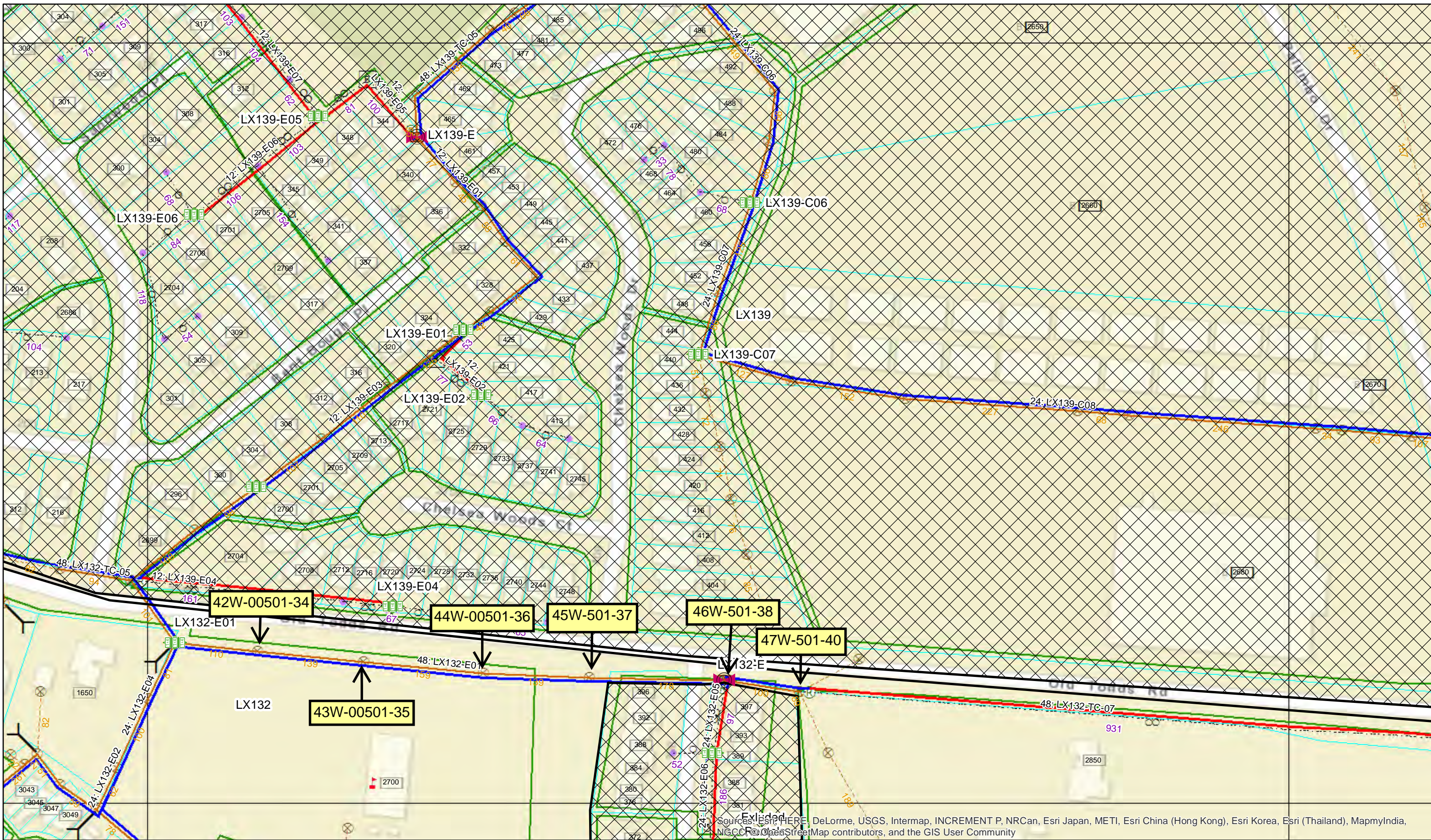
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LXAR38
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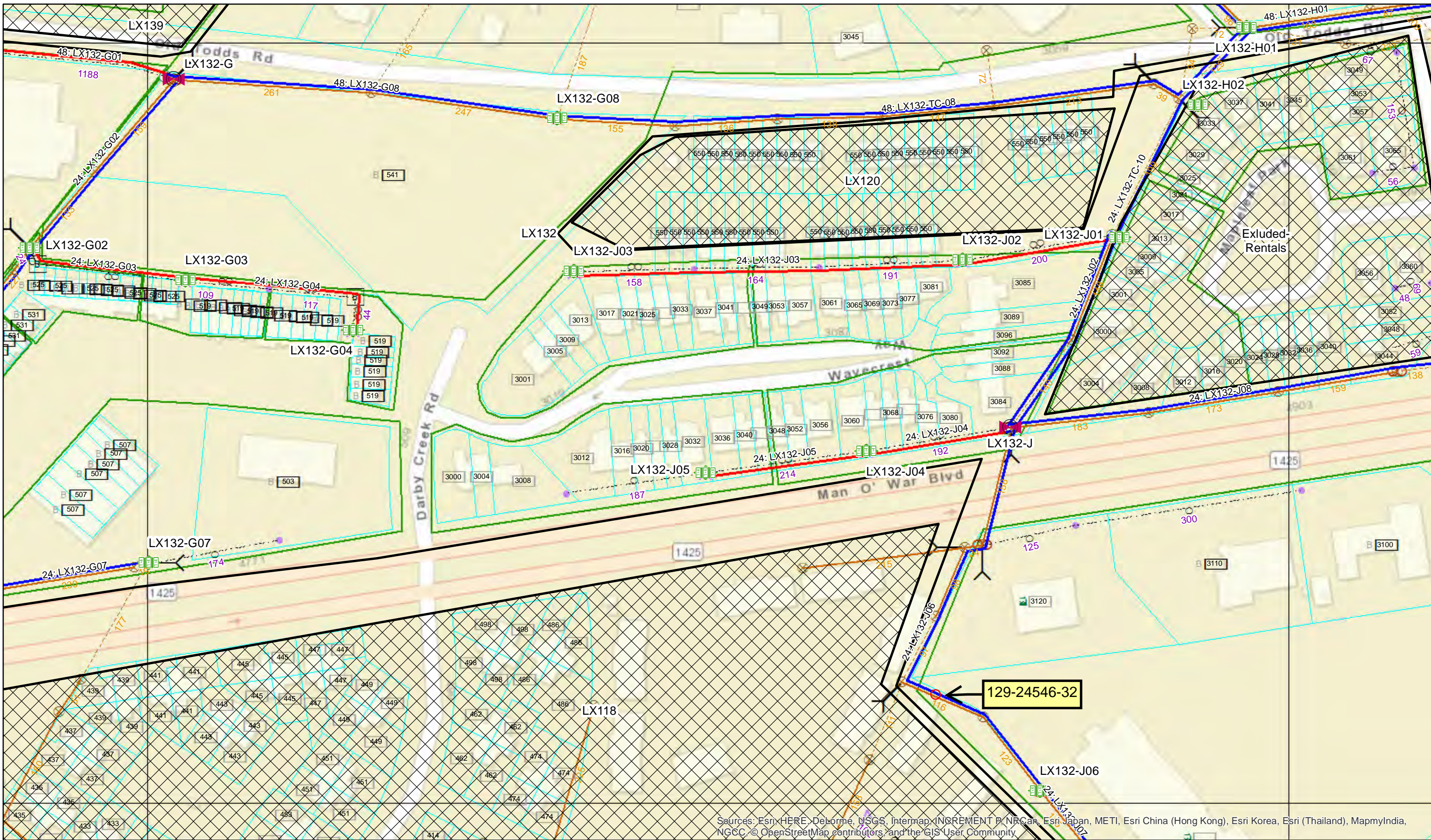
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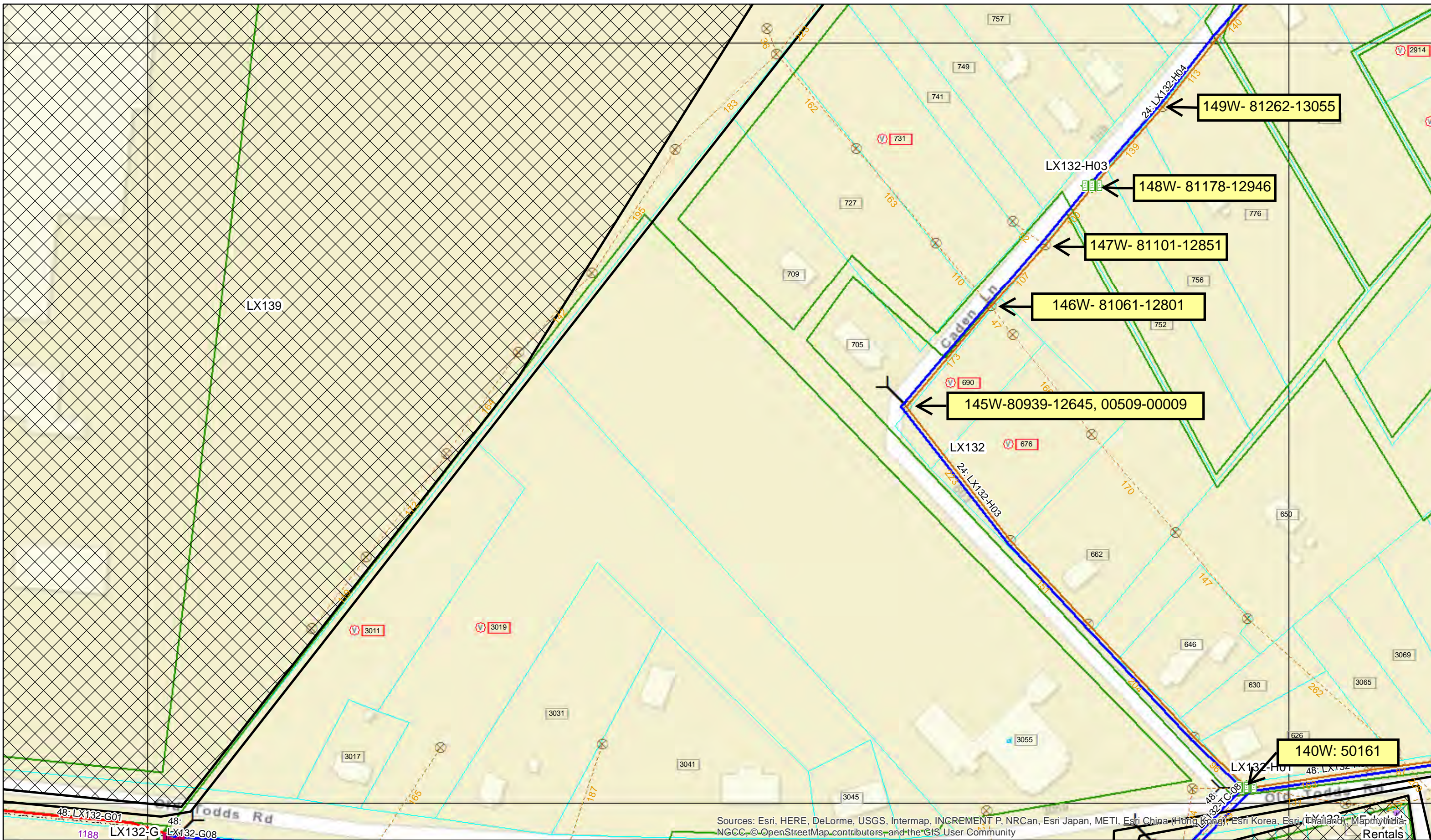
STAKING GRID DRAWING
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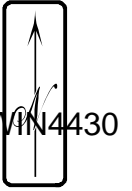
LXAR40
 PROJECT NUMBER:
 LTNKY00457.CB
 DATE 12/13/2017
 USER NAME: argjis
 DESIGN ENG

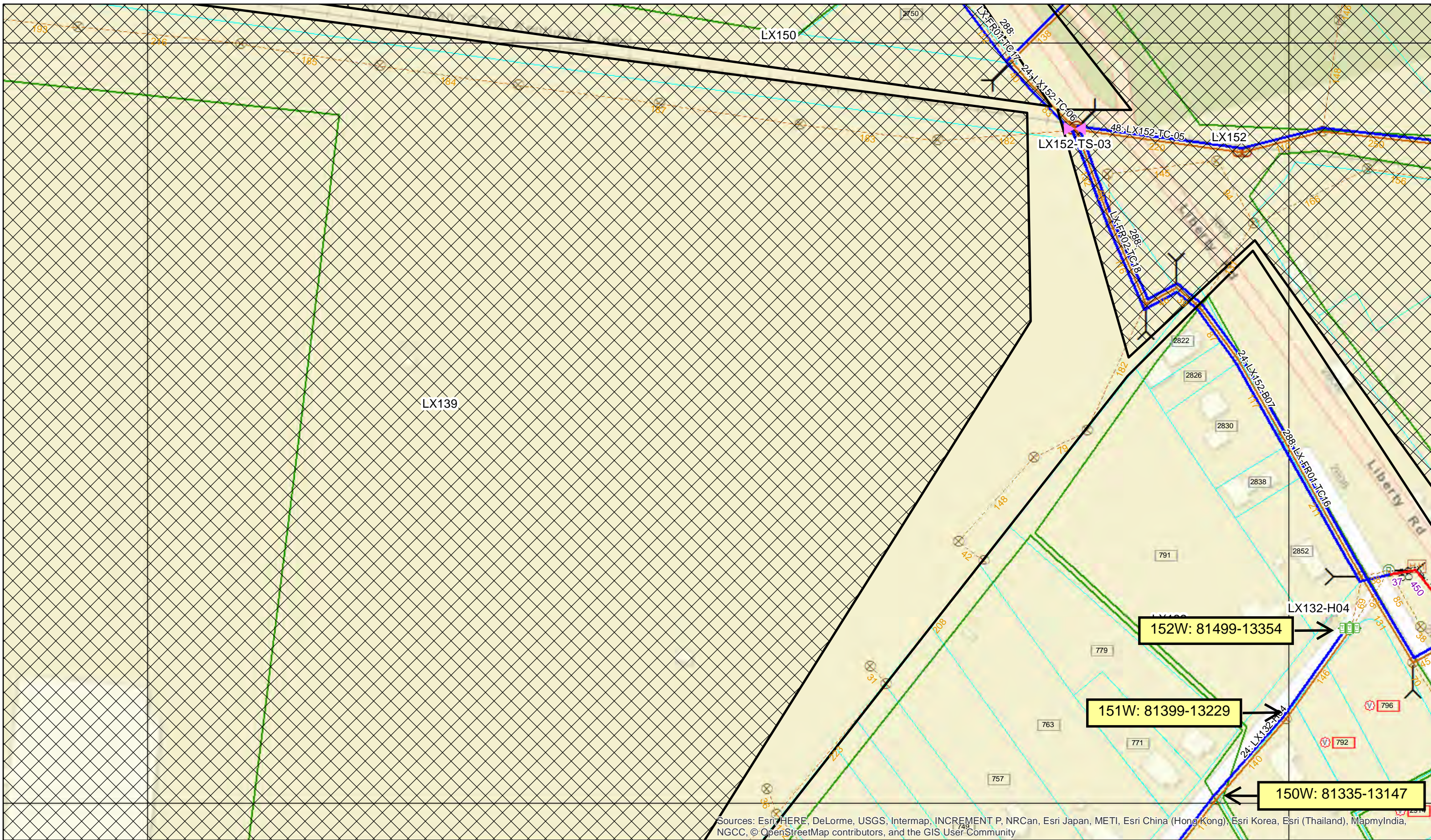
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LXAS40

PROJECT NUMBER:
LXTNXY.00437.CB

DATE
12/13/2017

USER NAME: argris

DESIGN ENG

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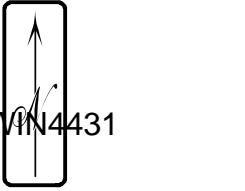
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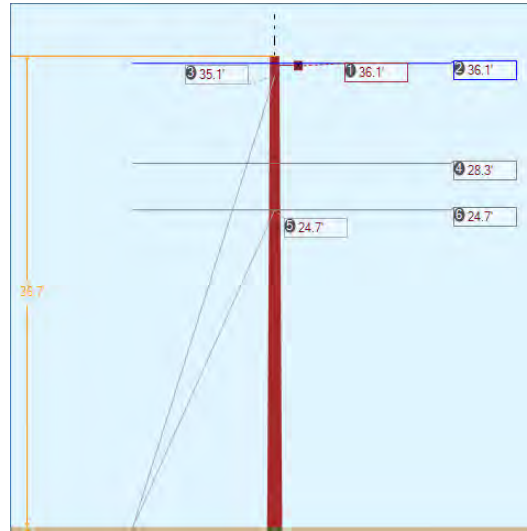
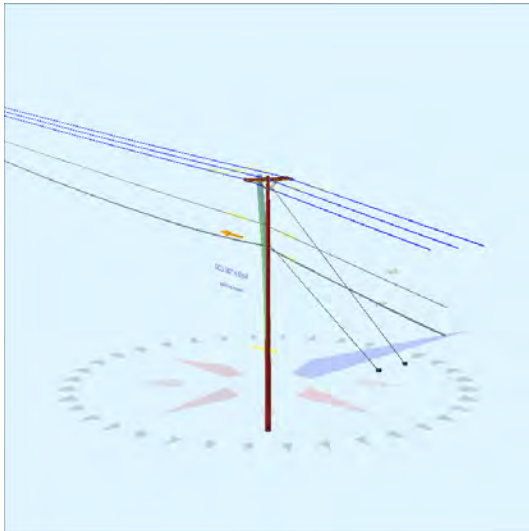
3701 Communications Way
Evansville, In 47715



1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND																																																					
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Pole Num:	6W - 1865496	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.29	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.65	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012992 Deg	Longitude:	-84.454305 Deg	Elevation:	896.322812986877		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.8	0.0
Groundline	23.8	0.0
Vertical	8.4	30.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,787	288.8
Groundline	19,787	288.8
GL Allowable	88,311	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	29.0	15.5		21.6	282.0	24.6	190.0
? EHS 3/8 (Down)			35.2	31.1	282.0	39.0	190.0
? Single Helix Anchor	22.2	19.5		6.7	282.0	7.7	220.0
? EHS 1/4 (Down)			24.7	22.3	282.0	28.4	220.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 288.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	175	27.3	6,424	32.5	7.3	479	704	7	486	7.1
Comms	18	2.7	474	2.4	0.5	35	386	4	39	0.6
GuyBraces	166	26.0	6,073	30.7	6.9	453	6,534	61	514	7.6
Pole	202	31.6	3,853	19.5	4.4	287	2,093	20	307	4.5
Crossarms	65	10.2	2,426	12.3	2.8	181	190	2	183	2.7
Insulators	15	2.3	538	2.7	0.6	40	47	0	41	0.6
Pole Load	640	100.0	19,787	100.0	22.4	1,476	9,954	93	1,569	23.1
Pole Reserve Capacity			68,524		77.6	5,324			5,231	76.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 288.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	359	56.2	13,142	66.4	14.9	980	5,767	54	1,034	15.2
Unknown, COMMUNICATION	13	2.1	367	1.9	0.4	27	1,905	18	45	0.7
Pole	202	31.6	3,853	19.5	4.4	287	2,093	20	307	4.5
<Undefined>	65	10.2	2,426	12.3	2.8	181	190	2	183	2.7
Totals:	640	100.0	19,787	100.0	22.4	1,476	9,954	93	1,569	23.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.14	18.19	0.7200	0.08	0.462	68.4	115.3	68.4	6,210	-289,851	-15	23 -289,843
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.14	48.54	0.7200	0.08	0.462	68.4	115.3	68.4	6,210	-289,851	-4	23 -289,832
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.14	48.54	0.7200	0.08	0.462	68.4	115.3	68.4	6,210	-289,851	-7	23 -289,835
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.14	48.54	0.7200	0.72	0.462	212.7	288.5	212.7	6,210	291,713	13	-2 291,724
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.14	18.19	0.7200	0.72	0.462	212.7	288.5	212.7	6,210	291,713	47	-2 291,759
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.14	48.54	0.7200	0.72	0.462	212.7	288.5	212.7	6,210	291,713	23	-2 291,734

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.35	6.66	0.3980	0.07	0.145	68.4	115.3	68.4	2,128	-77,921	1	13	-77,907
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.35	6.66	0.3980	0.62	0.145	212.7	288.5	212.7	2,128	78,422	2	-1	78,423
											Totals:	6,088	59	76	6,223

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	TELE 1.5	Unknown, COMMUNICATION	24.73	6.87	1.5000	0.99	0.900	68.4	115.3	68.4	2,000	-63,874	6	26	-63,842
Telco	TELE 1.5	Unknown, COMMUNICATION	24.73	6.87	1.5000	4.03	0.900	212.7	288.5	212.8	2,000	64,284	19	-2	64,301
											Totals:	410	25	24	459

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	36.14	5.44	115.3	115.3	50.00	4.50	3.50	96.00	0	2,350	2,350	
										Totals:	0	2,350	2,350

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.14	0.00	115.3	0.0	3.00	3.80	12.75	-9	84	76	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.14	45.00	198.4	0.0	3.00	3.80	12.75	-6	84	78	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.14	-45.00	32.2	0.0	3.00	3.80	12.75	-11	84	73	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.14	-45.00	18.4	180.0	3.00	3.80	12.75	6	84	91	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.14	0.00	295.3	180.0	3.00	3.80	12.75	9	84	93	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.14	45.00	212.2	180.0	3.00	3.80	12.75	11	84	96	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.35	0.00	201.9	111.9	2.00	3.00	3.19	0	13	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.73	0.00	205.3	115.3	5.00	3.00	0.00	1	0	1	
										Totals:	1	520	521

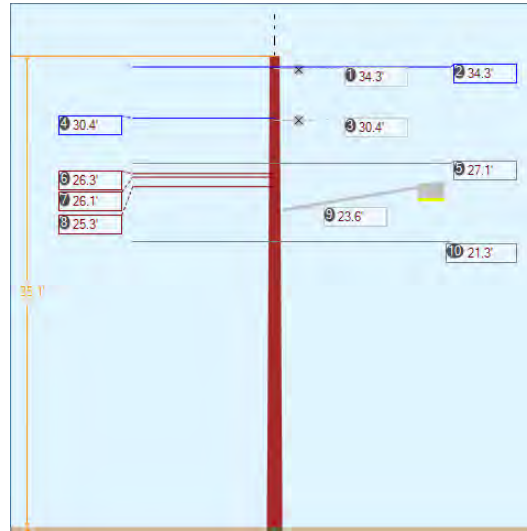
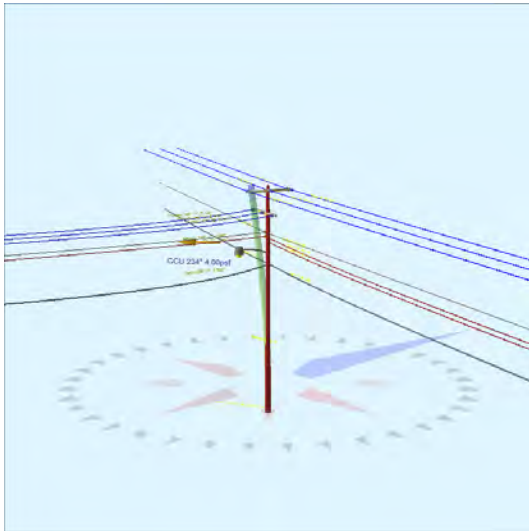
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	35.15	0.00	29.03	0.375	75.00	15.5	50.3	0.273	43.89	1.19
EHS 1/4	Down	Unknown, COMMUNICATION	24.72	0.00	22.19	0.25	75.00	19.5	47.9	0.121	31.48	0.60

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,409	4,917	4,313	3,318	2,757	160	5,987
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,699	1,544	1,337	993	896	-12	-104
Totals:										4,310	3,653	149	5,883

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	29.03	15.5	20,000	1.00	20,000	4,917	4,313	24.6
Single Helix Anchor			18.00	22.19	19.5	20,000	1.00	20,000	1,544	1,337	7.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.15	34.59	10.43	16.31	7.32	11.67	1.60e+6	60.00	57.00	36.71	119,181	1185.05	11.90

Pole Num:	7W - 501-10	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.93	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.41	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012917 Deg	Longitude:	-84.454094 Deg	Elevation:	895.045076493061		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.8	0.0
Groundline	37.8	0.0
Vertical	11.6	22.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,256	251.5
Groundline	32,256	251.5
GL Allowable	86,589	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 251.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	683	63.5	24,010	74.4	27.7	1,897	755	7	1,904	28.0
Comms	120	11.2	2,461	7.6	2.8	194	398	4	198	2.9
Pole	185	17.2	3,270	10.1	3.8	258	1,982	19	277	4.1
Crossarms	32	3.0	1,032	3.2	1.2	82	190	2	83	1.2
Streetlights	31	2.8	689	2.1	0.8	54	162	2	56	0.8
Insulators	25	2.3	795	2.5	0.9	63	85	1	64	0.9
Pole Load	1,076	100.0	32,256	100.0	37.3	2,548	3,572	34	2,582	38.0
Pole Reserve Capacity			54,333		62.7	4,252			4,218	62.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 251.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	738	68.7	25,493	79.0	29.4	2,014	983	9	2,023	29.8
Unknown, COMMUNICATION	120	11.2	2,461	7.6	2.8	194	417	4	198	2.9
Pole	185	17.2	3,270	10.1	3.8	258	1,982	19	277	4.1
<Undefined>	32	3.0	1,032	3.2	1.2	82	190	2	83	1.2
Totals:	1,076	100.0	32,256	100.0	37.3	2,548	3,572	34	2,582	38.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.26	22.59	0.5630	0.67	0.291	149.5	110.1	149.5	2,810	-75,181	-19	823 -74,377
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.26	50.35	0.5630	0.67	0.291	149.5	110.1	149.5	2,810	-75,181	5	823 -74,354
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.26	50.35	0.5630	0.67	0.291	149.5	110.1	149.5	2,810	-75,181	-22	823 -74,380
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.26	45.59	0.7200	0.33	0.462	68.4	295.3	68.4	3,210	79,305	-8	507 79,804
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.26	7.29	0.7200	0.33	0.462	68.4	295.3	68.4	3,210	79,305	12	507 79,824
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.26	45.59	0.7200	0.33	0.462	68.4	295.3	68.4	3,210	79,305	11	507 79,823

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	30.45	18.44	0.7200	0.09	0.462	72.1	198.6	72.2	250	4,597	10	361	4,968
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	30.45	48.63	0.7200	0.09	0.462	72.1	198.6	72.2	250	4,597	17	361	4,975
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	30.45	48.63	0.7200	0.09	0.462	72.1	198.6	72.2	250	4,597	-9	361	4,949
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.08	6.65	0.3980	0.36	0.145	149.5	110.1	149.5	2,128	-45,004	17	549	-44,438
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.08	6.65	0.3980	0.08	0.145	72.1	198.6	72.1	250	4,088	8	237	4,333
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.08	6.65	0.3980	0.08	0.145	68.4	295.3	68.4	2,128	41,557	8	295	41,860
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.33	6.69	0.3980	0.08	0.145	72.1	198.6	72.1	250	3,975	8	230	4,213
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.05	6.71	0.3980	0.36	0.145	149.5	110.1	149.5	350	-7,122	-21	528	-6,615
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.34	6.75	0.3980	0.36	0.145	149.5	110.1	149.5	350	-6,927	-22	514	-6,435
Totals:											16,729	-2	7,424	24,151	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	TELE 1.5	Unknown,	21.26	7.00	1.5000	2.50	0.900	149.5	110.1	149.5	2,000	-33,205	-79	960	-32,324
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.26	7.00	1.5000	0.99	0.900	68.4	295.3	68.4	2,000	30,662	-36	515	31,141
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.26	7.00	1.5000	1.05	0.900	72.1	198.6	72.4	250	3,209	35	414	3,658
		COMMUNICATION													
Totals:											666	-80	1,889	2,475	

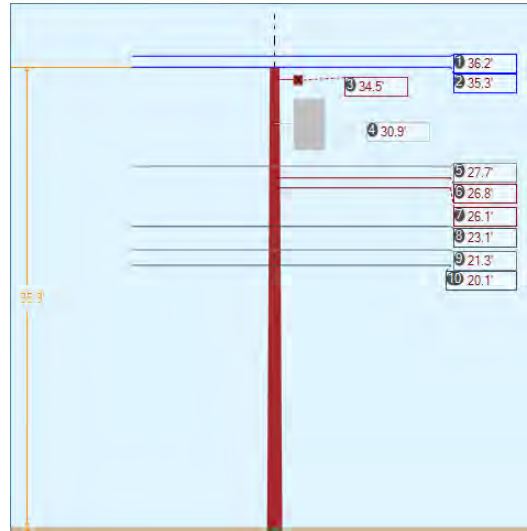
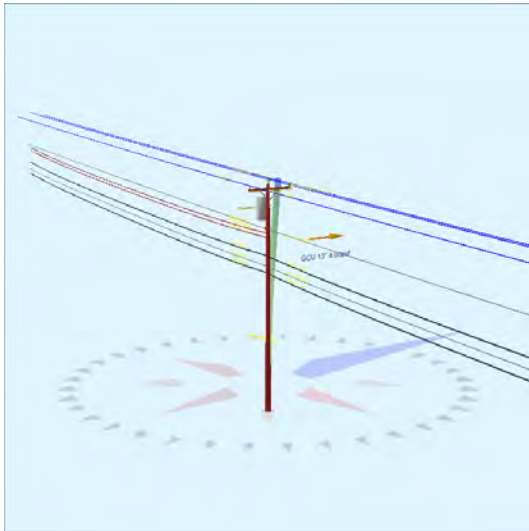
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	34.26	5.46	110.1	110.1	50.00	4.50	3.50	96.00	-34	524	490	
Normal	Crossarm	30.45	5.69	198.6	198.6	50.00	4.50	3.50	96.00	27	521	548	
Totals:											-7	1,045	1,039

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 10 ft. Arm	KU, UTILITY	23.62	4.36	160.0	160.0	85.00	24.00	20.00	3.00	120.00	-31	723	693
Totals:											-31	723	693	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	34.26	0.00	110.1	0.0	3.00	3.90	17.13	-8	106	98
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	34.26	45.00	193.2	0.0	3.00	3.90	17.13	5	106	111
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	34.26	-45.00	27.0	0.0	3.00	3.90	17.13	-22	106	84
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.26	-45.00	27.0	180.0	3.00	3.80	12.75	-11	77	66
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.26	0.00	110.1	180.0	3.00	3.80	12.75	3	77	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.26	45.00	193.2	180.0	3.00	3.80	12.75	16	77	93
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.45	0.00	198.6	0.0	3.00	3.80	12.75	5	68	74
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.45	45.00	281.4	0.0	3.00	3.80	12.75	22	68	91
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.45	-45.00	115.8	0.0	3.00	3.80	12.75	-12	68	57
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.08	0.00	201.3	111.3	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.33	0.00	198.6	198.6	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.05	0.00	110.1	110.1	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.34	0.00	110.1	110.1	2.00	3.00	3.19	-2	11	10
Bolt	Three Bolt	Unknown, COMMUNICATION	21.26	0.00	22.7	292.7	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	21.26	0.00	198.6	288.6	5.00	3.00	0.00	3	0	3
Totals:										-2	801	799

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.01	33.47	10.69	14.47	7.32	11.59	1.60e+6	60.00	57.00	35.07	30,867	307.96	8.62

Pole Num:	8W - 00501-11	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012794 Deg	Longitude:	-84.453593 Deg	Elevation:	905.363451881046		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	58.9	0.0
Groundline	58.9	0.0
Vertical	19.3	24.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	50,777	354.3
Groundline	50,777	354.3
GL Allowable	87,218	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 354.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,120	61.2	35,298	69.5	40.5	2,749	648	6	2,755	40.5
Comms	462	25.2	9,634	19.0	11.1	750	592	6	756	11.1
PowerEquipments	52	2.8	2,211	4.4	2.5	172	1,216	11	184	2.7
Pole	185	10.1	3,321	6.5	3.8	259	2,002	19	278	4.1
Crossarms	2	0.1	56	0.1	0.1	4	95	1	5	0.1
Insulators	8	0.4	257	0.5	0.3	20	87	1	21	0.3
Pole Load	1,829	100.0	50,777	100.0	58.2	3,955	4,639	44	3,998	58.8
Pole Reserve Capacity			36,441		41.8	2,845			2,802	41.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 354.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,181	64.5	37,781	74.4	43.3	2,942	1,923	18	2,961	43.5
Unknown, COMMUNICATION	462	25.2	9,619	18.9	11.0	749	620	6	755	11.1
Pole	185	10.1	3,321	6.5	3.8	259	2,002	19	278	4.1
<Undefined>	2	0.1	56	0.1	0.1	4	95	1	5	0.1
Totals:	1,829	100.0	50,777	100.0	58.2	3,955	4,639	44	3,998	58.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.17	0.00	0.5630	0.48	0.291	143.1	107.9	143.1	3,410	-49,401	0	1,465	-47,936
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.17	0.00	0.5630	0.52	0.291	149.5	290.1	149.5	3,410	53,707	0	1,498	55,204
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.32	45.33	0.5630	0.48	0.291	143.1	107.9	143.1	3,410	-48,238	-269	1,430	-47,076
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.32	45.33	0.5630	0.52	0.291	149.5	290.1	149.5	3,410	52,442	-281	1,463	53,624
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.32	45.33	0.5630	0.48	0.291	143.1	107.9	143.1	3,410	-48,238	243	1,430	-46,564
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.32	45.33	0.5630	0.52	0.291	149.5	290.1	149.5	3,410	52,442	254	1,463	54,158

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.73	6.62	0.3980	0.38	0.145	143.1	107.9	143.1	2,128	-23,617	-24	948	-22,693
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.73	6.62	0.3980	0.41	0.145	149.5	290.1	149.5	2,128	25,675	-25	969	26,620
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.81	6.68	0.3980	0.41	0.145	149.5	290.1	149.5	350	4,083	12	937	5,032
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.06	6.72	0.3980	0.41	0.145	149.5	290.1	149.5	350	3,968	12	911	4,891
Totals:											22,823	-77	12,514	35,260	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	23.09	6.90	1.3300	2.02	0.337	143.1	107.9	143.1	925	-8,550	-59	1,609	-7,000
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.09	6.90	1.3300	2.14	0.337	149.5	290.1	149.5	925	9,295	-62	1,645	10,878
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.29	7.01	0.6570	2.01	0.190	143.1	107.9	143.1	750	-6,391	-34	938	-5,487
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.29	7.01	0.6570	2.12	0.190	149.5	290.1	149.5	750	6,948	-36	959	7,871
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.12	7.08	1.3300	2.02	0.337	143.1	107.9	143.1	925	-7,450	-61	1,402	-6,109
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.12	7.08	1.3300	2.14	0.337	149.5	290.1	149.5	925	8,100	-63	1,434	9,470
		COMMUNICATION													
Totals:											1,951	-315	7,987	9,624	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.88	21.93	280.0	280.0	640.00	47.00	--	24.00	--	601	1,607	2,208
Totals:											601	1,607	2,208	

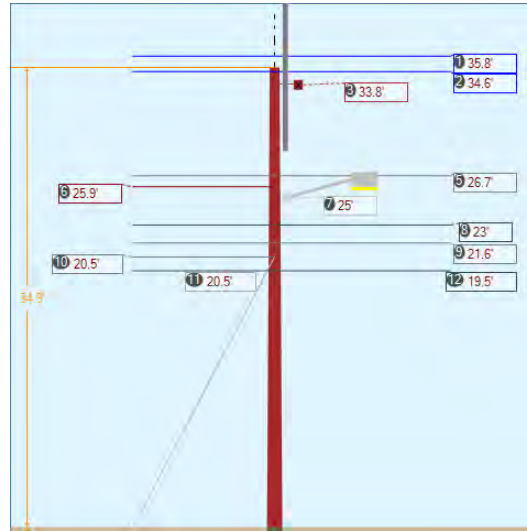
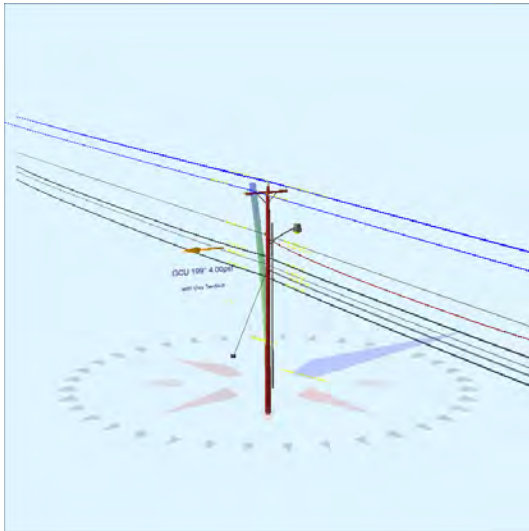
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.51	5.46	106.9	106.9	50.00	4.50	3.50	96.00	-17	72	56
Totals:											-17	72	56

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.30	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156

Pin	Pin Insulator - 5 kV	KU, UTILITY	34.69	45.00	190.0	0.0	6.00	3.50	7.50	-41	42	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.69	-45.00	23.9	0.0	6.00	3.50	7.50	37	42	80
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.73	0.00	198.5	288.5	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.81	0.00	290.1	290.1	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.06	0.00	290.1	290.1	2.00	3.00	3.19	1	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	23.09	0.00	198.5	288.5	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.29	0.00	198.5	288.5	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.12	0.00	198.5	288.5	5.00	3.00	0.00	-5	0	-5
Totals:										-19	276	257

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.56	33.86	10.60	17.19	7.32	11.62	1.60e+6	60.00	57.00	35.30	23,984	240.38	5.18

Pole Num:	9W - 501-12	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.08	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.35	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012658 Deg	Longitude:	-84.453130 Deg	Elevation:	903.604549368497		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.3	0.0
Groundline	33.3	0.0
Vertical	2.5	20.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,893	189.3
Groundline	27,893	189.3
GL Allowable	86,196	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.7	296.5		16.8	199.3	17.9	140.0
? EHS 1/4 (Down)			20.5	56.1	199.3	65.9	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 189.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	598	56.5	19,065	68.4	22.1	1,551	472	4	1,555	22.9
Comms	867	82.0	17,829	63.9	20.7	1,450	597	6	1,456	21.4
GuyBraces	-693	-65.5	-13,800	-49.5	-16.0	-1,122	3,586	34	-1,088	-16.0
Pole	190	17.9	3,263	11.7	3.8	265	1,970	19	284	4.2
Crossarms	1	0.1	28	0.1	0.0	2	95	1	3	0.0
Streetlights	25	2.3	76	0.3	0.1	6	114	1	7	0.1
Risers	62	5.9	1,152	4.1	1.3	94	55	1	94	1.4
Insulators	8	0.8	280	1.0	0.3	23	93	1	24	0.3
Pole Load	1,057	100.0	27,893	100.0	32.4	2,269	6,982	66	2,335	34.3
Pole Reserve Capacity			58,303		67.6	4,531			4,465	65.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 189.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	693	65.5	20,556	73.7	23.9	1,672	696	7	1,678	24.7
Unknown, COMMUNICATION	174	16.4	4,046	14.5	4.7	329	4,221	40	369	5.4
Pole	190	17.9	3,263	11.7	3.8	265	1,970	19	284	4.2
<Undefined>	1	0.1	28	0.1	0.0	2	95	1	3	0.0
Totals:	1,057	100.0	27,893	100.0	32.4	2,269	6,982	66	2,335	34.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.80	0.00	0.5630	0.20	0.291	90.7	108.9	90.7	3,410	26,362	0	994	27,356
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.80	0.00	0.5630	0.48	0.291	143.1	287.9	143.1	3,410	-23,625	0	1,571	-22,055
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.62	45.33	0.5630	0.48	0.291	143.1	287.9	143.1	3,410	-22,847	-279	1,519	-21,607
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.62	45.33	0.5630	0.20	0.291	90.7	108.9	90.7	3,410	25,493	-177	961	26,277

Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.62	45.33	0.5630	0.48	0.291	143.1	287.9	143.1	3,410	-22,847	270	1,519	-21,058
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.62	45.33	0.5630	0.20	0.291	90.7	108.9	90.7	3,410	25,493	171	961	26,626
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.71	6.66	0.3980	0.16	0.145	90.7	108.9	90.7	2,128	12,269	16	626	12,911
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.71	6.66	0.3980	0.38	0.145	143.1	287.9	143.1	2,128	-10,995	26	989	-9,980
Secondary	DUPLEX 4 AWG	KU, UTILITY	25.86	6.71	0.6300	0.91	0.107	90.7	108.9	90.8	75	419	3	763	1,184
Totals:											9,723	31	9,902	19,655	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.97	6.89	1.3300	1.19	0.337	90.7	108.9	90.7	925	4,585	41	1,097	5,722
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.97	6.89	1.3300	2.02	0.337	143.1	287.9	143.1	925	-4,109	64	1,734	-2,312
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.61	6.97	0.6570	1.17	0.190	90.7	108.9	90.7	750	3,497	23	652	4,173
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.61	6.97	0.6570	2.01	0.190	143.1	287.9	143.1	750	-3,134	37	1,031	-2,066
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.54	7.04	1.5000	1.37	0.900	90.7	108.9	90.7	2,000	8,867	12	1,072	9,951
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.48	7.10	1.3300	1.19	0.337	90.7	108.9	90.7	925	3,889	42	930	4,861
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.48	7.10	1.3300	2.02	0.337	143.1	287.9	143.1	925	-3,485	66	1,470	-1,949
		COMMUNICATION													
Totals:											10,109	284	7,987	18,380	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	33.80	5.48	286.9	286.9	50.00	4.50	3.50	96.00	-6	35	29
Totals:										-6	35	29

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm	24.97	4.27	360.0	360.0	60.00	24.00	20.00	3.00	72.00	-539	617	78
Totals:											-539	617	78

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 90.0°	Riser	KU, UTILITY	28.72	5.85	90.0	90.0	28.72	344.62	4.00	4.00	344.62	-5	1,193	1,188
Totals:											-5	1,193	1,188	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.92	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.99	45.00	10.0	0.0	6.00	3.50	7.50	-43	43	0
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.99	-45.00	203.9	0.0	6.00	3.50	7.50	42	43	85
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.71	0.00	197.9	107.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.86	0.00	108.9	108.9	2.00	3.00	3.19	0	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	22.97	0.00	197.9	107.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.61	0.00	197.9	107.9	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	20.54	0.00	108.9	198.9	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	19.48	0.00	197.9	107.9	5.00	3.00	0.00	6	0	6
Totals:										18	270	288

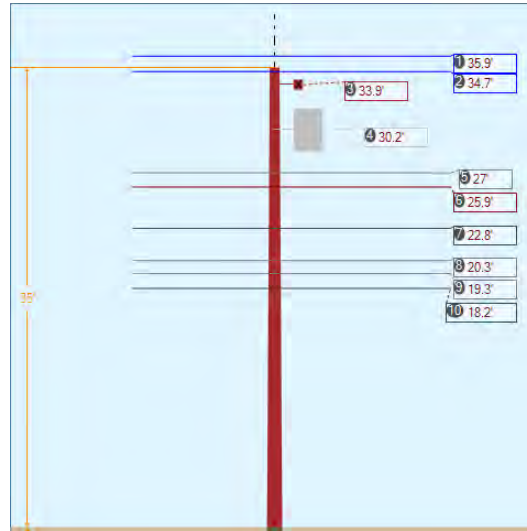
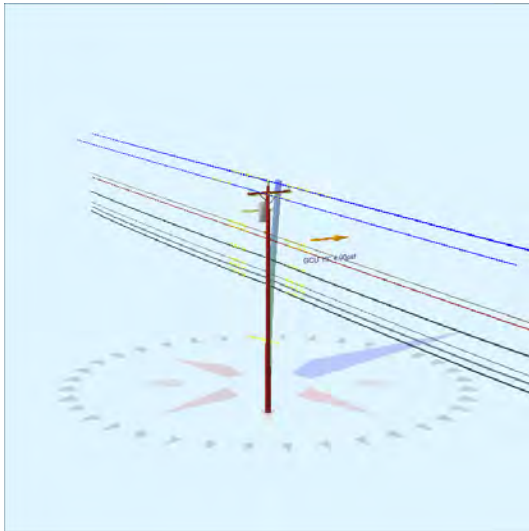
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	20.54	0.00	20.69	0.25	75.00	296.5	44.7	0.121	27.39	1.30

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,946	3,587	3,357	2,359	2,388	-706	-14,227
Totals:										2,359	2,388	-706	-14,227

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	20.69	296.5	20,000	1.00	20,000	3,587	3,357	17.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.79	33.28	10.73	11.50	7.32	11.58	1.60e+6	60.00	57.00	34.92	280,464	2792.82	40.00

Pole Num:	10W - 501-12-40	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.98	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.39	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012580 Deg	Longitude:	-84.452840 Deg	Elevation:	902.601222315075		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.9	0.0
Groundline	24.9	0.0
Vertical	12.7	22.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,030	20.7
Groundline	21,030	20.7
GL Allowable	86,450	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 20.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	292	33.1	9,374	44.6	10.8	735	364	3	738	10.9
Comms	346	39.2	6,650	31.6	7.7	521	564	5	527	7.7
PowerEquipments	42	4.7	1,252	6.0	1.5	98	694	7	105	1.5
Pole	193	21.9	3,447	16.4	4.0	270	1,978	19	289	4.2
Crossarms	1	0.1	44	0.2	0.1	3	95	1	4	0.1
Insulators	9	1.0	264	1.3	0.3	21	97	1	22	0.3
Pole Load	882	100.0	21,030	100.0	24.3	1,648	3,791	36	1,684	24.8
Pole Reserve Capacity			65,420		75.7	5,152			5,116	75.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 20.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	342	38.8	10,912	51.9	12.6	855	1,116	11	866	12.7
Unknown, COMMUNICATION	346	39.2	6,628	31.5	7.7	520	602	6	525	7.7
Pole	193	21.9	3,447	16.4	4.0	270	1,978	19	289	4.2
<Undefined>	1	0.1	44	0.2	0.1	3	95	1	4	0.1
Totals:	882	100.0	21,030	100.0	24.3	1,648	3,791	36	1,684	24.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.89	0.00	0.5630	0.14	0.291	75.3	108.7	75.3	3,410	4,190	0	838	5,028
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.89	0.00	0.5630	0.20	0.291	90.7	288.9	90.7	3,410	-3,763	0	1,010	-2,753
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.72	45.33	0.5630	0.14	0.291	75.3	108.7	75.3	3,410	4,053	-145	811	4,719
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.72	45.33	0.5630	0.20	0.291	90.7	288.9	90.7	3,410	-3,640	-175	977	-2,838
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.72	45.33	0.5630	0.14	0.291	75.3	108.7	75.3	3,410	4,053	146	811	5,010
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.72	45.33	0.5630	0.20	0.291	90.7	288.9	90.7	3,410	-3,640	176	977	-2,487

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.00	6.65	0.3980	0.11	0.145	75.3	108.7	75.3	2,128	1,966	-14	533	2,485
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.00	6.65	0.3980	0.16	0.145	90.7	288.9	90.7	2,128	-1,766	-17	641	-1,141
Secondary	#4 COPPER SOLID	KU, UTILITY	25.92	6.71	0.2043	0.13	0.126	75.3	108.7	75.3	982	871	0	401	1,272
Secondary	DUPLEX 4 AWG	KU, UTILITY	25.92	6.71	0.6300	0.91	0.107	90.7	288.9	90.7	916	-729	-1	775	45
Totals:											1,596	-28	7,773	9,341	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.78	6.91	1.3300	0.96	0.337	75.3	108.7	75.3	925	721	-34	915	1,602
CATV	CATV 1.0	Unknown,	22.78	6.91	1.3300	1.19	0.337	90.7	288.9	90.7	925	-647	-41	1,102	414
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.32	7.05	0.6570	0.95	0.190	75.3	108.7	75.3	750	521	-20	516	1,018
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.32	7.05	0.6570	1.17	0.190	90.7	288.9	90.7	750	-468	-24	622	130
Telco	TELE 1.5	Unknown,	19.32	7.12	1.5000	1.10	0.900	75.3	108.7	75.3	2,000	1,322	-61	848	2,109
Telco	TELE 1.5	Unknown,	19.32	7.12	1.5000	1.37	0.900	90.7	288.9	90.7	2,000	-1,187	-74	1,022	-239
CATV	CATV 1.0	Unknown,	18.20	7.18	1.3300	0.96	0.337	75.3	108.7	75.3	925	576	-35	731	1,272
CATV	CATV 1.0	Unknown,	18.20	7.18	1.3300	1.19	0.337	90.7	288.9	90.7	925	-517	-43	881	321
Totals:											320	-332	6,638	6,626	

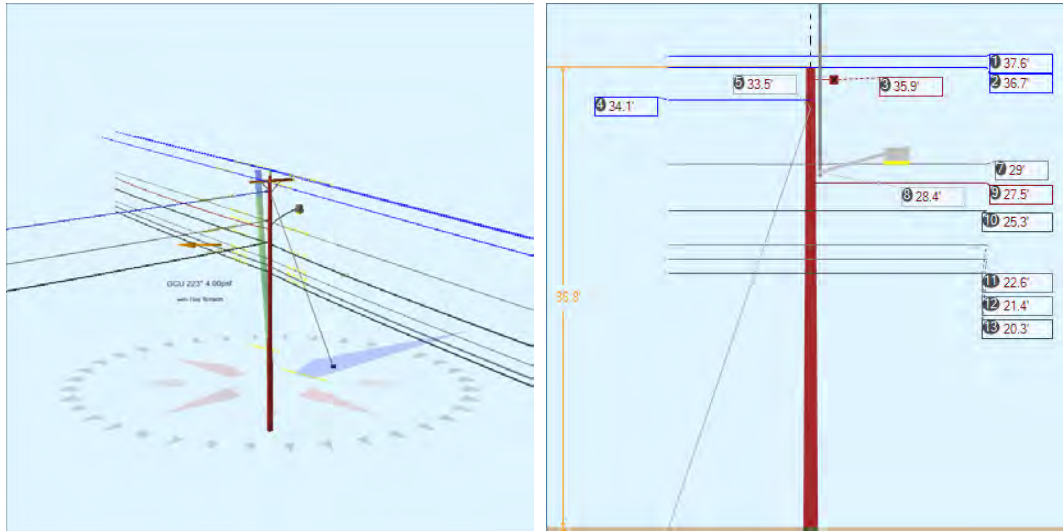
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	30.25	20.95	290.0	290.0	365.00	39.00	--	22.00	--	-14	1,261	1,247
Totals:											-14	1,261	1,247	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		33.90	5.48	108.7	108.7	50.00	4.50	3.50	96.00	1	42	43
Totals:											1	42	43

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.02	0.00	0.0	0.0	13.00	9.00	10.50	0	163	163
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.09	45.00	191.8	0.0	6.00	3.50	7.50	-43	44	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.09	-45.00	25.7	0.0	6.00	3.50	7.50	43	44	87
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.00	0.00	198.8	288.8	2.00	3.00	3.19	-2	13	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.92	0.00	108.7	108.7	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.92	0.00	288.9	288.9	2.00	3.00	3.19	0	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	22.78	0.00	198.8	288.8	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.32	0.00	198.8	288.8	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.32	0.00	198.7	108.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.20	0.00	198.8	288.8	5.00	3.00	0.00	-6	0	-6
Totals:										-24	287	263

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.29	33.51	10.67	14.96	7.32	11.59	1.60e+6	60.00	57.00	35.02	29,867	298.50	7.87

Pole Num:	11W - 501-13	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.23	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.67	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012503 Deg	Longitude:	-84.452595 Deg	Elevation:	903.753632569954		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.3	0.0 222.7
Groundline	40.3	0.0 222.7
Vertical	16.6	31.4 178.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,666	214.4 222.7
Groundline	32,666	214.4 222.7
GL Allowable	88,486	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.8	358.6		52.3	222.7	53.0	190.0
? EHS 3/8 (Down)			33.5	75.4	222.7	84.2	190.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 214.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,992	204.0	97,531	298.6	110.2	9,780	470	4	9,785	143.9
Comms	1,426	72.9	26,987	82.6	30.5	2,706	802	7	2,714	39.9
GuyBraces	-3,739	-191.1	-95,870	-293.5	-108.3	-9,614	14,080	132	-9,482	-139.4
Pole	202	10.3	2,862	8.8	3.2	287	2,098	20	307	4.5
Crossarms	5	0.2	120	0.4	0.1	12	95	1	13	0.2
Streetlights	25	1.3	195	0.6	0.2	20	114	1	21	0.3
Risers	36	1.8	539	1.7	0.6	54	56	1	55	0.8
Insulators	10	0.5	302	0.9	0.3	30	99	1	31	0.5
Pole Load	1,957	100.0	32,666	100.0	36.9	3,276	17,814	166	3,442	50.6
Pole Reserve Capacity			55,820		63.1	3,524			3,358	49.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 214.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	324	16.6	2,681	8.2	3.0	269	14,781	138	407	6.0
Unknown, COMMUNICATION	1,426	72.9	27,003	82.7	30.5	2,708	840	8	2,716	39.9
Pole	202	10.3	2,862	8.8	3.2	287	2,098	20	307	4.5
<Undefined>	5	0.2	120	0.4	0.1	12	95	1	13	0.2
Totals:	1,957	100.0	32,666	100.0	36.9	3,276	17,814	166	3,442	50.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	37.65	0.00	0.5630	0.48	0.291	145.2	109.2	145.2	3,410	-43,914	0	1,501	-42,414
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	37.65	0.00	0.5630	0.13	0.291	75.3	288.7	75.3	3,410	45,319	0	774	46,093
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.75	45.33	0.5630	0.48	0.291	145.2	109.2	145.2	3,410	-42,862	262	1,465	-41,136
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.75	45.33	0.5630	0.13	0.291	75.3	288.7	75.3	3,410	44,233	136	755	45,124

Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.75	45.33	0.5630	0.48	0.291	145.2	109.2	145.2	3,410	-42,862	-280	1,465	-41,678
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.75	45.33	0.5630	0.13	0.291	75.3	288.7	75.3	3,410	44,233	-145	755	44,843
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.14	16.57	0.3250	0.06	0.107	67.8	178.5	67.8	1,684	60,510	5	228	60,742
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.04	6.62	0.3980	0.37	0.145	145.2	109.2	145.2	2,128	-21,123	25	977	-20,121
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.04	6.62	0.3980	0.10	0.145	75.3	288.7	75.3	2,128	21,799	13	504	22,316
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.04	6.62	0.3250	0.06	0.107	67.8	178.5	67.8	1,684	51,462	10	194	51,665
Secondary	#4 COPPER SOLID	KU, UTILITY	27.53	6.71	0.2043	0.12	0.126	75.3	288.7	75.4	150	1,457	3	375	1,834
Totals:											118,249	28	8,992	127,269	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.29	6.84	1.3300	2.05	0.337	145.2	109.2	145.2	925	-7,997	63	1,734	-6,200
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.29	6.84	1.3300	0.96	0.337	75.3	288.7	75.3	925	8,253	33	895	9,180
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.29	6.84	1.3300	0.85	0.337	67.8	178.5	67.8	925	24,621	29	374	25,024
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.56	7.00	0.6570	2.02	0.190	145.2	109.2	145.2	750	-5,784	37	978	-4,770
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.56	7.00	0.6570	0.94	0.190	75.3	288.7	75.3	750	5,969	19	504	6,493
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.43	7.07	1.5000	2.41	0.900	145.2	109.2	145.2	2,000	-14,651	113	1,606	-12,932
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.43	7.07	1.5000	1.10	0.900	75.3	288.7	75.3	2,000	15,119	59	828	16,006
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.29	7.14	1.3300	2.05	0.337	145.2	109.2	145.2	925	-6,415	65	1,391	-4,958
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.29	7.14	1.3300	0.96	0.337	75.3	288.7	75.3	925	6,620	34	718	7,372
		COMMUNICATION													
Totals:											25,735	451	9,029	35,215	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	35.93	5.46	109.0	109.0	50.00	4.50	3.50	96.00	-12	168	157
Totals:										-12	168	157

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	28.36	4.16	360.0	360.0	60.00	24.00	20.00	3.00	72.00	-450	704	254
Totals:										-450	704	254		

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 100.0°	Riser	KU, UTILITY	29.59	6.09	100.0	100.0	29.59	355.04	2.50	2.50	355.04	-6	709	703
Totals:										-6	709	703		

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.77	0.00	0.0	0.0	13.00	9.00	10.50	0	169	169
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.12	45.00	192.0	0.0	6.00	3.50	7.50	40	46	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.12	-45.00	25.9	0.0	6.00	3.50	7.50	-43	46	3
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.14	0.00	178.5	178.5	3.00	3.80	12.75	6	80	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.04	0.00	199.0	109.0	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.53	0.00	288.7	288.7	2.00	3.00	3.19	1	13	13
Bolt	Three Bolt	Unknown, COMMUNICATION	25.29	0.00	199.0	109.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.56	0.00	199.0	109.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.43	0.00	199.0	109.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.29	0.00	199.0	109.0	5.00	3.00	0.00	5	0	5
Totals:										28	366	394

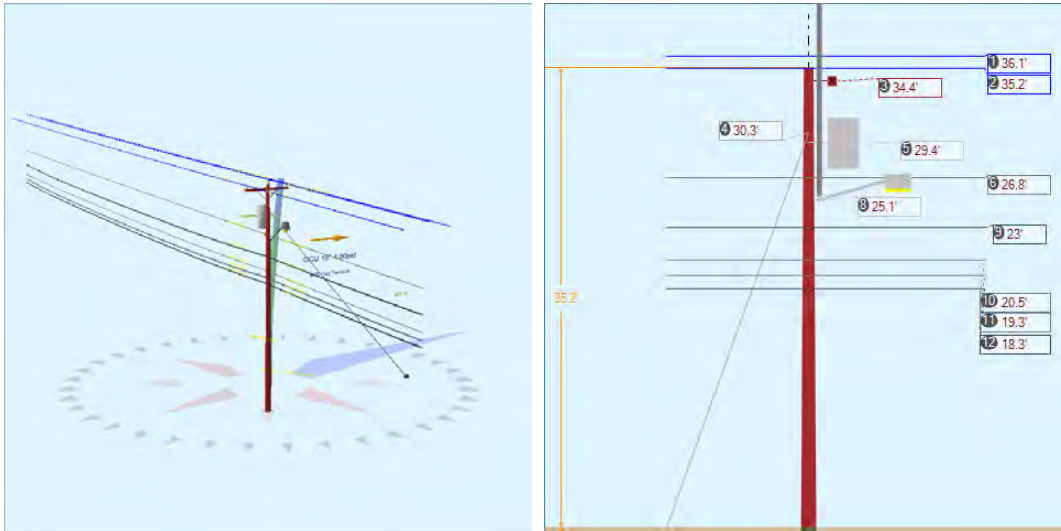
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	33.46	0.00	16.79	0.375	75.00	358.6	63.1	0.273	35.80	2.36

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,666	10,605	10,453	9,324	4,724	-3,830	-125,101
Totals:										9,324	4,724	-3,830	-125,101

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.79	358.6	20,000	1.00	20,000	10,605	10,453	53.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.43	34.78	10.38	22.19	7.32	11.68	1.60e+6	60.00	57.00	36.77	107,502	1073.12	6.02

Pole Num:	12W - 501-14	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.48	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012373 Deg	Longitude:	-84.452103 Deg	Elevation:	905.430247563356		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	19.3
Groundline	0.0	19.3
Vertical	23.2	212.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13.2	19.3
Groundline	13.2	19.3
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	25.3	32.3		0.0	19.3	3.6	210.0
? EHS 3/8 (Down)			30.3	0.0	19.3	5.7	210.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 13.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	343	31.9	11,583	42.9	13.3	903	367	3	906	13.3
Comms	428	39.8	8,279	30.7	9.5	645	664	6	652	9.6
GuyBraces	2	0.2	54	0.2	0.1	4	12	0	4	0.1
PowerEquipments	55	5.1	1,871	6.9	2.2	146	1,216	11	157	2.3
Pole	194	18.0	3,471	12.9	4.0	271	1,997	19	289	4.3
Crossarms	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Streetlights	25	2.3	1,085	4.0	1.3	85	114	1	86	1.3
Risers	20	1.8	351	1.3	0.4	27	49	0	28	0.4
Insulators	8	0.7	241	0.9	0.3	19	89	1	20	0.3
Pole Load	1,075	100.0	26,980	100.0	31.0	2,103	4,603	43	2,146	31.6
Pole Reserve Capacity			60,092		69.0	4,697			4,654	68.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 13.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	452	42.0	15,206	56.4	17.5	1,185	1,810	17	1,202	17.7
Unknown, COMMUNICATION	428	39.8	8,257	30.6	9.5	644	702	7	650	9.6
Pole	194	18.0	3,471	12.9	4.0	271	1,997	19	289	4.3
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Totals:	1,075	100.0	26,980	100.0	31.0	2,103	4,603	43	2,146	31.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.12	0.00	0.5630	0.06	0.291	50.4	108.8	50.4	3,410	-15,621	0	562	-15,060
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.12	0.00	0.5630	0.50	0.291	145.2	289.2	145.2	3,410	16,734	0	1,618	18,352
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.19	45.33	0.5630	0.06	0.291	50.4	108.8	50.4	3,410	-15,219	98	547	-14,574
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.19	45.33	0.5630	0.50	0.291	145.2	289.2	145.2	3,410	16,304	283	1,576	18,163

Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.19	45.33	0.5630	0.06	0.291	50.4	108.8	50.4	3,410	-15,219	-96	547	-14,768
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.19	45.33	0.5630	0.50	0.291	145.2	289.2	145.2	3,410	16,304	-276	1,576	17,603
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.79	6.67	0.3980	0.05	0.145	50.4	108.8	50.4	2,128	-7,226	-9	352	-6,883
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.79	6.67	0.3980	0.39	0.145	145.2	289.2	145.2	2,128	7,741	-26	1,013	8,727
Totals:											3,796	-26	7,791	11,560	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.99	6.91	1.3300	0.63	0.337	50.4	108.8	50.4	925	-2,695	-23	615	-2,103
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.99	6.91	1.3300	2.06	0.337	145.2	289.2	145.2	925	2,887	-65	1,771	4,593
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.49	7.06	0.6570	0.60	0.190	50.4	108.8	50.4	750	-1,948	-13	347	-1,615
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.49	7.06	0.6570	2.05	0.190	145.2	289.2	145.2	750	2,087	-38	998	3,047
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.31	7.13	1.5000	0.71	0.900	50.4	108.8	50.4	2,000	-4,895	-41	565	-4,372
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.31	7.13	1.5000	2.42	0.900	145.2	289.2	145.2	2,000	5,244	-118	1,626	6,753
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.28	7.19	1.3300	0.63	0.337	50.4	108.8	50.4	925	-2,143	-24	489	-1,678
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.28	7.19	1.3300	2.06	0.337	145.2	289.2	145.2	925	2,296	-68	1,409	3,637
		COMMUNICATION													
Totals:											832	-390	7,820	8,262	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.40	22.02	290.0	290.0	640.00	47.00	--	24.00	--	264	1,603	1,867
Totals:											264	1,603	1,867	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.38	5.46	289.0	289.0	50.00	4.50	3.50	96.00	4	41	46
Totals:											4	41	46

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm	KU, UTILITY	25.08	4.28	340.0	340.0	60.00	24.00	20.00	3.00	72.00	457	626	1,083
Totals:												457	626	1,083

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser	KU, UTILITY	25.71	5.85	360.0	360.0	25.71	308.53	4.00	4.00	308.53	12	338	350
Totals:												12	338	350

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.24	0.00	0.0	0.0	13.00	9.00	10.50	0	163	163	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.56	45.00	12.1	0.0	6.00	3.50	7.50	43	44	87	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.56	-45.00	205.9	0.0	6.00	3.50	7.50	-42	44	2	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.79	0.00	199.0	289.0	2.00	3.00	3.19	-2	12	10	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.99	0.00	199.0	289.0	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.49	0.00	199.0	289.0	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.31	0.00	199.0	289.0	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.28	0.00	199.0	289.0	5.00	3.00	0.00	-6	0	-6	
Totals:											-23	263	240

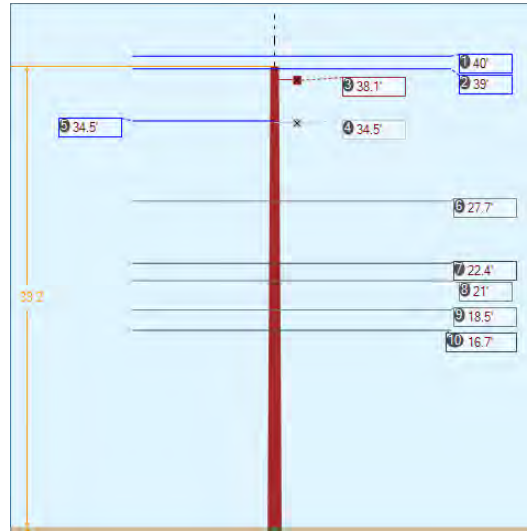
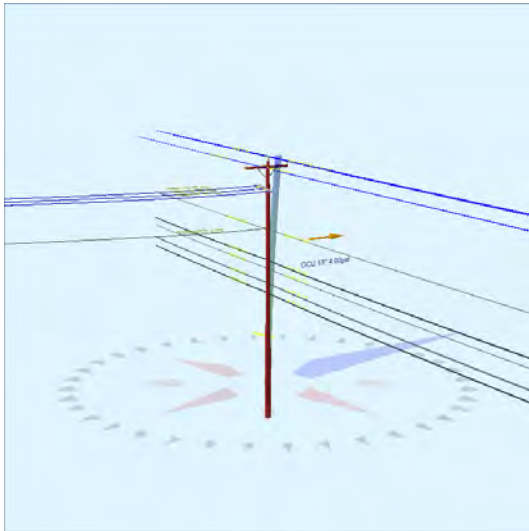
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	30.27	0.00	25.27	0.375	75.00	32.3	50.0	0.273	37.72	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	794	721	0	0	0	0	54	
Totals:											0	0	0	54

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	25.27	32.3	20,000	1.00	20,000	721	0	3.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.24	33.65	10.66	9.93	7.32	11.62	1.60e+6	60.00	57.00	35.24	218,774	2192.05	47.62

Pole Num:	13W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.56	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012334 Deg	Longitude:	-84.451939 Deg	Elevation:	903.564331844636		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.2	0.0
Groundline	22.2	0.0
Vertical	10.1	22.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,643	7.2
Groundline	20,643	7.2
GL Allowable	95,083	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 7.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	134	15.9	6,512	31.6	6.9	465	398	4	469	6.9
Comms	444	52.6	8,291	40.2	8.7	592	581	5	598	8.8
Pole	219	26.0	4,286	20.8	4.5	306	2,306	21	327	4.8
Crossarms	32	3.7	1,066	5.2	1.1	76	190	2	78	1.1
Insulators	15	1.7	488	2.4	0.5	35	106	1	36	0.5
Pole Load	844	100.0	20,643	100.0	21.7	1,475	3,582	32	1,507	22.2
Pole Reserve Capacity			74,440		78.3	5,325			5,293	77.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 7.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	149	17.7	7,023	34.0	7.4	502	467	4	506	7.4
Unknown, COMMUNICATION	444	52.6	8,268	40.1	8.7	591	619	6	596	8.8
Pole	219	26.0	4,286	20.8	4.5	306	2,306	21	327	4.8
<Undefined>	32	3.7	1,066	5.2	1.1	76	190	2	78	1.1
Totals:	844	100.0	20,643	100.0	21.7	1,475	3,582	32	1,507	22.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	40.04	0.00	0.5630	0.35	0.291	121.0	107.4	121.0	3,410	-24,142	0	1,474	-22,668
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	40.04	0.00	0.5630	0.06	0.291	50.4	288.8	50.4	3,410	27,420	0	609	28,029
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	38.96	45.33	0.5630	0.35	0.291	121.0	107.4	121.0	3,410	-23,491	235	1,434	-21,821
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	38.96	45.33	0.5630	0.06	0.291	50.4	288.8	50.4	3,410	26,680	98	593	27,371
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	38.96	45.33	0.5630	0.35	0.291	121.0	107.4	121.0	3,410	-23,491	-225	1,434	-22,281
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	38.96	45.33	0.5630	0.06	0.291	50.4	288.8	50.4	3,410	26,680	-94	593	27,180
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.53	18.43	0.3250	0.06	0.107	70.4	209.7	70.5	100	-3,191	-6	66	-3,131

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.53	48.63	0.3250	0.06	0.107	70.4	209.7	70.5	100	-3,191	0	66	-3,125
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.53	48.63	0.3250	0.06	0.107	70.4	209.7	70.5	100	-3,191	-4	66	-3,130
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.71	6.84	0.3980	0.27	0.145	121.0	107.4	121.0	2,128	-10,420	-22	861	-9,581
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.71	6.84	0.3980	0.05	0.145	50.4	288.8	50.4	2,128	11,835	-9	356	12,182
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.71	6.84	0.3250	0.06	0.107	70.4	209.7	70.5	100	-2,560	-11	53	-2,518
											Totals:	-1,061	-37	7,603	6,505

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.42	7.15	1.3300	1.65	0.337	121.0	107.4	121.0	925	-3,665	-56	1,420	-2,301
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.42	7.15	1.3300	0.63	0.337	50.4	288.8	50.4	925	4,163	-23	587	4,727
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.96	7.24	0.6570	1.64	0.190	121.0	107.4	121.0	750	-2,778	-32	839	-1,971
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.96	7.24	0.6570	0.60	0.190	50.4	288.8	50.4	750	3,156	-13	347	3,489
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.48	7.38	1.5000	1.92	0.900	121.0	107.4	121.0	2,000	-6,530	-100	1,279	-5,352
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.48	7.38	1.5000	0.71	0.900	50.4	288.8	50.4	2,000	7,417	-42	529	7,904
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.73	7.49	1.3300	1.65	0.337	121.0	107.4	121.0	925	-2,735	-58	1,059	-1,734
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.73	7.49	1.3300	0.63	0.337	50.4	288.8	50.4	925	3,106	-24	438	3,520
		COMMUNICATION													
											Totals:	2,133	-349	6,499	8,283

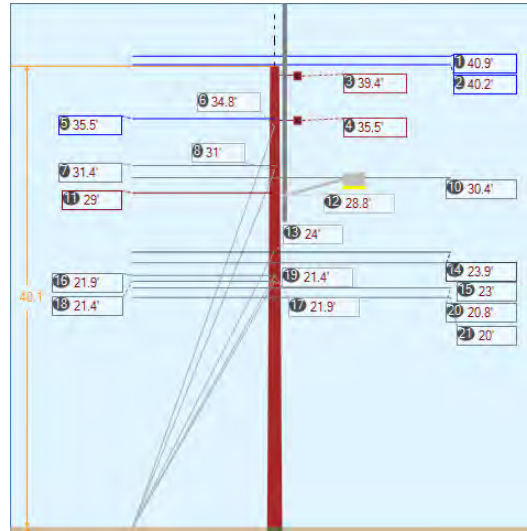
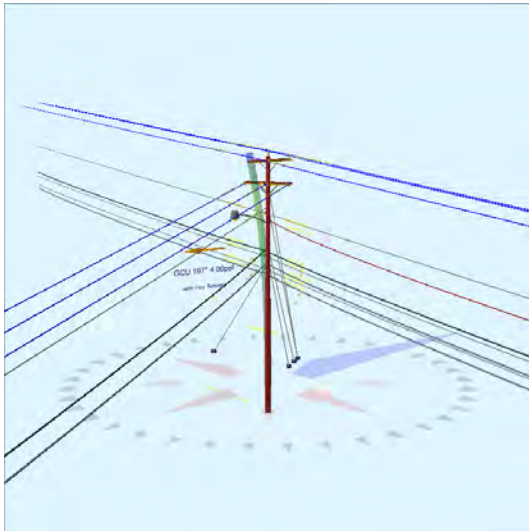
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.15	5.47	288.1	288.1	50.00	4.50	3.50	96.00	8	69	77	
Normal	Crossarm	34.53	5.68	209.7	209.7	50.00	4.50	3.50	96.00	-42	1,030	989	
										Totals:	-33	1,099	1,065

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	39.17	0.00	0.0	0.0	13.00	9.00	10.50	0	181	181
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.33	45.00	11.2	0.0	6.00	3.50	7.50	43	49	92
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.33	-45.00	205.0	0.0	6.00	3.50	7.50	-41	49	8
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.53	0.00	209.7	0.0	3.00	3.80	12.75	-8	81	73
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.53	45.00	292.5	0.0	3.00	3.80	12.75	0	81	81
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.53	-45.00	126.9	0.0	3.00	3.80	12.75	-16	81	65
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.71	0.00	198.1	288.1	2.00	3.00	3.19	-2	13	11
Bolt	Three Bolt	Unknown, COMMUNICATION	22.42	0.00	198.1	288.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.96	0.00	198.1	288.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.48	0.00	198.1	288.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.73	0.00	198.1	288.1	5.00	3.00	0.00	-6	0	-6
Totals:										-47	535	487

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.08	33.28	11.09	14.69	7.32	11.96	1.60e+6	60.00	57.00	39.17	35,434	354.65	9.90

Pole Num:	14W - 501-15	Pole Length / Class:	45 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.92	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012225 Deg	Longitude:	-84.451540 Deg	Elevation:	908.332776119016		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.7	31.0
Groundline	16.5	0.0
Vertical	23.2	30.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,401	171.5
Groundline	15,795	163.9
GL Allowable	122,931	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.0	332.0		87.4	197.0	87.5	189.2
? EHS 3/8 (Down)			34.8	84.3	197.0	92.8	180.0
? EHS 3/8 (Down)			31.0	73.5	197.0	80.8	198.4
? Single Helix Anchor	16.5	332.0		18.6	197.0	18.7	210.0
? EHS 1/4 (Down)			24.0	62.2	197.0	68.8	210.0
? Single Helix Anchor	13.0	332.0		17.0	197.0	17.1	210.0
? EHS 1/4 (Down)			21.9	56.9	197.0	63.0	210.0
? Single Helix Anchor	25.4	290.9		6.2	197.0	26.0	40.7
? EHS 1/4 (Down)			21.4	20.8	197.0	95.4	40.7
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 163.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	10,285	630.9	109,620	694.0	89.2	19,822	908	7	19,829	291.6
Comms	5,793	355.4	39,452	249.8	32.1	7,134	1,322	10	7,144	105.1
GuyBraces	-14,782	-906.8	-135,835	-860.0	-110.5	-24,562	38,863	292	-24,271	-356.9
Pole	205	12.6	1,253	7.9	1.0	227	2,795	21	248	3.6
Crossarms	45	2.7	493	3.1	0.4	89	285	2	91	1.3
Streetlights	21	1.3	341	2.2	0.3	62	114	1	63	0.9
Risers	50	3.1	302	1.9	0.3	55	58	0	55	0.8
Insulators	13	0.8	169	1.1	0.1	31	133	1	32	0.5
Pole Load	1,630	100.0	15,795	100.0	12.9	2,856	44,478	334	3,190	46.9
Pole Reserve Capacity			107,136		87.2	3,944			3,610	53.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 163.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-161	-9.9	4,298	27.2	3.5	777	29,720	223	1,000	14.7
Unknown, COMMUNICATION	1,541	94.5	9,751	61.7	7.9	1,763	11,678	88	1,851	27.2
Pole	205	12.6	1,253	7.9	1.0	227	2,795	21	248	3.6
<Undefined>	45	2.7	493	3.1	0.4	89	285	2	91	1.3
Totals:	1,630	100.0	15,795	100.0	12.9	2,856	44,478	334	3,190	46.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.93	0.00	0.7200	0.37	0.462	142.4	109.1	142.4	6,210	190,820	0	1,694	192,514
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.93	0.00	0.7200	0.27	0.462	121.0	287.4	121.0	6,210	-182,724	0	1,469	-181,255
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.17	45.37	0.7200	0.37	0.462	142.4	109.1	142.4	6,210	187,279	348	1,663	189,290
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.17	45.37	0.7200	0.27	0.462	121.0	287.4	121.0	6,210	-179,334	295	1,442	-177,597
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.17	45.37	0.7200	0.37	0.462	142.4	109.1	142.4	6,210	187,279	-292	1,663	188,650
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.17	45.37	0.7200	0.27	0.462	121.0	287.4	121.0	6,210	-179,334	-248	1,442	-178,140
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.49	18.77	0.3980	0.44	0.145	149.2	148.2	149.2	1,828	81,210	17	282	81,508
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.49	48.76	0.3980	0.44	0.145	149.2	148.2	149.2	1,828	81,210	11	282	81,502
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.49	48.76	0.3980	0.44	0.145	149.2	148.2	149.2	1,828	81,210	2	282	81,494
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.41	7.03	0.3980	0.44	0.145	149.2	148.2	149.2	1,828	71,874	28	249	72,151
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.38	7.09	0.3980	0.38	0.145	142.4	109.1	142.4	2,128	48,498	23	925	49,445
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.38	7.09	0.3980	0.27	0.145	121.0	287.4	121.0	2,128	-46,440	19	802	-45,618
Secondary	DUPLEX 4 AWG	KU, UTILITY	29.05	7.18	0.6300	1.51	0.107	142.4	109.1	142.5	150	3,269	18	1,113	4,399
Totals:										344,815	221	13,307	358,343		

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	23.91	7.50	1.3300	2.01	0.337	142.4	109.1	142.4	925	16,589	58	1,483	18,130
CATV	CATV 1.0	Unknown, COMMUNICATION	23.91	7.50	1.3300	1.65	0.337	121.0	287.4	121.0	925	-15,886	49	1,286	-14,550
CATV	CATV 1.0	Unknown, COMMUNICATION	23.91	7.50	1.3300	2.12	0.337	149.2	148.2	149.3	925	27,681	61	387	28,129
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.97	7.56	0.6570	2.00	0.190	142.4	109.1	142.4	750	12,921	33	901	13,855
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.97	7.56	0.6570	1.64	0.190	121.0	287.4	121.0	750	-12,373	28	781	-11,564
Telco	TELE 1.5	Unknown, COMMUNICATION	21.88	7.63	1.5000	2.50	0.900	149.2	148.2	149.3	2,000	54,782	125	387	55,294
Telco	TELE 1.5	Unknown, COMMUNICATION	21.38	7.66	1.5000	2.36	0.900	142.4	109.1	142.4	2,000	32,078	72	1,450	33,600
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.81	7.70	0.6570	2.00	0.190	142.4	109.1	142.4	750	11,706	34	816	12,556
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.81	7.70	0.6570	1.64	0.190	121.0	287.4	121.0	750	-11,210	29	708	-10,473
Telco	TELE 1.5	Unknown, COMMUNICATION	19.96	7.75	1.5000	2.36	0.900	142.4	109.1	142.4	2,000	29,940	104	1,353	31,397
Telco	TELE 1.5	Unknown, COMMUNICATION	19.96	7.75	1.5000	1.92	0.900	121.0	287.4	121.0	2,000	-28,670	88	1,173	-27,408
Totals:											117,560	681	10,725	128,966	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	39.36	5.77	108.2	108.2	50.00	4.50	3.50	96.00	26	56	81
Normal	Crossarm	35.49	6.02	148.2	148.2	50.00	4.50	3.50	96.00	0	1,530	1,530
Totals:										26	1,586	1,612

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm KU, UTILITY	28.77	4.69	185.0	185.0	60.00	24.00	20.00	3.00	72.00	512	604	1,116
Totals:										512	604	1,116	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 320.0°	Riser	KU, UTILITY	30.49	6.57	320.0	320.0	30.49	365.87	4.00	4.00	365.87	-29	1,015	986	
												Totals:	-29	1,015	986

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	40.06	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156	
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.55	45.00	190.9	0.0	6.00	3.50	7.50	38	42	81	
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.55	-45.00	25.6	0.0	6.00	3.50	7.50	-32	42	10	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.49	0.00	148.2	0.0	3.00	3.80	12.75	9	70	79	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.49	45.00	230.6	0.0	3.00	3.80	12.75	14	70	84	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.49	-45.00	65.8	0.0	3.00	3.80	12.75	3	70	73	
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.41	0.00	148.2	148.2	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.38	0.00	198.2	108.2	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.05	0.00	109.1	109.1	2.00	3.00	3.19	1	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.91	0.00	198.2	108.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.97	0.00	198.2	108.2	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	21.88	0.00	148.2	238.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	21.38	0.00	109.1	199.1	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.81	0.00	198.2	108.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.96	0.00	198.2	108.2	5.00	3.00	0.00	5	0	5	
										Totals:	67	486	552

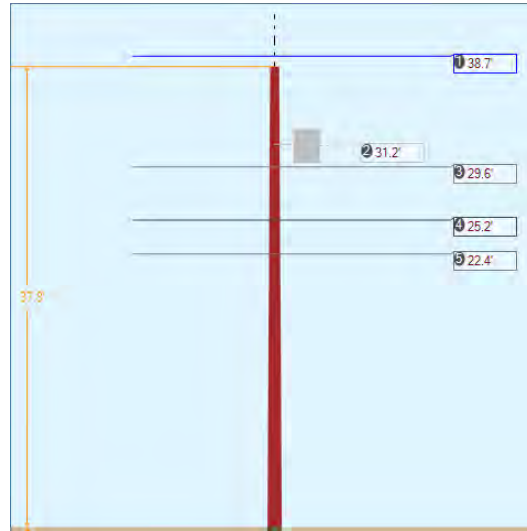
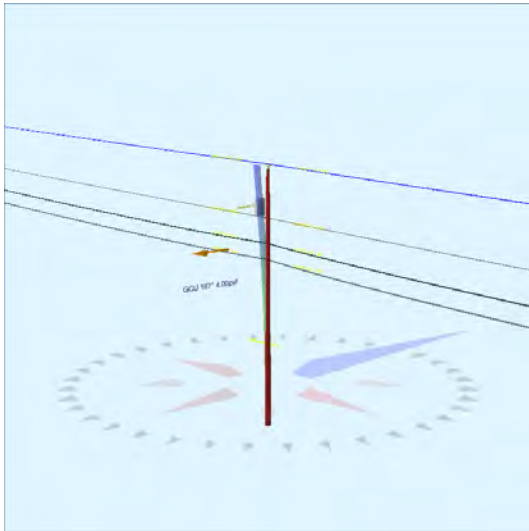
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	34.82	0.00	19.00	0.375	75.00	332.0	61.1	0.273	37.99	2.80
EHS 3/8	Down	KU, UTILITY	30.98	0.00	19.00	0.375	75.00	332.0	58.3	0.273	34.65	2.22
EHS 1/4	Down	Unknown, COMMUNICATION	24.03	0.00	16.50	0.25	75.00	332.0	55.3	0.121	27.42	1.45
EHS 1/4	Down	Unknown, COMMUNICATION	21.88	0.00	13.00	0.25	75.00	332.0	59.1	0.121	23.74	1.15
EHS 1/4	Down	Unknown, COMMUNICATION	21.38	0.00	25.43	0.25	75.00	290.9	39.9	0.121	31.40	0.55

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,866	11,696	11,683	10,232	5,638	-5,518	-187,881
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,201	10,183	10,182	8,660	5,356	-5,242	-159,038
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,118	3,744	3,726	3,064	2,120	-2,075	-48,739
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,769	3,426	3,403	2,919	1,750	-1,712	-36,315
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,712	5,192	1,244	798	954	-575	-12,066
Totals:										25,673	15,817	-15,121	-444,039

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	19.00	332.0	25,000	1.00	25,000	21,872	21,858	87.5
Single Helix Anchor			18.00	16.50	332.0	20,000	1.00	20,000	3,744	3,726	18.7
Single Helix Anchor			18.00	13.00	332.0	20,000	1.00	20,000	3,426	3,403	17.1
Single Helix Anchor			18.00	25.43	290.9	20,000	1.00	20,000	5,192	1,244	26.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.01	34.37	11.72	34.20	7.96	13.03	1.60e+6	60.00	57.00	40.06	191,797	1917.14	4.31

Pole Num:	42W - 00501-34	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.17	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.06	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009659 Deg	Longitude:	-84.442405 Deg	Elevation:	923.472949148163		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.5	0.0
Groundline	22.5	0.0
Vertical	10.6	22.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,125	189.1
Groundline	20,125	189.1
GL Allowable	91,356	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 189.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	190	24.9	6,559	32.6	7.2	486	164	2	487	7.2
Comms	319	41.9	7,915	39.3	8.7	586	538	5	591	8.7
PowerEquipments	36	4.8	1,415	7.0	1.6	105	636	6	111	1.6
Pole	211	27.7	4,032	20.0	4.4	299	2,189	20	319	4.7
Insulators	5	0.7	204	1.0	0.2	15	48	0	16	0.2
Pole Load	761	100.0	20,125	100.0	22.0	1,490	3,575	33	1,523	22.4
Pole Reserve Capacity			71,231		78.0	5,310			5,277	77.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 189.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	231	30.4	8,166	40.6	8.9	605	829	8	612	9.0
Unknown, COMMUNICATION	319	41.9	7,927	39.4	8.7	587	557	5	592	8.7
Pole	211	27.7	4,032	20.0	4.4	299	2,189	20	319	4.7
Totals:	761	100.0	20,125	100.0	22.0	1,490	3,575	33	1,523	22.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.70	0.00	0.3980	0.37	0.145	140.1	96.0	140.1	2,128	-4,516	0	1,419	-3,098
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.70	0.00	0.3980	0.22	0.145	109.2	275.2	109.2	2,128	5,664	0	1,105	6,769
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.60	6.65	0.3980	0.37	0.145	140.1	96.0	140.1	2,128	-3,453	26	1,085	-2,343
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.60	6.65	0.3980	0.22	0.145	109.2	275.2	109.2	2,128	4,330	20	844	5,195
										Totals:	2,026	45	4,452	6,524	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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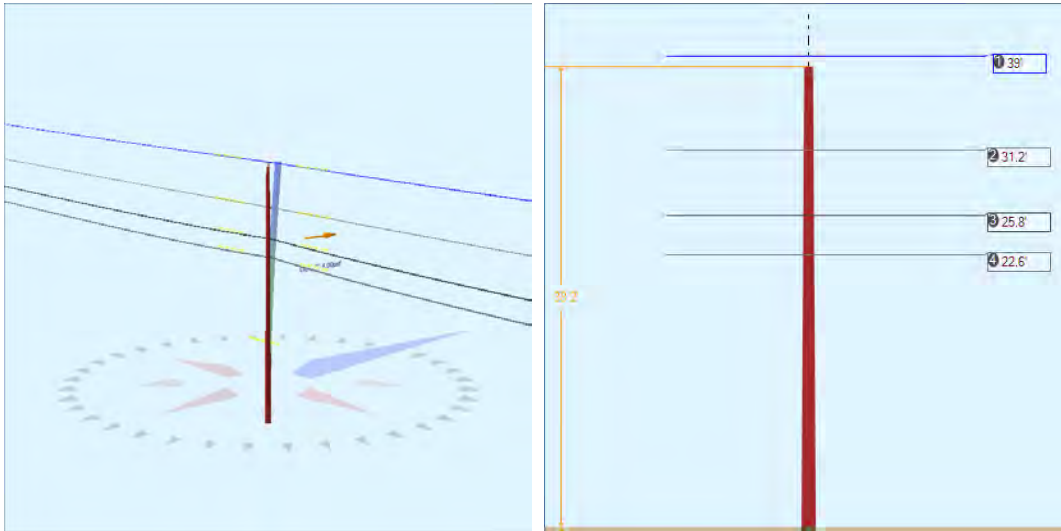
CATV	CATV 1.0	Unknown, COMMUNICATION	25.24	6.91	1.3300	1.97	0.337	140.1	96.0	140.1	925	-1,279	63	1,884	668
CATV	CATV 1.0	Unknown, COMMUNICATION	25.24	6.91	1.3300	1.46	0.337	109.2	275.2	109.3	925	1,605	49	1,467	3,121
Telco	TELE 1.5	Unknown, COMMUNICATION	22.44	7.07	1.5000	2.31	0.900	140.1	96.0	140.2	2,000	-2,460	113	1,831	-516
Telco	TELE 1.5	Unknown, COMMUNICATION	22.44	7.07	1.5000	1.70	0.900	109.2	275.2	109.3	2,000	3,085	88	1,426	4,599
Totals:											951	314	6,608	7,873	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-15KVA	KU, UTILITY	31.21	21.05	265.0	265.0	335.00	34.00	--	22.00	--	273	1,134	1,407
Totals:											273	1,134	1,407

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin Pin Insulator - 22 kV	KU, UTILITY	37.83	0.00	0.0	0.0	13.00	9.00	10.50	0	176	176	
Spool Spool Insulator - 25 kV	KU, UTILITY	29.60	0.00	185.6	95.6	2.00	3.00	3.19	2	14	16	
Bolt Three Bolt	Unknown, COMMUNICATION	25.24	0.00	185.6	95.6	5.00	3.00	0.00	5	0	5	
Bolt Three Bolt	Unknown, COMMUNICATION	22.44	0.00	185.6	95.6	5.00	3.00	0.00	6	0	6	
Totals:										13	189	203

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.96	33.30	10.93	14.59	7.32	11.80	1.60e+6	60.00	57.00	37.83	33,886	337.27	9.43

Pole Num:	43W - 00501-35	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.83	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.19	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009604 Deg	Longitude:	-84.441940 Deg	Elevation:	923.741301816424		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.9	5.6
Groundline	22.9	5.6
Vertical	7.3	5.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,749	5.6
Groundline	20,749	5.6
GL Allowable	92,294	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 5.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	202	25.7	7,186	34.6	7.8	527	198	2	528	7.8
Comms	366	46.5	9,242	44.5	10.0	677	648	6	683	10.0
Pole	213	27.1	4,115	19.8	4.5	302	2,218	20	322	4.7
Insulators	5	0.6	206	1.0	0.2	15	48	0	16	0.2
Pole Load	786	100.0	20,749	100.0	22.5	1,520	3,111	28	1,548	22.8
Pole Reserve Capacity			71,545		77.5	5,280			5,252	77.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 5.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	207	26.3	7,381	35.6	8.0	541	226	2	543	8.0
Unknown, COMMUNICATION	366	46.5	9,253	44.6	10.0	678	667	6	684	10.1
Pole	213	27.1	4,115	19.8	4.5	302	2,218	20	322	4.7
Totals:	786	100.0	20,749	100.0	22.5	1,520	3,111	28	1,548	22.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.04	0.00	0.3980	0.47	0.145	159.9	95.4	159.9	2,128	394	0	1,636	2,029
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.04	0.00	0.3980	0.37	0.145	140.1	276.0	140.1	2,128	477	0	1,433	1,910
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.25	6.57	0.3980	0.47	0.145	159.9	95.4	159.9	2,128	315	29	1,309	1,652
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.25	6.57	0.3980	0.37	0.145	140.1	276.0	140.1	2,128	381	25	1,147	1,553
Totals:											1,567	54	5,525	7,145	

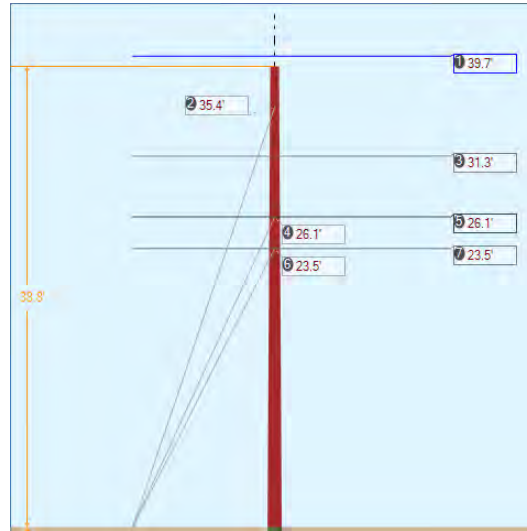
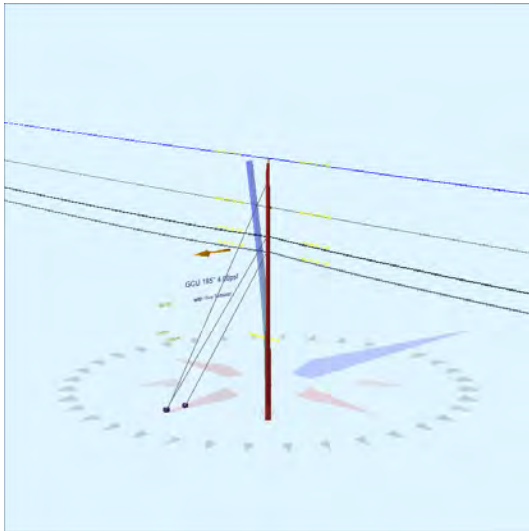
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	25.84	6.89	1.3300	2.33	0.337	159.9	95.4	159.9	925	113	72	2,205	2,391
CATV	CATV 1.0	Unknown, COMMUNICATION	25.84	6.89	1.3300	1.97	0.337	140.1	276.0	140.1	925	137	63	1,932	2,133
Telco	TELE 1.5	Unknown, COMMUNICATION	22.57	7.08	1.5000	2.75	0.900	159.9	95.4	160.0	2,000	214	129	2,105	2,449
Telco	TELE 1.5	Unknown, COMMUNICATION	22.57	7.08	1.5000	2.31	0.900	140.1	276.0	140.2	2,000	259	113	1,845	2,217
Totals:											723	379	8,088	9,189	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	38.17	0.00	0.0	0.0	13.00	9.00	10.50	0	177	177
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.25	0.00	5.7	275.7	2.00	3.00	3.19	2	15	17
Bolt	Three Bolt	Unknown, COMMUNICATION	25.84	0.00	5.7	275.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.57	0.00	5.7	275.7	5.00	3.00	0.00	6	0	6
Totals:										13	192	205

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.00	33.00	11.06	13.22	7.32	11.84	1.60e+6	60.00	57.00	38.17	42,764	426.15	13.70

Pole Num:	44W - 00501-36	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.19	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.43	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009559 Deg	Longitude:	-84.441384 Deg	Elevation:	919.00652458399		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	12.0	0.0
Groundline	12.0	0.0
Vertical	0.9	20.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,849	184.9
Groundline	10,849	184.9
GL Allowable	94,079	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.5	182.6		0.0	184.8	3.3	0.0
? EHS 3/8 (Down)			35.4	0.0	184.8	5.2	0.0
? Single Helix Anchor	22.4	183.4		0.0	184.8	1.7	10.0
? EHS 1/4 (Down)			26.1	0.0	184.8	6.4	10.0
? Single Helix Anchor	18.6	182.5		0.0	184.8	1.7	0.0
? EHS 1/4 (Down)			23.5	0.0	184.8	6.2	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 184.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	21	4.4	703	6.5	0.8	51	197	2	53	0.8
Comms	241	49.3	5,626	51.9	6.0	407	645	6	412	6.1
GuyBraces	3	0.7	94	0.9	0.1	7	25	0	7	0.1
Pole	218	44.6	4,244	39.1	4.5	307	2,274	20	327	4.8
Insulators	5	1.0	182	1.7	0.2	13	48	0	14	0.2
Pole Load	488	100.0	10,849	100.0	11.5	784	3,189	29	813	11.9
Pole Reserve Capacity			83,230		88.5	6,016			5,987	88.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 184.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	28	5.6	935	8.6	1.0	68	238	2	70	1.0
Unknown, COMMUNICATION	243	49.8	5,670	52.3	6.0	410	676	6	416	6.1
Pole	218	44.6	4,244	39.1	4.5	307	2,274	20	327	4.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	488	100.0	10,849	100.0	11.5	784	3,189	29	813	11.9

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.68	0.00	0.3980	0.36	0.145	138.9	94.0	138.9	2,128	-1,766	0	1,444	-322
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.68	0.00	0.3980	0.47	0.145	159.9	275.4	159.9	2,128	-917	0	1,663	746
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.25	6.61	0.3980	0.36	0.145	138.9	94.0	138.9	2,128	-1,391	-25	1,137	-279
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.25	6.61	0.3980	0.47	0.145	159.9	275.4	159.9	2,128	-722	-29	1,309	558
											Totals:	-4,796	-54	5,553	703

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, COMMUNICATION	26.14	6.91	1.3300	1.95	0.337	138.9	94.0	139.0	925	-506	-63	1,938	1,370
CATV	CATV 1.0	Unknown, COMMUNICATION	26.14	6.91	1.3300	2.33	0.337	159.9	275.4	159.9	925	-263	-72	2,231	1,896
Telco	TELE 1.5	Unknown, COMMUNICATION	23.48	7.07	1.5000	2.29	0.900	138.9	94.0	139.0	2,000	-982	-112	1,902	808
Telco	TELE 1.5	Unknown, COMMUNICATION	23.48	7.07	1.5000	2.75	0.900	159.9	275.4	160.0	2,000	-510	-129	2,190	1,551
											Totals:	-2,260	-377	8,261	5,625

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.81	0.00	0.0	0.0	13.00	9.00	10.50	0	180	180	
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.25	0.00	4.7	274.7	2.00	3.00	3.19	-2	15	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	26.14	0.00	4.7	274.7	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.48	0.00	4.7	274.7	5.00	3.00	0.00	-6	0	-6	
										Totals:	-13	195	182

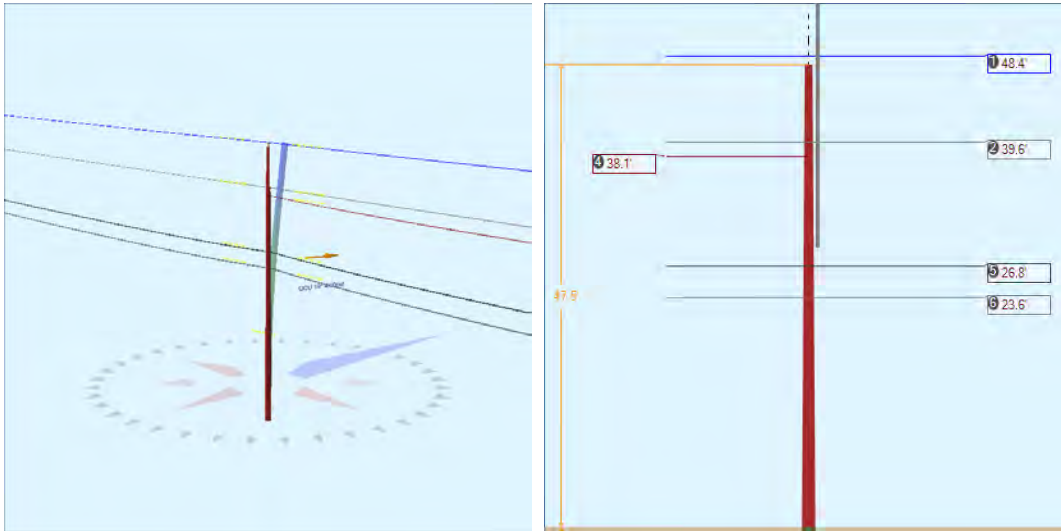
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	35.39	0.00	22.46	0.375	75.00	182.6	57.4	0.273	40.25	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	26.14	0.00	22.37	0.25	75.00	183.4	49.3	0.121	32.67	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	23.48	0.00	18.64	0.25	75.00	182.5	51.4	0.121	28.24	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	715	650	0	0	0	0	39
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	383	348	0	0	0	0	29
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	371	337	0	0	0	0	26
Totals:										0	0	0	94

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	22.46	182.6	20,000	1.00	20,000	650	0	3.3
Single Helix Anchor			18.00	22.37	183.4	20,000	1.00	20,000	348	0	1.7
Single Helix Anchor			18.00	18.64	182.5	20,000	1.00	20,000	337	0	1.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.38	33.04	11.12	8.03	7.32	11.92	1.60e+6	60.00	57.00	38.81	336,458	3542.79	111.11

Pole Num:	45W - 501-37	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.49	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.94	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009543 Deg	Longitude:	-84.440905 Deg	Elevation:	905.728432745413		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.5	0.0
Groundline	24.5	0.0
Vertical	7.9	22.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,148	39.1
Groundline	34,148	39.1
GL Allowable	142,051	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 39.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	436	40.0	17,600	51.5	12.4	837	260	2	839	12.3
Comms	281	25.9	7,473	21.9	5.3	355	668	5	360	5.3
Pole	281	25.8	6,573	19.3	4.6	313	3,534	24	337	4.9
Risers	85	7.8	2,247	6.6	1.6	107	74	1	107	1.6
Insulators	5	0.5	255	0.8	0.2	12	51	0	12	0.2
Pole Load	1,088	100.0	34,148	100.0	24.0	1,624	4,587	31	1,655	24.3
Pole Reserve Capacity			107,903		76.0	5,177			5,145	75.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 39.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	526	48.3	20,092	58.8	14.1	955	366	2	958	14.1
Unknown, COMMUNICATION	281	25.9	7,484	21.9	5.3	356	687	5	360	5.3
Pole	281	25.8	6,573	19.3	4.6	313	3,534	24	337	4.9
Totals:	1,088	100.0	34,148	100.0	24.0	1,624	4,587	31	1,655	24.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	48.39	0.00	0.3980	0.52	0.145	170.4	93.8	170.4	2,128	59,572	0	1,704	61,277
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	48.39	0.00	0.3980	0.35	0.145	138.9	274.0	138.9	2,128	-59,279	0	1,394	-57,885
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.55	6.96	0.3980	0.52	0.145	170.4	93.8	170.4	2,128	48,676	27	1,393	50,095
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.55	6.96	0.3980	0.35	0.145	138.9	274.0	138.9	2,128	-48,436	22	1,139	-47,275
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.07	7.05	0.3980	0.52	0.145	170.4	93.8	170.4	450	9,908	19	1,340	11,268
										Totals:	10,442	67	6,970	17,479	

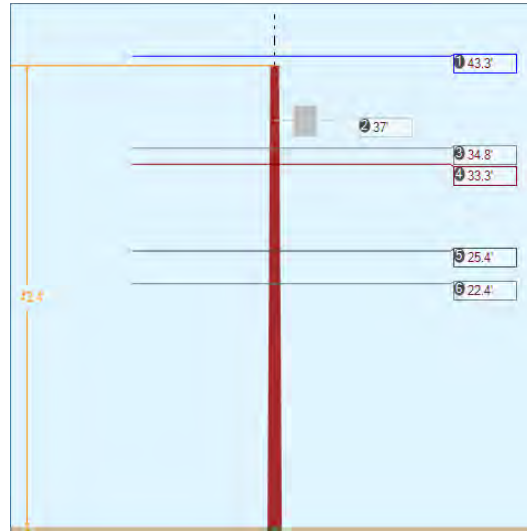
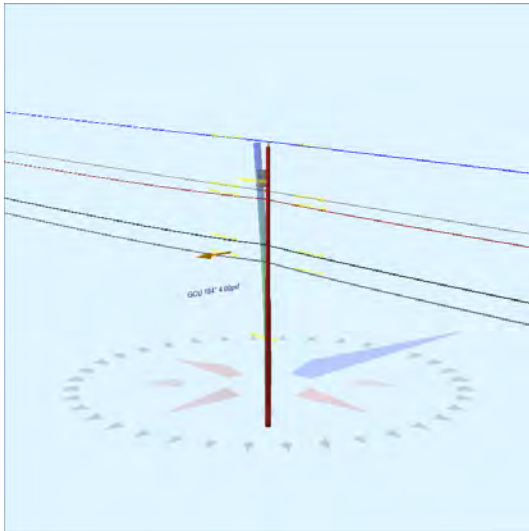
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	26.81	7.72	1.3300	2.52	0.337	170.4	93.8	170.5	925	14,344	70	1,924	16,338
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	26.81	7.72	1.3300	1.95	0.337	138.9	274.0	139.0	925	-14,273	57	1,574	-12,642
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.59	7.92	1.5000	2.98	0.900	170.4	93.8	170.5	2,000	27,286	126	1,850	29,262
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.59	7.92	1.5000	2.29	0.900	138.9	274.0	139.0	2,000	-27,152	103	1,513	-25,536
		COMMUNICATION													
Totals:											205	357	6,860	7,422	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 110.0°	Riser	KU, UTILITY	39.02	7.04	110.0	110.0	39.02	468.27	4.00	4.00	468.27	14	2,217	2,231
Totals:											14	2,217	2,231	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	47.52	0.00	0.0	0.0	13.00	9.00	10.50	0	206	206
Spool	Spool Insulator - 25 kV	KU, UTILITY	39.55	0.00	3.9	273.9	2.00	3.00	3.19	2	17	19
Spool	Spool Insulator - 25 kV	KU, UTILITY	38.07	0.00	93.8	93.8	2.00	3.00	3.19	1	17	18
Bolt	Three Bolt	Unknown, COMMUNICATION	26.81	0.00	3.9	273.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	23.59	0.00	3.9	273.9	5.00	3.00	0.00	5	0	5
Totals:										13	240	253

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.82	33.01	12.76	17.33	7.96	13.67	1.60e+6	60.00	57.00	47.52	58,291	580.69	12.66

Pole Num:	46W - 501-38	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.38	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009511 Deg	Longitude:	-84.440310 Deg	Elevation:	900.081062633205		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.8	0.0
Groundline	21.8	0.0
Vertical	10.4	23.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,084	183.9
Groundline	27,084	183.9
GL Allowable	127,123	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 183.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	268	29.1	10,153	37.5	8.0	541	285	2	543	8.0
Comms	348	37.9	8,695	32.1	6.8	463	622	5	468	6.9
PowerEquipments	36	4.0	2,485	9.2	2.0	132	636	5	137	2.0
Pole	261	28.4	5,505	20.3	4.3	293	3,002	22	315	4.6
Insulators	6	0.6	246	0.9	0.2	13	51	0	13	0.2
Pole Load	918	100.0	27,084	100.0	21.3	1,442	4,597	34	1,476	21.7
Pole Reserve Capacity			100,039		78.7	5,358			5,324	78.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 183.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	310	33.7	12,871	47.5	10.1	685	954	7	692	10.2
Unknown, COMMUNICATION	348	37.9	8,707	32.2	6.9	464	641	5	468	6.9
Pole	261	28.4	5,505	20.3	4.3	293	3,002	22	315	4.6
Totals:	918	100.0	27,084	100.0	21.3	1,442	4,597	34	1,476	21.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.27	0.00	0.3980	0.26	0.145	117.9	94.3	117.9	2,128	712	0	1,337	2,048
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.27	0.00	0.3980	0.54	0.145	170.4	273.8	170.4	2,128	92	0	1,932	2,024
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.80	6.95	0.3980	0.26	0.145	117.9	94.3	117.9	2,128	572	22	1,075	1,669
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.80	6.95	0.3980	0.54	0.145	170.4	273.8	170.4	2,128	74	32	1,553	1,660
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.34	7.04	0.3980	0.26	0.145	117.9	94.3	117.9	450	116	23	1,030	1,168
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.34	7.04	0.3980	0.54	0.145	170.4	273.8	170.4	450	15	33	1,488	1,536
Totals:											1,581	111	8,415	10,106	

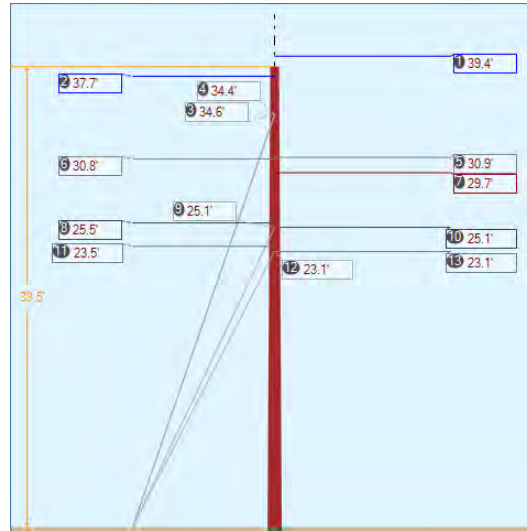
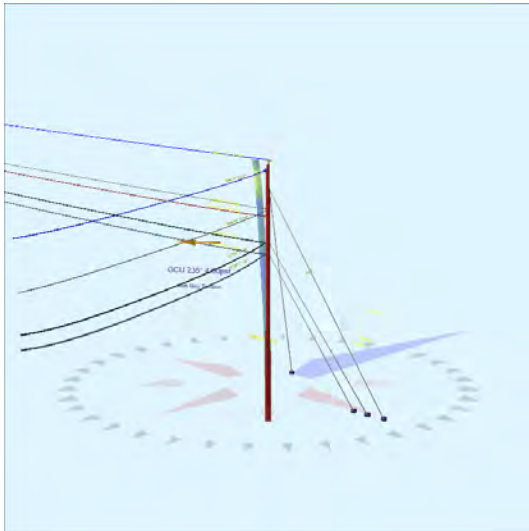
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.37	7.53	1.3300	1.60	0.337	117.9	94.3	117.9	925	181	58	1,596	1,836
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.37	7.53	1.3300	2.53	0.337	170.4	273.8	170.5	925	24	84	2,307	2,415
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.36	7.71	1.5000	1.86	0.900	117.9	94.3	117.9	2,000	345	104	1,538	1,987
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.36	7.71	1.5000	2.99	0.900	170.4	273.8	170.5	2,000	45	150	2,223	2,418
		COMMUNICATION													
Totals:											595	396	7,664	8,656	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	37.01	21.31	180.0	180.0	335.00	34.00	--	22.00	--	1,128	1,346	2,473
Totals:											1,128	1,346	2,473	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	42.39	0.00	0.0	0.0	13.00	9.00	10.50	0	197	197
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.80	0.00	184.1	94.1	2.00	3.00	3.19	2	16	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.34	0.00	184.1	94.1	2.00	3.00	3.19	2	16	18
Bolt	Three Bolt	Unknown, COMMUNICATION	25.37	0.00	184.1	94.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.36	0.00	184.1	94.1	5.00	3.00	0.00	6	0	6
Totals:										16	228	245

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	23.91	33.35	12.19	17.31	7.96	13.18	1.60e+6	60.00	57.00	42.39	44,199	441.98	9.62

Pole Num:	47W - 501-40	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.46	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.33	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009491 Deg	Longitude:	-84.439898 Deg	Elevation:	890.65922294686		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.2	34.7
Groundline	13.6	0.0
Vertical	17.1	30.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,020	271.1
Groundline	11,940	215.4
GL Allowable	93,317	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	9.1	343.0	34.6	8.2	234.8	9.6	190.0
? Single Helix Anchor ? EHS 3/8 (Down)	27.3	92.0	34.5	45.0	234.8	45.0	230.0
? Single Helix Anchor ? EHS 1/4 (Down)	24.1	92.9	25.1	14.3	234.8	14.3	260.0
? Single Helix Anchor ? EHS 1/4 (Down)	21.0	93.1	23.1	47.7	234.8	52.6	260.0
				13.3	234.8	13.4	260.0
				44.5	234.8	49.1	260.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 215.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,463	406.8	67,268	563.4	72.1	8,737	165	1	8,738	128.5
Comms	2,468	289.9	33,022	276.6	35.4	4,289	413	4	4,293	63.1
GuyBraces	-5,291	-621.6	-90,738	-760.0	-97.2	-11,785	19,152	173	-11,612	-170.8
Pole	204	23.9	2,212	18.5	2.4	287	2,250	20	308	4.5
Insulators	8	0.9	175	1.5	0.2	23	80	1	23	0.3
Pole Load	851	100.0	11,940	100.0	12.8	1,551	22,059	199	1,750	25.7
Pole Reserve Capacity			81,377		87.2	5,249			5,050	74.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 215.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	177	20.8	3,744	31.4	4.0	486	13,254	120	606	8.9
Unknown, COMMUNICATION	471	55.3	5,984	50.1	6.4	777	6,555	59	836	12.3
Pole	204	23.9	2,212	18.5	2.4	287	2,250	20	308	4.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	851	100.0	11,940	100.0	12.8	1,551	22,059	199	1,750	25.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.41	0.00	0.3980	0.21	0.145	117.9	274.3	117.9	2,128	56,404	0	663	57,067
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.71	16.46	0.3980	0.10	0.145	73.4	159.5	73.4	150	4,119	4	581	4,704
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.94	6.61	0.3980	0.21	0.145	117.9	274.3	117.9	2,128	44,261	11	521	44,792
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.82	6.62	0.3980	0.10	0.145	73.4	159.5	73.4	150	3,365	7	474	3,847
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.67	6.69	0.3980	0.21	0.145	117.9	274.3	117.9	450	8,975	11	499	9,485
										Totals:	117,124	34	2,738	119,896	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	25.46	6.93	1.3300	0.94	0.337	73.4	159.5	73.5	150	2,780	19	799	3,597
CATV	CATV 1.0	Unknown, COMMUNICATION	25.10	6.96	1.3300	1.59	0.337	117.9	274.3	117.9	925	15,608	28	861	16,496
Telco	TELE 1.5	Unknown, COMMUNICATION	23.52	7.05	1.5000	1.07	0.900	73.4	159.5	73.5	350	5,993	33	806	6,832
Telco	TELE 1.5	Unknown, COMMUNICATION	23.07	7.08	1.5000	1.85	0.900	117.9	274.3	117.9	2,000	31,018	49	864	31,932
										Totals:	55,399	129	3,330	58,858	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.54	0.00	0.0	0.0	13.00	9.00	10.50	0	169	169
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.71	0.00	159.5	159.5	3.00	3.80	12.75	4	84	88
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.94	0.00	274.3	274.3	2.00	3.00	3.19	1	14	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.82	0.00	159.5	159.5	2.00	3.00	3.19	1	14	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.67	0.00	274.3	274.3	2.00	3.00	3.19	1	13	14
Bolt	Single Bolt	Unknown, COMMUNICATION	25.46	0.00	159.5	249.5	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	25.10	0.00	274.3	274.3	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	23.52	0.00	159.5	249.5	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	23.07	0.00	274.3	274.3	5.00	3.00	0.00	3	0	3
Totals:										20	293	313

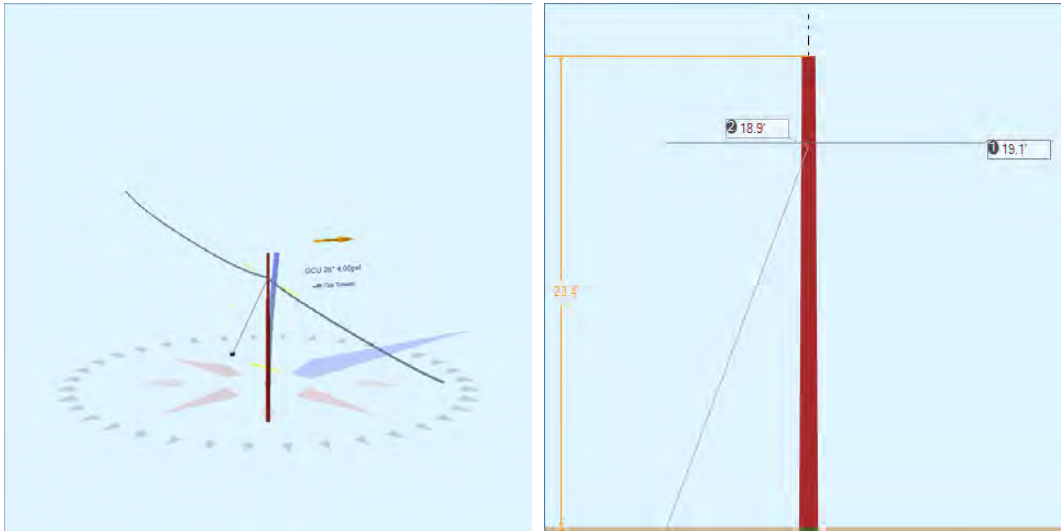
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	34.59	0.00	9.14	0.375	75.00	343.0	74.9	0.273	34.20	0.35
EHS 3/8	Down	KU, UTILITY	34.45	0.00	27.28	0.375	75.00	92.0	51.5	0.273	42.24	2.40
EHS 1/4	Down	Unknown, COMMUNICATION	25.10	0.00	24.06	0.25	75.00	92.9	46.1	0.121	33.01	1.34
EHS 1/4	Down	Unknown, COMMUNICATION	23.07	0.00	21.00	0.25	75.00	93.1	47.5	0.121	29.44	1.11

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,103	1,912	1,639	1,582	426	-260	-8,325
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,909	9,008	9,008	7,045	5,613	-3,093	-105,199
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,145	2,859	2,853	2,055	1,980	-1,066	-26,372
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,942	2,674	2,664	1,965	1,798	-962	-21,832
Totals:										12,647	9,817	-5,380	-161,728

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.14	343.0	20,000	1.00	20,000	1,912	1,639	9.6
Single Helix Anchor		18.00	27.28	92.0	20,000	1.00	20,000	9,008	9,008	45.0
Single Helix Anchor		18.00	24.06	92.9	20,000	1.00	20,000	2,859	2,853	14.3
Single Helix Anchor		18.00	21.00	93.1	20,000	1.00	20,000	2,674	2,664	13.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.23	34.52	10.65	24.22	7.32	11.89	1.60e+6	60.00	57.00	38.54	128,644	1290.02	5.85

Pole Num:	129W - 24546-32	Pole Length / Class:	30 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.28	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.006786 Deg	Longitude:	-84.428905 Deg	Elevation:	941.643000044341		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	10.0	0.0
Groundline	10.0	0.0
Vertical	0.5	14.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	4,348	25.8
Groundline	4,348	25.8
GL Allowable	45,062	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.3	297.3		0.0	26.3	0.3	120.0
? EHS 1/4 (Down)			18.9	0.0	26.3	1.2	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 25.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	150	56.5	2,842	65.4	6.3	430	467	7	437	6.4
GuyBraces	6	2.4	120	2.8	0.3	18	5	0	18	0.3
Pole	109	41.1	1,387	31.9	3.1	210	940	14	224	3.3
Insulators	0	0.0	-1	0.0	0.0	0	19	0	0	0.0
Pole Load	266	100.0	4,348	100.0	9.7	658	1,432	21	679	10.0
Pole Reserve Capacity			40,714		90.4	6,142			6,121	90.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 25.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	156	58.9	2,961	68.1	6.6	448	492	7	455	6.7
Pole	109	41.1	1,387	31.9	3.1	210	940	14	224	3.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	266	100.0	4,348	100.0	9.7	658	1,432	21	679	10.0

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Telco TELE 2.0	Unknown, COMMUNICATION	19.07	6.09	2.0000	2.74	2.000	112.8	296.8	113.0	1,500	678	16	1,569	2,263
Telco TELE 2.0	Unknown, COMMUNICATION	19.07	6.09	2.0000	1.32	2.000	69.5	116.3	69.5	1,500	-354	-25	966	587
Totals:											325	-9	2,535	2,850

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt Single Bolt	Unknown, COMMUNICATION	19.07	0.00	302.0	32.0	5.00	3.00	0.00	1	0	1	
Bolt Single Bolt	Unknown, COMMUNICATION	19.07	0.00	132.0	42.0	5.00	3.00	0.00	-1	0	-1	
Totals:										-1	0	-1

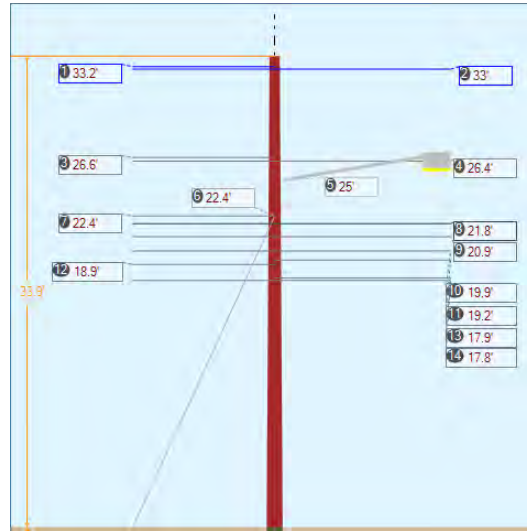
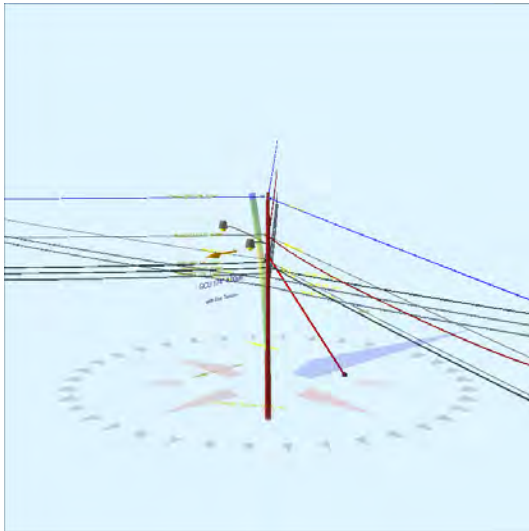
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4 Down	Unknown, COMMUNICATION	18.93	0.00	22.29	0.25	75.00	297.3	40.2	0.121	27.52	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	72	65	0	0	0	0	121	
Totals:										0	0	0	121

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.29	297.3	20,000	1.00	20,000	65	0	0.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	14.01	32.54	8.81	4.44	6.69	9.33	1.60e+6	60.00	57.00	23.39	280,632	2863.65	200.00

Pole Num:	140W - 501-61	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Inadequate
Aux Data 2	Unset	Setting Depth (ft):	6.08	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.97	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009175 Deg	Longitude:	-84.427482 Deg	Elevation:	905.084548884065		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	77.5	22.7
Groundline	70.6	0.0
Vertical	6.6	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	26,419	166.2
Groundline	39,385	277.0
GL Allowable	83,492	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	15.3	19.0		47.1	174.1	47.4	190.0
? EHS 1/4 (Down)			22.4	157.3	174.1	174.4	190.0
System Capacity Summary:				Inadequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 277.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-1,785	-57.9	-47,468	-120.5	-56.9	-4,087	306	3	-4,084	-60.1
Comms	6,012	195.0	110,504	280.6	132.4	9,515	1,781	17	9,532	140.2
GuyBraces	-1,087	-35.2	-23,037	-58.5	-27.6	-1,984	11,765	114	-1,869	-27.5
Pole	-42	-1.3	-680	-1.7	-0.8	-59	1,887	18	-40	-0.6
Streetlights	-14	-0.5	105	0.3	0.1	9	323	3	12	0.2
Insulators	-2	-0.1	-39	-0.1	-0.1	-3	124	1	-2	0.0
Pole Load	3,083	100.0	39,385	100.0	47.2	3,391	16,187	157	3,548	52.2
Pole Reserve Capacity			44,107		52.8	3,409			3,252	47.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 277.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-1,801	-58.4	-47,416	-120.4	-56.8	-4,083	658	6	-4,076	-59.9
Unknown, COMMUNICATION	4,926	159.8	87,481	222.1	104.8	7,533	13,642	133	7,665	112.7
Pole	-42	-1.3	-680	-1.7	-0.8	-59	1,887	18	-40	-0.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	3,083	100.0	39,385	100.0	47.2	3,391	16,187	157	3,548	52.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.16	16.46	0.3980	0.62	0.145	125.1	222.9	125.1	1,228	31,034	7	-663	30,378
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.97	16.47	0.3980	0.22	0.145	95.8	114.8	95.8	1,728	-70,522	-9	217	-70,314
Primary	#6 COPPER SOLID	KU, UTILITY	32.97	16.47	0.1620	0.16	0.079	92.5	316.3	92.5	668	22,160	4	228	22,392
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.61	6.61	0.3980	0.62	0.145	125.1	222.9	125.1	1,228	24,900	13	-532	24,382
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.35	6.62	0.3980	0.22	0.145	95.8	114.8	95.8	1,728	-56,367	-17	174	-56,210
Secondary	TRIPLEX 1/0	KU, UTILITY	26.35	6.62	1.0300	1.02	0.399	95.8	114.8	95.9	250	-8,155	-38	296	-7,897

Secondary	TRIPLEX 1/0	KU, UTILITY	26.35	6.62	1.0300	0.98	0.399	92.5	316.3	92.6	250	6,629	34	422	7,084
											Totals:	-50,321	-5	142	-50,184

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.41	6.86	0.6570	1.30	0.190	95.8	114.8	95.8	625	-17,339	1	190	-17,148
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.41	6.86	0.6570	0.95	0.190	71.6	264.3	71.6	625	17,763	1	-119	17,645
CATV	CATV 1.0	Unknown,	21.85	6.90	1.3300	1.25	0.337	95.8	114.8	95.8	925	-25,015	21	293	-24,701
CATV	CATV 1.0	Unknown,	21.85	6.90	1.3300	1.20	0.337	92.5	316.3	92.5	925	20,333	20	418	20,771
CATV	CATV 1.0	Unknown,	21.85	6.90	1.3300	1.71	0.337	125.1	222.9	125.1	925	15,399	27	-890	14,537
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.93	6.95	0.6570	1.15	0.190	92.5	316.3	92.5	750	15,791	19	253	16,063
CATV	CATV 1.0	Unknown,	20.93	6.95	1.3300	1.93	0.337	137.7	83.6	137.7	925	-24,482	-35	-357	-24,874
CATV	CATV 1.0	Unknown,	20.93	6.95	1.3300	1.71	0.337	125.1	222.9	125.1	925	14,753	-32	-852	13,869
Telco	TELE 1.5	Unknown,	19.89	7.01	1.5000	1.39	0.900	92.5	316.3	92.5	2,000	40,018	57	416	40,491
Telco	TELE 1.5	Unknown,	19.89	7.01	1.5000	2.00	0.900	125.1	222.9	125.1	2,000	30,308	59	-885	29,481
Telco	TELE 1.5	Unknown,	19.23	7.05	1.5000	2.26	0.900	137.7	83.6	137.8	2,000	-48,643	-108	-358	-49,109
Telco	TELE 1.5	Unknown,	18.93	7.07	1.5000	1.04	0.900	71.6	264.3	71.6	2,000	48,001	56	-174	47,883
Telco	TELE 2.5	Unknown,	17.95	7.13	2.5000	2.32	3.000	92.5	316.3	92.6	1,750	31,604	156	563	32,323
Telco	TELE 1.5	Unknown,	17.76	7.14	1.5000	2.26	0.900	137.7	83.6	137.8	2,000	-44,923	-25	-331	-45,279
Telco	TELE 1.5	Unknown,	17.76	7.14	1.5000	1.04	0.900	71.6	264.3	71.6	2,000	45,050	-13	-163	44,874
											Totals:	118,619	203	-1,995	116,827

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 10 ft. Arm	KU, UTILITY	25.00	4.20	270.0	270.0	85.00	24.00	20.00	3.00	120.00	1,195	-180	1,015
General	Streetlight - 10 ft. Arm	KU, UTILITY	25.00	4.20	150.0	150.0	85.00	24.00	20.00	3.00	120.00	-725	-180	-905
Totals:												470	-359	111

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.16	0.00	222.9	222.9	3.00	3.80	12.75	5	-18	-13	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.97	0.00	114.8	114.8	3.00	3.80	12.75	-7	-17	-25	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.97	0.00	316.3	316.3	3.00	3.80	12.75	6	-17	-11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.61	0.00	222.9	222.9	2.00	3.00	3.19	1	-3	-2	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.35	0.00	114.8	114.8	2.00	3.00	3.19	-2	-3	-5	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.35	0.00	305.5	305.5	2.00	3.00	3.19	2	-3	-1	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.41	0.00	189.6	99.6	5.00	3.00	0.00	0	0	0	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.85	0.00	215.5	305.5	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.93	0.00	316.3	406.3	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.93	0.00	153.2	63.2	5.00	3.00	0.00	-3	0	-3	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.89	0.00	316.3	406.3	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.89	0.00	222.9	222.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.23	0.00	83.6	83.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.93	0.00	264.3	354.3	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.95	0.00	316.3	406.3	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.76	0.00	174.0	264.0	5.00	3.00	0.00	-1	0	-1	
Totals:											19	-61	-42

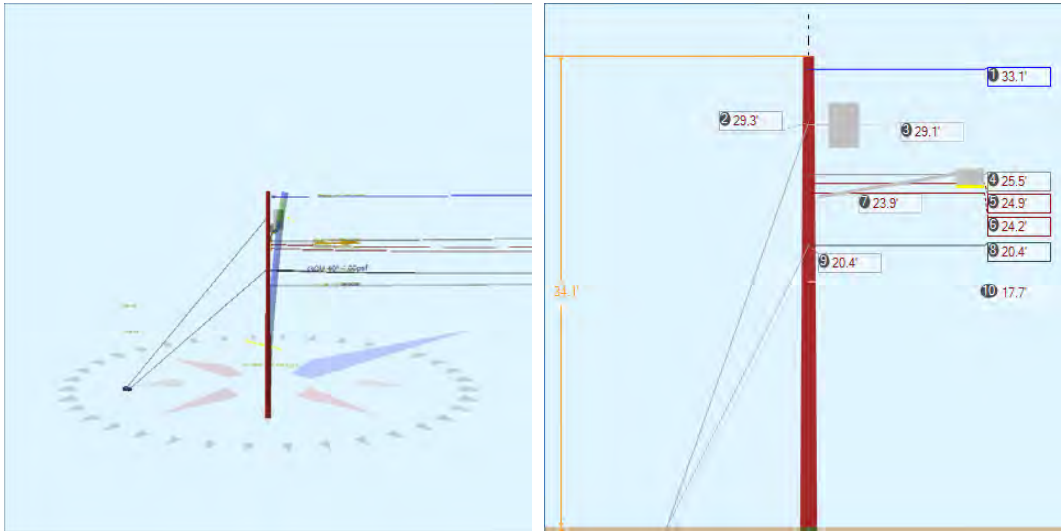
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4 Down	Unknown, COMMUNICATION	22.41	0.00	15.26	0.25	75.00	19.0	55.6	0.121	25.41	3.39

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	10,435	9,486	9,414	7,763	5,325	-1,108	-24,355
Totals:									7,763	5,325	-1,108	-24,355

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	15.26	19.0	20,000	1.00	20,000	9,486	9,414	47.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.54	33.43	10.57	17.58	7.32	11.45	1.60e+6	60.00	57.00	33.92	246,456	2452.53	15.15

Pole Num:	145W - 80939-12645	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Deadend
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.92	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	38.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.010544 Deg	Longitude:	-84.429023 Deg	Elevation:	913.178128873264		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.4	29.3
Groundline	20.8	127.9
Vertical	8.1	39.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,613	40.6
Groundline	13,171	59.0
GL Allowable	102,652	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	24.8	219.3		44.1	40.0	44.1	40.7
? EHS 3/8 (Down)			29.3	63.6	40.0	69.9	40.7
? Single Helix Anchor	24.1	218.9		16.5	40.0	16.5	30.0
? EHS 1/4 (Down)			20.4	55.2	40.0	60.8	30.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 59.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,360	587.0	96,557	733.1	94.1	12,006	228	2	12,008	176.6
Comms	2,128	196.4	21,777	165.3	21.2	2,708	183	2	2,709	39.8
GuyBraces	-7,667	-707.7	-108,500	-823.8	-105.7	-13,491	13,398	113	-13,377	-196.7
PowerEquipments	39	3.6	1,220	9.3	1.2	152	694	6	158	2.3
Pole	190	17.5	1,761	13.4	1.7	219	2,199	19	238	3.5
Streetlights	30	2.8	286	2.2	0.3	36	162	1	37	0.5
Insulators	4	0.3	70	0.5	0.1	9	36	0	9	0.1
Pole Load	1,084	100.0	13,171	100.0	12.8	1,638	16,900	143	1,781	26.2
Pole Reserve Capacity			89,481		87.2	5,162			5,019	73.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 59.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,121	103.5	15,205	115.4	14.8	1,891	11,263	95	1,986	29.2
Unknown, COMMUNICATION	-228	-21.0	-3,795	-28.8	-3.7	-472	3,437	29	-443	-6.5
Pole	190	17.5	1,761	13.4	1.7	219	2,199	19	238	3.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,084	100.0	13,171	100.0	12.8	1,638	16,900	143	1,781	26.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.13	16.79	0.3980	0.42	0.145	173.2	40.6	173.2	2,128	86,962	18	-5	86,975
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.51	7.02	0.3980	0.42	0.145	173.2	40.6	173.2	2,128	66,964	32	-4	66,991
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.86	7.06	0.3980	2.18	0.145	173.2	40.6	173.3	450	13,801	32	-4	13,829
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.17	7.11	0.3980	2.18	0.145	173.2	40.6	173.3	450	13,415	32	-4	13,444
										Totals:	181,142	114	-16	181,240	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.39	7.34	1.3300	2.55	0.337	173.2	40.6	173.3	925	23,262	79	-6	23,335
		COMMUNICATION													
Overlashed Bundle	1/4" EHS	Unknown,	17.75	7.51	0.2500	0.83	0.121	173.2	40.6	173.2	800	17,515	28	-2	17,541
		COMMUNICATION													
Totals:											40,777	107	-9	40,876	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.14	21.29	37.0	37.0	365.00	39.00	--	22.00	--	1,141	1,149	2,290
Totals:											1,141	1,149	2,290	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 10 ft. Arm	KU, UTILITY	23.90	4.62	320.0	320.0	85.00	24.00	20.00	3.00	120.00	-189	725	536
Totals:											-189	725	536	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.13	0.00	40.6	40.6	3.00	3.80	12.75	8	74	81
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	40.6	40.6	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.86	0.00	40.6	40.6	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.17	0.00	40.6	40.6	2.00	3.00	3.19	2	11	13
Bolt	Single Bolt	Unknown, COMMUNICATION	20.39	0.00	40.6	130.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	17.75	0.00	40.6	130.6	5.00	3.00	0.00	6	0	6
Totals:										25	107	132

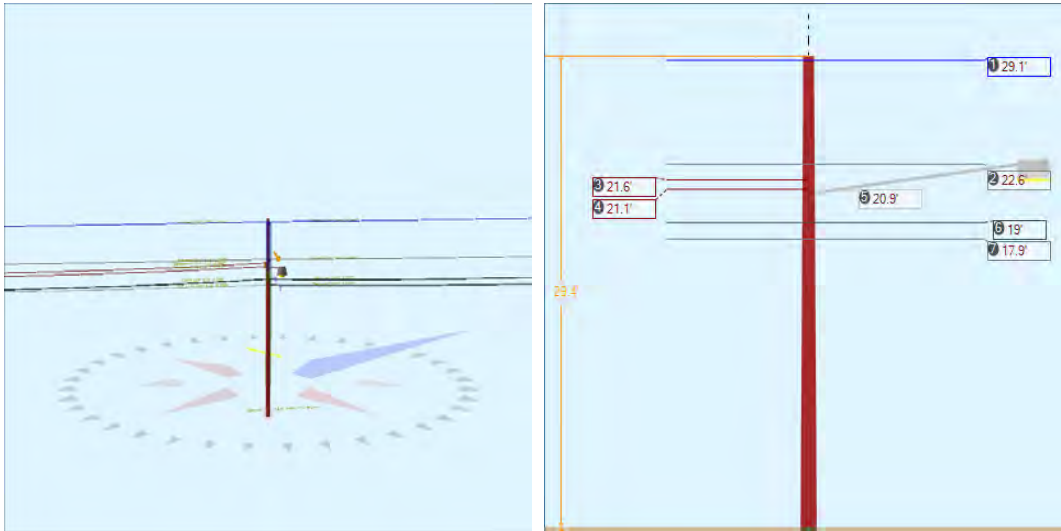
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	29.30	0.00	24.78	0.375	75.00	219.3	49.6	0.273	36.64	2.03
EHS 1/4	Down	Unknown, COMMUNICATION	20.39	0.00	24.14	0.25	75.00	218.9	40.1	0.121	29.79	1.40

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,691	8,810	8,810	6,710	5,710	-5,376	-155,647
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,637	3,306	3,304	2,126	2,529	-2,375	-48,010
Totals:										8,836	8,239	-7,751	-203,657

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	24.78	219.3	20,000	1.00	20,000	8,810	8,810	44.1
Single Helix Anchor		18.00	24.14	218.9	20,000	1.00	20,000	3,306	3,304	16.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.07	34.03	11.14	19.72	7.96	12.27	1.60e+6	60.00	57.00	34.08	207,735	2086.42	12.35

Pole Num:	146W - 81061-12801	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.64	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.63	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.010894 Deg	Longitude:	-84.428611 Deg	Elevation:	916.811322001516		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.3	0.0
Groundline	25.3	0.0
Vertical	8.6	17.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	14,103	120.0
Groundline	14,103	120.0
GL Allowable	56,776	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	10	1.6	900	6.4	1.6	108	300	4	112	1.6
Comms	431	68.7	8,092	57.4	14.3	970	419	5	976	14.3
Pole	142	22.6	2,176	15.4	3.8	261	1,298	16	277	4.1
Streetlights	35	5.6	2,309	16.4	4.1	277	180	2	279	4.1
Insulators	10	1.5	626	4.4	1.1	75	255	3	78	1.2
Pole Load	628	100.0	14,103	100.0	24.8	1,691	2,453	31	1,722	25.3
Pole Reserve Capacity			42,673		75.2	5,109			5,078	74.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	55	8.7	3,825	27.1	6.7	459	716	9	468	6.9
Unknown, COMMUNICATION	431	68.7	8,102	57.5	14.3	972	438	6	977	14.4
Pole	142	22.6	2,176	15.4	3.8	261	1,298	16	277	4.1
Totals:	628	100.0	14,103	100.0	24.8	1,691	2,453	31	1,722	25.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.10	20.08	0.3980	0.55	0.145	173.2	220.6	173.2	2,128	-11,436	94	1,296	-10,046
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.10	20.08	0.3980	0.22	0.145	109.3	39.8	109.3	2,128	10,585	59	820	11,465
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.63	20.45	0.3980	0.55	0.145	173.2	220.6	173.2	2,128	-8,895	96	1,008	-7,791
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.63	20.45	0.3980	0.22	0.145	109.3	39.8	109.3	2,128	8,233	60	638	8,931
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.64	6.29	0.3980	2.27	0.145	173.2	220.6	173.3	450	-1,799	-6	964	-840
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.06	6.32	0.3980	2.27	0.145	173.2	220.6	173.3	450	-1,750	-6	938	-818
Totals:											-5,061	298	5,664	901	

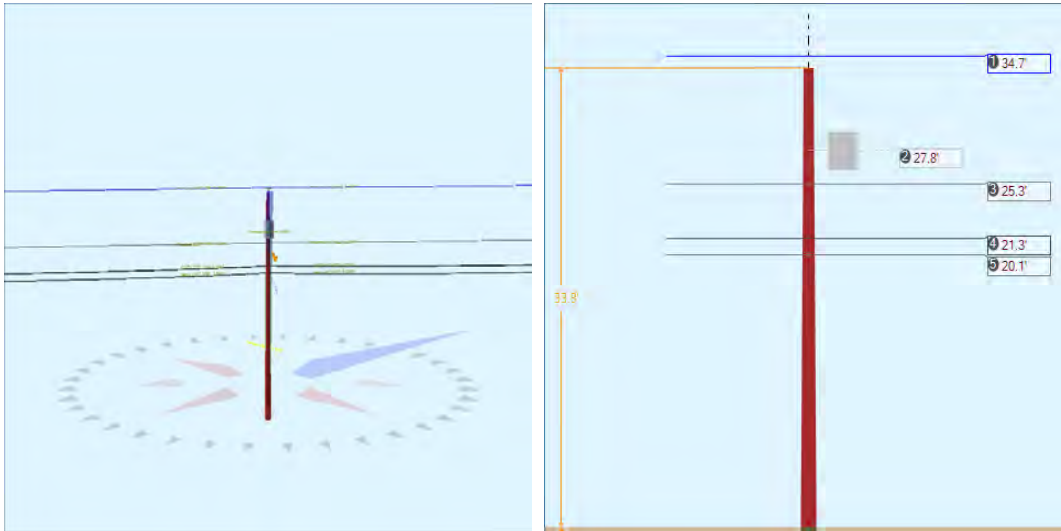
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.99	6.44	1.3300	1.47	0.337	109.3	39.8	109.3	925	3,003	45	1,091	4,139
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.99	6.44	1.3300	2.58	0.337	173.2	220.6	173.3	925	-3,244	72	1,724	-1,448
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.95	6.50	1.5000	1.70	0.900	109.3	39.8	109.3	2,000	6,137	80	1,127	7,343
		COMMUNICATION													
Overlashed Bundle	1/4" EHS	Unknown,	17.95	6.50	0.2500	1.01	0.121	173.2	220.6	173.2	800	-2,652	25	695	-1,932
		COMMUNICATION													
Totals:											3,243	223	4,636	8,102	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 12 ft. Arm	KU, UTILITY	20.87	3.83	125.0	125.0	95.00	24.00	20.00	3.00	144.00	1,577	736	2,312
Totals:											1,577	736	2,312	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Davit	Insulator, 15 kV	KU, UTILITY	28.54	0.00	130.6	220.6	60.00	5.00	18.00	187	124	311
Davit	Insulator, 15 kV	KU, UTILITY	22.07	0.00	130.6	220.6	60.00	5.00	18.00	191	96	287
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.64	0.00	220.6	220.6	2.00	3.00	3.19	0	10	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.06	0.00	220.6	220.6	2.00	3.00	3.19	0	10	9
Bolt	Three Bolt	Unknown, COMMUNICATION	18.99	0.00	129.8	39.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.95	0.00	129.8	39.8	5.00	3.00	0.00	5	0	5
Totals:										388	239	627

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.71	33.04	9.39	10.81	6.69	10.07	1.60e+6	60.00	57.00	29.36	28,395	285.19	11.63

Pole Num:	147W - 81101-12851	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.16	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.94	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.011124 Deg	Longitude:	-84.428381 Deg	Elevation:	923.297172756959		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.3	0.0
Groundline	21.3	0.0
Vertical	8.5	19.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,372	130.2
Groundline	17,372	130.2
GL Allowable	83,283	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 130.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	185	26.5	5,624	32.4	6.8	457	139	1	458	6.7
Comms	287	41.1	6,220	35.8	7.5	505	457	4	510	7.5
PowerEquipments	36	5.2	2,137	12.3	2.6	174	636	6	180	2.6
Pole	185	26.5	3,208	18.5	3.9	261	1,881	18	279	4.1
Insulators	5	0.7	183	1.1	0.2	15	48	0	15	0.2
Pole Load	699	100.0	17,372	100.0	20.9	1,411	3,161	31	1,441	21.2
Pole Reserve Capacity			65,911		79.1	5,389			5,359	78.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 130.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	227	32.4	7,932	45.7	9.5	644	804	8	652	9.6
Unknown, COMMUNICATION	287	41.1	6,231	35.9	7.5	506	476	5	511	7.5
Pole	185	26.5	3,208	18.5	3.9	261	1,881	18	279	4.1
Totals:	699	100.0	17,372	100.0	20.9	1,411	3,161	31	1,441	21.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.71	0.00	0.3980	0.20	0.145	102.3	40.8	102.3	2,128	778	0	930	1,708
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.71	0.00	0.3980	0.22	0.145	109.3	219.8	109.3	2,128	512	0	994	1,506
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.28	6.68	0.3980	0.20	0.145	102.3	40.8	102.3	2,128	567	19	677	1,262
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.28	6.68	0.3980	0.22	0.145	109.3	219.8	109.3	2,128	372	20	724	1,116
										Totals:	2,229	39	3,325	5,592	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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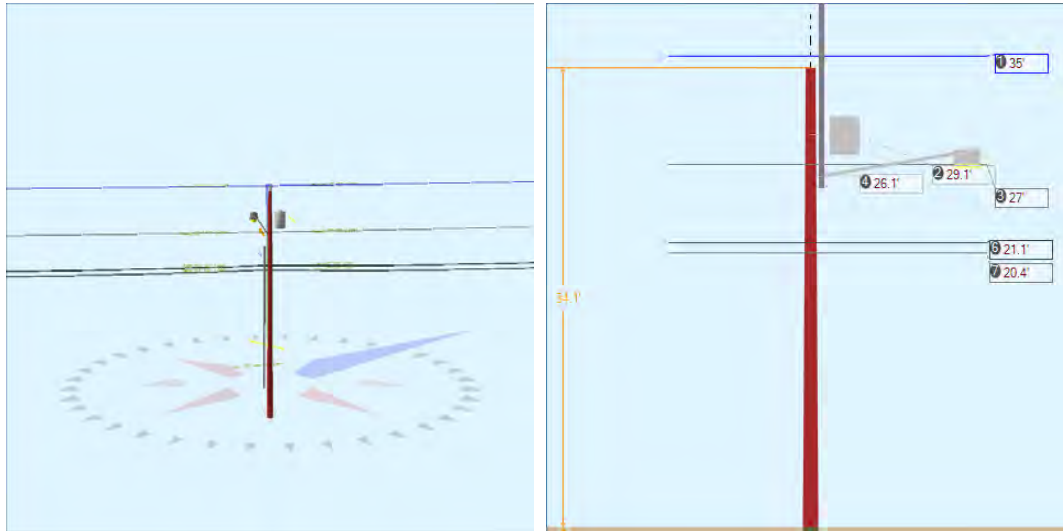
CATV	CATV 1.0	Unknown, COMMUNICATION	21.26	6.93	1.3300	1.36	0.337	102.3	40.8	102.3	925	207	46	1,160	1,414
CATV	CATV 1.0	Unknown, COMMUNICATION	21.26	6.93	1.3300	1.47	0.337	109.3	219.8	109.3	925	136	50	1,240	1,426
Telco	TELE 1.5	Unknown, COMMUNICATION	20.07	7.00	1.5000	1.57	0.900	102.3	40.8	102.3	2,000	423	82	1,197	1,702
Telco	TELE 1.5	Unknown, COMMUNICATION	20.07	7.00	1.5000	1.70	0.900	109.3	219.8	109.3	2,000	278	87	1,279	1,644
Totals:											1,044	265	4,877	6,186	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-15KVA	KU, UTILITY	27.76	21.03	130.0	130.0	335.00	34.00	--	22.00	--	1,116	1,009	2,125
Totals:											1,116	1,009	2,125

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin Pin Insulator - 22 kV	KU, UTILITY	33.84	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157	
Spool Spool Insulator - 25 kV	KU, UTILITY	25.28	0.00	130.8	40.8	2.00	3.00	3.19	2	12	14	
Bolt Three Bolt	Unknown, COMMUNICATION	21.26	0.00	130.3	40.3	5.00	3.00	0.00	5	0	5	
Bolt Three Bolt	Unknown, COMMUNICATION	20.07	0.00	130.3	40.3	5.00	3.00	0.00	6	0	6	
Totals:										13	169	182

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.85	33.17	10.64	13.03	7.32	11.45	1.60e+6	60.00	57.00	33.84	37,198	371.88	11.76

Pole Num:	148W - 81178-12946	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.06	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.011333 Deg	Longitude:	-84.428154 Deg	Elevation:	917.847640004301		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.3	0.0
Groundline	37.3	0.0
Vertical	10.1	20.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,956	310.2
Groundline	30,956	310.2
GL Allowable	84,106	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 310.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	423	34.9	13,239	42.8	15.7	1,064	159	2	1,065	15.7
Comms	473	39.0	10,156	32.8	12.1	816	520	5	821	12.1
PowerEquipments	36	3.0	1,166	3.8	1.4	94	636	6	100	1.5
Pole	187	15.4	3,271	10.6	3.9	263	1,906	18	281	4.1
Streetlights	32	2.6	2,034	6.6	2.4	163	162	2	165	2.4
Risers	55	4.5	905	2.9	1.1	73	47	0	73	1.1
Insulators	5	0.4	186	0.6	0.2	15	48	0	15	0.2
Pole Load	1,211	100.0	30,956	100.0	36.8	2,487	3,478	34	2,521	37.1
Pole Reserve Capacity			53,150		63.2	4,313			4,279	62.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 310.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	551	45.5	17,518	56.6	20.8	1,408	1,032	10	1,418	20.8
Unknown, COMMUNICATION	473	39.0	10,167	32.8	12.1	817	539	5	822	12.1
Pole	187	15.4	3,271	10.6	3.9	263	1,906	18	281	4.1
Totals:	1,211	100.0	30,956	100.0	36.8	2,487	3,478	34	2,521	37.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	0.00	0.3980	0.20	0.145	102.3	220.8	102.3	2,128	792	0	937	1,729
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	0.00	0.3980	0.36	0.145	138.8	36.8	138.8	2,128	4,411	0	1,271	5,682
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.96	6.60	0.3980	0.20	0.145	102.3	220.8	102.3	2,128	609	19	721	1,349
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.96	6.60	0.3980	0.36	0.145	138.8	36.8	138.8	2,128	3,394	25	978	4,397
										Totals:	9,207	44	3,907	13,157	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.15	6.95	1.3300	1.95	0.337	138.8	36.8	138.8	925	1,157	63	1,563	2,784
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.15	6.95	1.3300	1.36	0.337	102.3	220.8	102.3	925	208	47	1,153	1,407
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.40	7.00	1.5000	2.28	0.900	138.8	36.8	138.8	2,000	2,414	111	1,648	4,172
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.40	7.00	1.5000	1.57	0.900	102.3	220.8	102.3	2,000	433	82	1,215	1,730
		COMMUNICATION													
Totals:											4,212	303	5,579	10,093	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	29.11	20.97	35.0	35.0	335.00	34.00	--	22.00	--	101	1,058	1,158
Totals:											101	1,058	1,158	

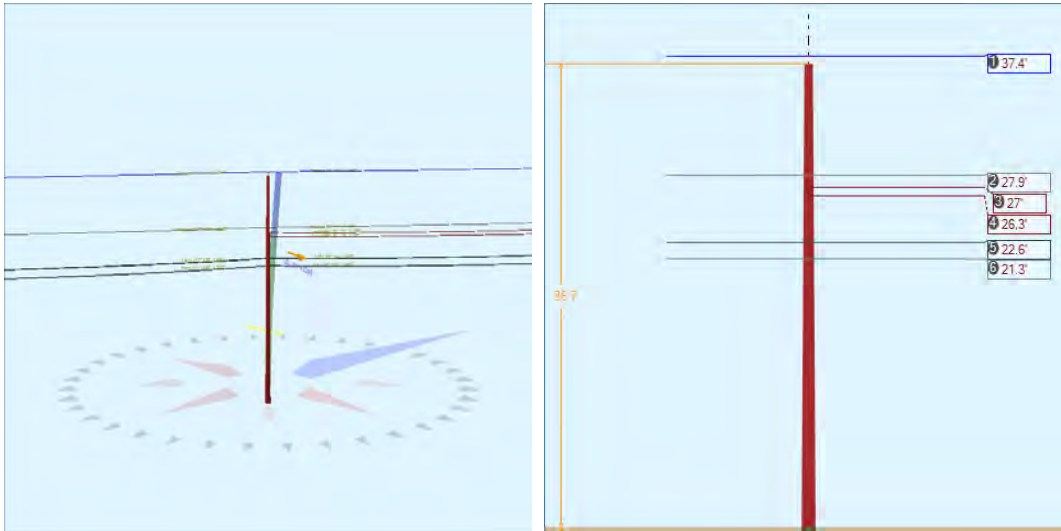
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 10 ft. Arm	KU, UTILITY	26.09	4.15	300.0	300.0	85.00	24.00	20.00	3.00	120.00	1,185	836	2,021
Totals:											1,185	836	2,021	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 200.0°	Riser	KU, UTILITY	24.77	5.85	200.0	200.0	24.77	297.22	4.00	4.00	297.22	-8	907	899
Totals:											-8	907	899	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.15	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.96	0.00	310.8	220.8	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.15	0.00	308.8	218.8	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.40	0.00	308.8	218.8	5.00	3.00	0.00	6	0	6	
Totals:											13	171	184

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.67	33.29	10.64	13.87	7.32	11.48	1.60e+6	60.00	57.00	34.15	34,294	344.33	9.90

Pole Num:	149W - 81262-13055	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	3.26	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.51	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.011625 Deg	Longitude:	-84.427830 Deg	Elevation:	928.301940429078		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.8	0.0
Groundline	43.8	0.0
Vertical	7.6	19.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,023	76.0
Groundline	32,023	76.0
GL Allowable	73,735	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 76.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	880	70.7	24,341	76.0	33.0	2,240	242	3	2,243	33.0
Comms	208	16.7	4,747	14.8	6.4	437	546	6	443	6.5
Pole	155	12.4	2,854	8.9	3.9	263	1,818	19	282	4.1
Insulators	2	0.2	81	0.3	0.1	7	42	0	8	0.1
Pole Load	1,244	100.0	32,023	100.0	43.4	2,947	2,648	28	2,975	43.8
Pole Reserve Capacity			41,711		56.6	3,853			3,825	56.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 76.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	882	70.9	24,415	76.2	33.1	2,247	265	3	2,250	33.1
Unknown, COMMUNICATION	208	16.7	4,753	14.8	6.5	438	565	6	443	6.5
Pole	155	12.4	2,854	8.9	3.9	263	1,818	19	282	4.1
Totals:	1,244	100.0	32,023	100.0	43.4	2,947	2,648	28	2,975	43.8

Detailed Load Components:

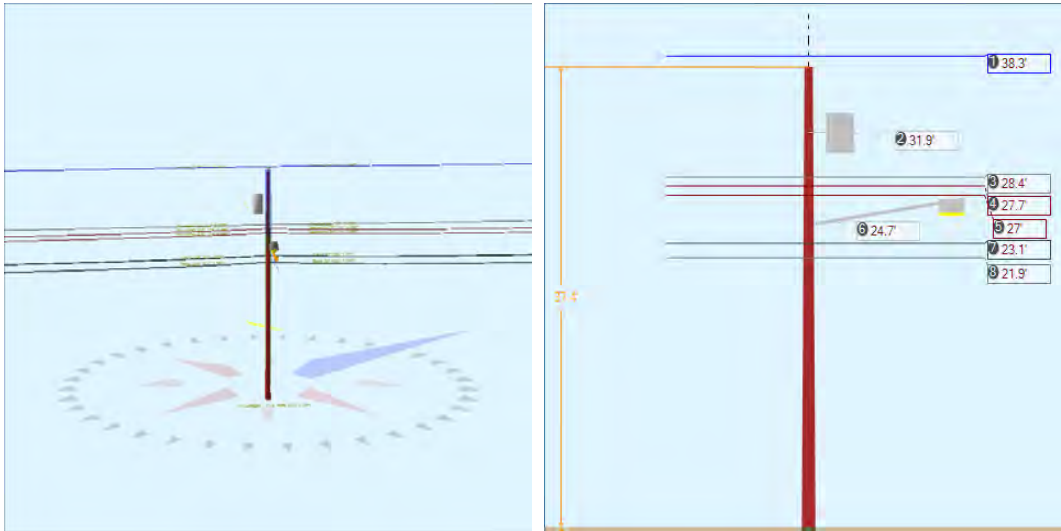
Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	37.37	0.00	0.3980	0.24	0.145	114.2	38.0	114.2	2,128	62,696	0	659	63,355
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	37.37	0.00	0.3980	0.35	0.145	138.8	216.8	138.8	2,128	-61,657	0	827	-60,830
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.92	6.36	0.3980	0.24	0.145	114.2	38.0	114.2	2,128	46,816	12	492	47,321
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.92	6.36	0.3980	0.35	0.145	138.8	216.8	138.8	2,128	-46,040	15	618	-45,408
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.96	6.41	0.3980	0.24	0.145	114.2	38.0	114.2	450	9,561	16	475	10,053
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.29	6.45	0.3980	0.24	0.145	114.2	38.0	114.2	450	9,323	16	463	9,802
Totals:											20,700	59	3,535	24,294

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	22.60	6.67	1.3300	1.54	0.337	114.2	38.0	114.2	925	16,476	31	812	17,319
CATV	CATV 1.0 Unknown, COMMUNICATION	22.60	6.67	1.3300	1.95	0.337	138.8	216.8	138.8	925	-16,203	38	1,019	-15,146
Telco	TELE 1.5 Unknown, COMMUNICATION	21.30	6.75	1.5000	1.79	0.900	114.2	38.0	114.2	2,000	33,568	55	836	34,459
Telco	TELE 1.5 Unknown, COMMUNICATION	21.30	6.75	1.5000	2.28	0.900	138.8	216.8	138.8	2,000	-33,011	67	1,049	-31,895
Totals:											830	191	3,717	4,737

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 5 kV KU, UTILITY	36.74	0.00	0.0	0.0	6.00	3.50	7.50	0	39	39
Spool	Spool Insulator - 25 kV KU, UTILITY	27.92	0.00	128.0	38.0	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV KU, UTILITY	26.96	0.00	38.0	38.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV KU, UTILITY	26.29	0.00	38.0	38.0	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt Unknown, COMMUNICATION	22.60	0.00	127.4	37.4	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt Unknown, COMMUNICATION	21.30	0.00	127.4	37.4	5.00	3.00	0.00	3	0	3
Totals:									11	69	81

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.05	33.04	10.25	11.89	6.69	10.99	1.60e+6	60.00	57.00	36.74	34,769	348.40	13.16

Pole Num:	150W - 81335-13147	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	2.60	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.75	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.011869 Deg	Longitude:	-84.427596 Deg	Elevation:	930.424593687205		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.4	129.3
Groundline	33.4	129.3
Vertical	15.5	129.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,757	129.3
Groundline	24,757	129.3
GL Allowable	75,303	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 131.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	324	35.6	10,139	41.0	13.5	912	329	3	916	13.5
Comms	315	34.5	7,385	29.8	9.8	665	540	6	670	9.9
PowerEquipments	42	4.6	1,364	5.5	1.8	123	694	7	130	1.9
Pole	194	21.2	3,638	14.7	4.8	327	1,868	19	347	5.1
Streetlights	32	3.5	2,001	8.1	2.7	180	162	2	182	2.7
Insulators	6	0.7	230	0.9	0.3	21	55	1	21	0.3
Pole Load	912	100.0	24,757	100.0	32.9	2,228	3,647	38	2,265	33.3
Pole Reserve Capacity			50,546		67.1	4,572			4,535	66.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 131.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	404	44.3	13,723	55.4	18.2	1,235	1,220	13	1,247	18.3
Unknown, COMMUNICATION	315	34.5	7,396	29.9	9.8	666	559	6	671	9.9
Pole	194	21.2	3,638	14.7	4.8	327	1,868	19	347	5.1
Totals:	912	100.0	24,757	100.0	32.9	2,228	3,647	38	2,265	33.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.28	0.00	0.3980	0.34	0.145	135.8	38.7	135.8	2,128	-3,901	0	1,361	-2,540
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.28	0.00	0.3980	0.24	0.145	114.2	218.0	114.2	2,128	4,895	0	1,143	6,038
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.44	6.37	0.3980	0.34	0.145	135.8	38.7	135.8	2,128	-2,896	24	1,010	-1,862
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.44	6.37	0.3980	0.24	0.145	114.2	218.0	114.2	2,128	3,635	20	849	4,503
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.73	6.41	0.3980	0.34	0.145	135.8	38.7	135.8	450	-597	24	985	412
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.73	6.41	0.3980	0.24	0.145	114.2	218.0	114.2	450	750	20	828	1,597
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.97	6.45	0.3980	0.34	0.145	135.8	38.7	135.8	450	-581	24	958	401

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.97	6.45	0.3980	0.24	0.145	114.2	218.0	114.2	450	729	20	805	1,554
Totals:												2,033	132	7,938	10,103

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	23.07	6.68	1.3300	1.90	0.337	135.8	38.7	135.8	925	-1,021	59	1,670	708
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.07	6.68	1.3300	1.54	0.337	114.2	218.0	114.2	925	1,282	50	1,403	2,735
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.90	6.75	1.5000	2.22	0.900	135.8	38.7	135.8	2,000	-2,097	105	1,733	-259
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.90	6.75	1.5000	1.79	0.900	114.2	218.0	114.2	2,000	2,631	88	1,456	4,175
		COMMUNICATION													
Totals:												795	302	6,262	7,359

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	31.89	20.67	220.0	220.0	365.00	39.00	--	22.00	--	30	1,329	1,359
Totals:												30	1,329	1,359

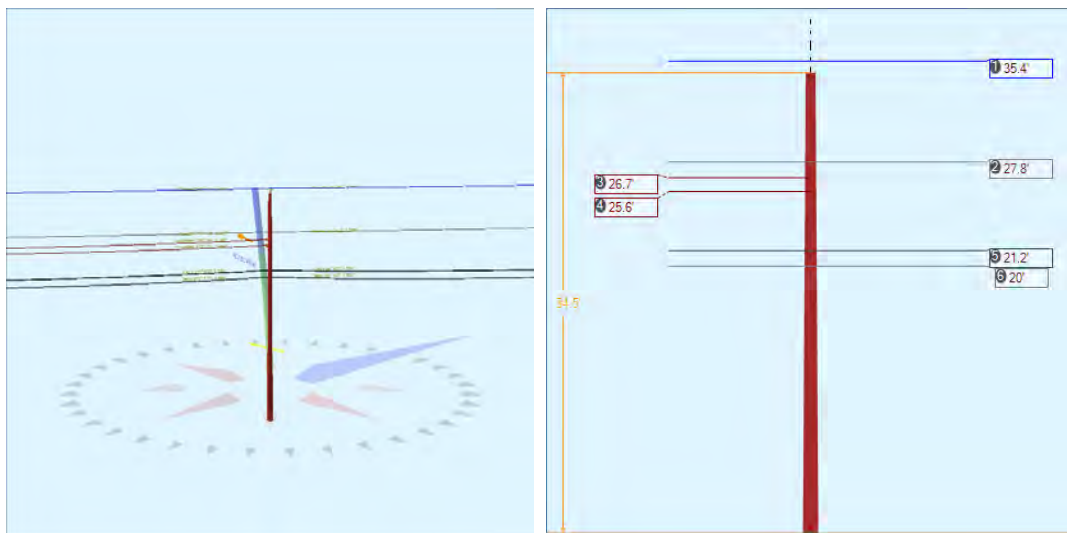
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 10 ft. Arm	KU, UTILITY	24.67	4.09	130.0	130.0	85.00	24.00	20.00	3.00	120.00	1,203	791	1,994
Totals:												1,203	791	1,994

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	37.41	0.00	0.0	0.0	13.00	9.00	10.50	0	174	174
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.44	0.00	128.7	38.7	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.73	0.00	128.3	38.3	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.97	0.00	128.3	38.3	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	23.07	0.00	128.3	38.3	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	21.90	0.00	128.3	38.3	5.00	3.00	0.00	5	0	5
Totals:										17	212	229

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.80	33.62	10.16	14.85	6.69	11.07	1.60e+6	60.00	57.00	37.41	23,482	235.30	6.45

Pole Num:	151W - 81399-13229	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.45	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.21	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012149 Deg	Longitude:	-84.427301 Deg	Elevation:	931.15572572459		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	36.7	0.0
Groundline	36.7	0.0
Vertical	6.3	18.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,951	255.9
Groundline	30,951	255.9
GL Allowable	85,185	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 255.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	874	70.6	23,607	76.3	27.7	1,880	279	3	1,882	27.7
Comms	207	16.8	4,493	14.5	5.3	358	622	6	364	5.3
Pole	152	12.3	2,681	8.7	3.2	213	1,939	19	232	3.4
Insulators	5	0.4	170	0.6	0.2	14	55	1	14	0.2
Pole Load	1,238	100.0	30,951	100.0	36.3	2,464	2,896	28	2,492	36.6
Pole Reserve Capacity			54,234		63.7	4,336			4,308	63.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 255.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	879	71.0	23,770	76.8	27.9	1,893	315	3	1,896	27.9
Unknown, COMMUNICATION	207	16.8	4,500	14.5	5.3	358	641	6	364	5.4
Pole	152	12.3	2,681	8.7	3.2	213	1,939	19	232	3.4
Totals:	1,238	100.0	30,951	100.0	36.3	2,464	2,896	28	2,492	36.6

Detailed Load Components:

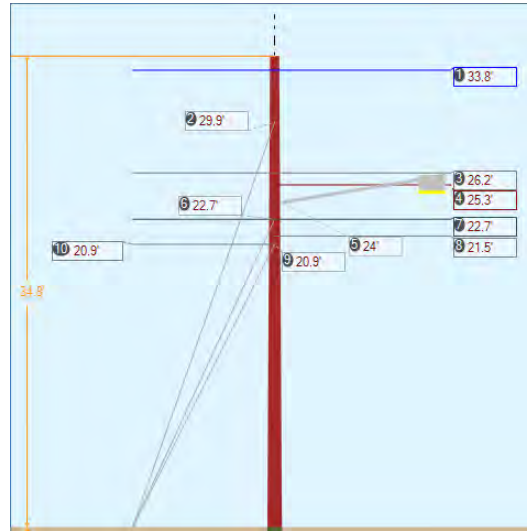
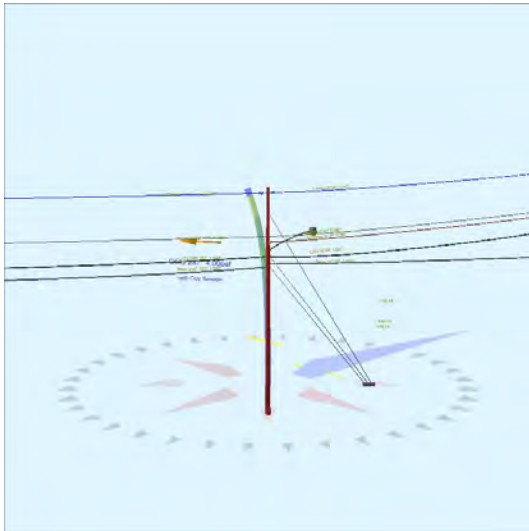
Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.42	0.00	0.3980	0.42	0.145	152.5	38.1	152.5	2,128	-59,592	0	836	-58,756
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.42	0.00	0.3980	0.33	0.145	135.8	218.7	135.8	2,128	60,073	0	732	60,806
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.83	6.57	0.3980	0.42	0.145	152.5	38.1	152.5	2,128	-46,795	17	657	-46,122
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.83	6.57	0.3980	0.33	0.145	135.8	218.7	135.8	2,128	47,173	15	575	47,763
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.65	6.64	0.3980	0.33	0.145	135.8	218.7	135.8	450	9,554	20	551	10,124
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.62	6.70	0.3980	0.33	0.145	135.8	218.7	135.8	450	9,182	20	529	9,731
										Totals:	19,594	71	3,881	23,546

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.16	6.98	1.3300	2.19	0.337	152.5	38.1	152.5	925	-15,466	42	1,018	-14,406
CATV	CATV 1.0 Unknown, COMMUNICATION	21.16	6.98	1.3300	1.90	0.337	135.8	218.7	135.8	925	15,591	38	891	16,520
Telco	TELE 1.5 Unknown, COMMUNICATION	20.00	7.05	1.5000	2.58	0.900	152.5	38.1	152.5	2,000	-31,606	75	1,051	-30,481
Telco	TELE 1.5 Unknown, COMMUNICATION	20.00	7.05	1.5000	2.22	0.900	135.8	218.7	135.8	2,000	31,861	67	921	32,849
										Totals:	380	222	3,880	4,482

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV KU, UTILITY	34.55	0.00	0.0	0.0	13.00	9.00	10.50	0	129	129
Spool	Spool Insulator - 25 kV KU, UTILITY	27.83	0.00	308.4	218.4	2.00	3.00	3.19	1	10	12
Spool	Spool Insulator - 25 kV KU, UTILITY	26.65	0.00	218.7	218.7	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV KU, UTILITY	25.62	0.00	218.7	218.7	2.00	3.00	3.19	2	10	11
Bolt	Three Bolt Unknown, COMMUNICATION	21.16	0.00	308.4	218.4	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt Unknown, COMMUNICATION	20.00	0.00	308.4	218.4	5.00	3.00	0.00	3	0	3
Totals:									11	159	170

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.41	32.92	10.79	12.20	7.32	11.53	1.60e+6	60.00	57.00	34.55	45,708	459.68	15.87

Pole Num:	152W - 81499-13354	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.20	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.80	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012468 Deg	Longitude:	-84.426980 Deg	Elevation:	939.235380400643		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	50.9	30.0
Groundline	27.4	0.0
Vertical	14.5	224.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,833	220.5
Groundline	869	194.7
GL Allowable	69,256	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.2	44.0		38.3	237.0	38.3	246.9
? EHS 3/8 (Down)			29.9	55.3	237.0	60.9	246.9
? Single Helix Anchor	17.7	44.0		9.3	237.0	9.3	246.9
? EHS 1/4 (Down)			22.8	31.2	237.0	34.3	246.9
? Single Helix Anchor	17.1	44.0		7.7	237.0	7.7	246.9
? EHS 1/4 (Down)			20.9	25.8	237.0	28.4	246.9
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 194.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,482	2312.1	10,232	1177.5	14.8	13,271	169	2	13,272	195.2
Comms	823	424.3	1,319	151.8	1.9	1,711	508	6	1,717	25.2
GuyBraces	-5,270	-2718.6	-10,824	-1245.6	-15.6	-14,038	13,919	153	-13,885	-204.2
Pole	131	67.5	175	20.1	0.3	227	1,676	18	245	3.6
Streetlights	24	12.2	-45	-5.2	-0.1	-58	162	2	-57	-0.8
Insulators	5	2.5	12	1.4	0.0	15	57	1	16	0.2
Pole Load	194	100.0	869	100.0	1.3	1,127	16,490	181	1,308	19.2
Pole Reserve Capacity			68,387		98.7	5,673			5,492	80.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 194.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,073	553.3	2,413	277.7	3.5	3,129	10,224	112	3,242	47.7
Unknown, COMMUNICATION	-1,010	-520.8	-1,719	-197.8	-2.5	-2,229	4,590	51	-2,179	-32.0
Pole	131	67.5	175	20.1	0.3	227	1,676	18	245	3.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	194	100.0	869	100.0	1.3	1,127	16,490	181	1,308	19.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.75	20.53	0.3980	0.33	0.145	152.5	218.1	152.5	2,128	85,677	13	-174	85,517
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.78	16.15	0.3980	0.07	0.145	69.6	14.9	69.6	150	-6,587	-6	-2	-6,595
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.17	6.35	0.3980	0.07	0.145	69.6	14.9	69.6	150	-5,103	-2	-1	-5,106
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.17	6.35	0.3980	0.33	0.145	152.5	218.1	152.5	2,128	66,431	-5	-135	66,290
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.30	6.40	0.3980	0.07	0.145	69.6	14.9	69.6	150	-4,934	-12	-1	-4,947
Totals:											135,484	-14	-312	135,158	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.75	6.55	1.3300	0.88	0.337	69.6	14.9	69.6	150	-4,436	-30	-2	-4,468
CATV	CATV 1.0	Unknown, COMMUNICATION	22.75	6.55	1.3300	2.16	0.337	152.5	218.1	152.5	925	25,103	60	-239	24,924
Telco	TELE 1.5	Unknown, COMMUNICATION	21.52	6.62	1.5000	1.35	0.900	90.5	34.7	90.5	2,000	-52,571	-64	-148	-52,783
Telco	TELE 1.5	Unknown, COMMUNICATION	20.91	6.66	1.5000	2.56	0.900	152.5	218.1	152.5	2,000	49,885	106	-240	49,752
Totals:											17,981	72	-628	17,425	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 10 ft. Arm	KU, UTILITY	24.00	3.97	360.0	360.0	85.00	24.00	20.00	3.00	120.00	-1,163	569	-594
Totals:											-1,163	569	-594	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 17.13"	KU, UTILITY	33.75	0.00	218.1	218.1	3.00	3.90	17.13	9	81	90
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.78	0.00	14.9	14.9	3.00	3.80	12.75	-8	59	51
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.17	0.00	296.5	206.5	2.00	3.00	3.19	0	9	9

Spool	Spool Insulator - 25 kV	KU, UTILITY	25.30	0.00	14.9	14.9	2.00	3.00	3.19	-2	9	7
Bolt	Single Bolt	Unknown, COMMUNICATION	22.75	0.00	14.9	104.9	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.75	0.00	218.1	218.1	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	21.52	0.00	34.7	124.7	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.91	0.00	218.1	218.1	5.00	3.00	0.00	5	0	5
Totals:										-2	158	156

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.92	0.00	18.23	0.375	75.00	44.0	58.4	0.273	33.38	1.61
EHS 1/4	Down	Unknown, COMMUNICATION	22.75	0.00	17.71	0.25	75.00	44.0	51.9	0.121	27.12	0.72
EHS 1/4	Down	Unknown, COMMUNICATION	20.91	0.00	17.07	0.25	75.00	44.0	50.6	0.121	25.27	0.55

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,434	7,668	7,666	6,532	4,012	-3,498	-102,848
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,055	1,869	1,867	1,470	1,152	-1,004	-22,519
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,699	1,544	1,543	1,193	980	-854	-17,608
Totals:										9,195	6,143	-5,357	-142,975

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	18.23	44.0	20,000	1.00	20,000	7,668	7,666	38.3
Single Helix Anchor			18.00	17.71	44.0	20,000	1.00	20,000	1,869	1,867	9.3
Single Helix Anchor			18.00	17.07	44.0	20,000	1.00	20,000	1,544	1,543	7.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.60	34.34	9.69	19.65	6.69	10.76	1.60e+6	60.00	57.00	34.80	113,973	1137.25	6.90

36' 8" - 6W - 1865496

28' 4" - Lowest Power

4' - Base offset

Base

35' 1" - 7W - 501-10

25' 4" - Lowest Power

4' - Base offset

Base

35' 4" - 8W - 00501-11

26' 1" - Lowest Power

20' 1" - Highest Tel Cable

4' - Base offset

Base

34' 11" - 9W - 501-12

25' 10" - Lowest Power

23' 7" - Highest Tel Drop

20' 6" - Highest Tel Cable

4' - Base offset

Base

35' - 10W - 501-12-40

25' 11" - Lowest Power

21' 2" - Highest Tel Drop

19' 4" - Highest Tel Cable

4' - Base offset

Base

36' 9" - 11W - 501-13

27' 6" - Lowest Power

21' 5" - Highest Tel Cable

4' - Base offset

Base

35' 3" - 12W - 501-14

26' 9" - Lowest Power

21' 8" - Highest Tel Drop

19' 4" - Highest Tel Cable

4' - Base offset

Base

39' 2" - 13W - NT

27' 9" - Lowest Power

4' - Base offset

Base

40' 1" - 14W - 501-15

29' 1" - Lowest Power

21' 11" - Highest Tel Cable

4' - Base offset

Base

37' 10" - 42W - 00501-34

29' 10" - Lowest Power

22' 5" - Highest Tel Cable

4' - Base offset

Base

38' 2" - 43W - 00501-35

31' 3" - Lowest Power

22' 7" - Highest Tel Cable

4' - Base offset

Base

38' 10" - 44W - 00501-36

31' 3" - Lowest Power

23' 6" - Highest Tel Cable

4' - Base offset

Base

WIN4542

47' 6" - 45W - 501-37

38' 1" - Lowest Power

23' 7" - Highest Tel Cable

3' - Base offset

Base

42' 5" - 46W

33' 4" - Lowest Power

22' 4" - Highest Tel Cable

4' - Base offset

Base

38' 6" - 47W - 501-40

29' 8" - Lowest Power

23' 6" - Highest Tel Cable

4' - Base offset

Base

23' 5" - 129W - 24546-32

19' 1" - Highest Tel Cable

4' - Base offset

Base

33' 11" - 140W - 501-61

26' 4" - Lowest Power

19' 11" - Highest Tel Cable

4' - Base offset

Base

34' 1" - 145W - 80939-12645

24' 2" - Lowest Power

17' 9" - Highest Tel Cable

4' - Base offset

Base

29' 4" - 146W - 81061-12801

21' 1" - Lowest Power

17' 11" - Highest Tel Cable

4' - Base offset

Base

33' 10" - 147W - 81101-12851

25' 3" - Lowest Power

20' 1" - Highest Tel Cable

4' - Base offset

Base

34' 2" - 148W - 81178-12946

26' 9" - Lowest Power

21' 10" - Highest Tel Drop

20' 5" - Highest Tel Cable

4' - Base offset

Base

36' 9" - 149W - 81262-13055

26' 3" - Lowest Power

21' 10" - Highest Tel Drop

21' 4" - Highest Tel Cable

4' - Base offset

Base

WIN4552

37' 5" - 150W - 81335-13147

27' - Lowest Power

22' - Highest Tel Drop

21' 11" - Highest Tel Cable

4' - Base offset

Base



34' 7" - 151W - 81399-13229

25' 7" - Lowest Power

4' - Base offset

Base

34' 10" - 152W - 81499-13354

25' 4" - Lowest Power

21' 6" - Highest Tel Cable

Cadentown

STOP

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, March 13, 2018 5:08 PM
To: Hays, Sarah K
Subject: FW: LX135-01W
Attachments: LX135-01W - METRONET POLE INVENTORY REPORT.XLSX

Yes, thank you very much!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Tuesday, March 13, 2018 4:06 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01W

Lauren,

Here is the paraphrased answer from our engineer for the area.

"I'd be fine with the pole inventory report if it were filled out. However, if you open this one, column H for "Make Ready 1 = non, 2 = comms, 3 = elec, etc..." isn't populated and only some of the poles have column I populated for "Make Ready Remedies". (see snip below where I captured info on 2 of the poles). I'm fine with "attach to new pole" in column I on the 2nd pole on this example, but "unk" for make ready on both of them doesn't tell me what I need to know."

Let me know if this makes sense to you all.

	A	B	C	D	E	F	G	H	I
1	LX135-01W Pole Inventory Report			Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole Owner	Make Ready: 1=None 4=Comms&Elec 5=Simple PC
82									
83		22W	27220-125-01	40/ 3		WS	UNK		
84		22W	27220-125-01			WS			
85		22W	27220-125-01			WS			
86		22W	27220-125-01			WS			
87		22W	27220-125-01			WS			
88		22W	27220-125-01			WS			
89		22W	27220-125-01			WS			
90		22W	27220-125-01			WS			
91									
92		23W	27220-125	40/ 3		WS	UNK		Attach to new po
93		23W	27220-125			WS			Attach to new po
94		23W	27220-125			WS			Attach to new po
95		23W	27220-125			WS			Attach to new po
96		23W	27220-125			WS			Attach to new po
97		23W	27220-125			WS			Attach to new po
98		23W	27220-125			WS			Attach to new po
99		23W	27220-125			WS			Attach to new po
100		23W	27220-125			WS			Attach to new po
101		23W	27220-125			WS			Attach to new po
102		23W	27220-125			WS			Attach to new po

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Monday, March 05, 2018 1:00 PM

To: Windstream Jointuse <Windstream.Jointuse@windstream.com>

Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: LX135-01W

Please see attached for proposal titled LX135-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



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LX135-01W Pole Inventory Report

POLE COUNT		16W	NT	45/ 3	WS	UNK
KU	0	16W	NT		WS	
Windstream	25	16W	NT		WS	
Total Pole Count	25	16W	NT		WS	
Total Needing Make Ready	UNK	16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		17W	27310-125	40/ 3	WS	UNK
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
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		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		18W	27310-125-02	45/ 3	WS	UNK
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
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18W	27310-125-02		WS	
18W	27310-125-02		WS	
19W	27310-126-01	45/ 1	WS	UNK
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
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19W	27310-126-01		WS	
20W	27310-126	45/ 3	WS	UNK
20W	27310-126		WS	
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20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
21W	27310-126-02	40/ 3	WS	UNK
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
22W	27220-125-01	40/ 3	WS	UNK
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	
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23W	27220-125	40/ 3	WS	UNK
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23W	27220-125		WS	
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24W	27220-127-02	40/ 2	WS	UNK
24W	27220-127-02		WS	
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25W	27220-126-01	40/ 2	WS	UNK
25W	27220-126-01		WS	
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26W	27220	40/ 3	WS	UNK
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27W	27220-125-02	40/ 3	WS	UNK
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27W	27220-125-02		WS	
28W	27290-126-01	40/ 3	WS	UNK
28W	27290-126-01		WS	
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28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
33W	27290-126	45/ 3	WS	UNK
33W	27290-126		WS	
33W	27290-126		WS	
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33W	27290-126		WS	
33W	27290-126		WS	
34W	NT	35/ 5	WS	UNK
34W	NT		WS	
34W	NT		WS	
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34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
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35W	NT	40/ 3	WS	UNK
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35W	NT			WS	
36W	NT		45/ 3	WS	UNK
36W	NT			WS	
36W	NT			WS	
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36W	NT			WS	
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36W	NT			WS	
37W	NT		45/ 3	WS	UNK
37W	NT			WS	
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37W	NT			WS	
37W	NT			WS	
37W	NT			WS	
37W	NT			WS	
37W	NT			WS	
38W	L27290-P166-W	45/ 3		WS	UNK
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
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38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	
38W	L27290-P166-W			WS	

38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
57W	27220-228	45/ 3	WS	UNK
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
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57W	27220-228		WS	
58W	NT	40/ 3	WS	UNK
58W	NT		WS	
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58W	NT		WS	
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58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
59W	NT	45/ 3	WS	UNK
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
60W	NT	40/ 3	WS	UNK
60W	NT		WS	

60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
61W	27220-260		40/ 2	WS	UNK
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
62W	NT		40/ 3	WS	UNK
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
END					

Owner	1=None 2=Comms 3=Elec	4=Comms&Elec 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
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39.90	126 ST MARGARET DR	38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	Metronet				
		38.02139	-84.46603	Charter				
		38.02139	-84.46603	Windstream				
24.60	2047 COBURN BLVD, :	38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	Metronet				
		38.02117	-84.46575	Metronet				
		38.02117	-84.46575	Charter				
		38.02117	-84.46575	Charter				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
41.90	125 ST WILLIAM DR	38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	Metronet				

		38.02091	-84.46549	Charter
		38.02091	-84.46549	Windstream
		38.02091	-84.46549	Windstream
		38.02091	-84.46549	Windstream
41.60	126 ST WILLIAM DR	38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	Metronet
		38.02064	-84.46514	Charter
		38.02064	-84.46514	Windstream
		38.02064	-84.46514	Windstream
		38.02064	-84.46514	Windstream
58.30	2115 COBURN BLVD	38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	Metronet
		38.02041	-84.46491	Metronet
		38.02041	-84.46491	Charter
		38.02041	-84.46491	Charter
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
41.80	125 ST JAMES DR	38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	Metronet
		38.02012	-84.46461	Charter
		38.02012	-84.46461	Windstream
		38.02012	-84.46461	Windstream
33.40	126 ST JAMES DR	38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	Metronet
		38.01986	-84.46426	Charter

			38.01986	-84.46426	Windstream
			38.01986	-84.46426	Windstream
Attach to new pole	41.80	2137 COBURN BLVD, 4	38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Charter
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole	24.70	125 ST ANN DR	38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	Metronet
Attach to new pole			38.01941	-84.46376	Charter
Attach to new pole			38.01941	-84.46376	Windstream
Attach to new pole			38.01941	-84.46376	Windstream
	25.80	126 ST ANN DR	38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	Metronet
			38.01912	-84.46343	Charter
			38.01912	-84.46343	Windstream
			38.01912	-84.46343	Windstream
Attach to new pole	27.20	2205 COBURN BLVD, 4	38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	Metronet
Attach to new pole			38.01890	-84.46321	Charter
Attach to new pole			38.01890	-84.46321	Windstream
Attach to new pole			38.01890	-84.46321	Windstream
	26.30	125 ST PHILLIP DR	38.01867	-84.46295	KU
			38.01867	-84.46295	KU

		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	Metronet
		38.01867	-84.46295	Charter
		38.01867	-84.46295	Windstream
		38.01867	-84.46295	Windstream
Trees blocking midspan	23.70 126 ST PHILLIP DR	38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	Metronet
		38.01841	-84.46261	Charter
		38.01841	-84.46261	Windstream
		38.01841	-84.46261	Windstream
Attach to new pole	43.00 122 ST PHILLIP DR	38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	Metronet
Attach to new pole		38.01820	-84.46238	Charter
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
	35.90 134 ST PHILLIP DR	38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	Metronet
		38.01842	-84.46205	Charter
		38.01842	-84.46205	Windstream
		38.01842	-84.46205	Windstream
		38.01842	-84.46205	Windstream
	29.10 142 ST PHILLIP DR	38.01867	-84.46175	KU
		38.01867	-84.46175	KU
		38.01867	-84.46175	KU
		38.01867	-84.46175	KU

	38.01867	-84.46175	KU
	38.01867	-84.46175	KU
	38.01867	-84.46175	Metronet
	38.01867	-84.46175	Charter
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
23.60 150 ST PHILLIP DR	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	Metronet
	38.01885	-84.46142	Charter
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
32.20 158 ST PHILLIP DR	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	Metronet
	38.01905	-84.46110	Charter
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
45.10 166 ST PHILLIP DR	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Windstream

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm to Ground	3rd Party Comm to Power	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Pe
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Primary	34'8"			N	Y	D: Pedestrian Only 9.5'				
Transformer	27'0"			N	Y					
Neutral	25'11"			N	Y					
Secondary	25'2"			N	Y					
Secondary	24'6"			N	Y					
Streetlight	23'5"			N	Y					
Communication				N	Y					
Communication	20'6"		23	N	Y					
Communication	19'3"	16'5"		N	Y					
Primary	32'9"			Y	N	D: Pedestrian Only 9.5'				
Primary	30'5"			Y	N					
Transformer	25'6"			Y	N					
Neutral	23'11"			Y	N					
Secondary	23'1"			Y	N					
Secondary	22'4"			Y	N					
Streetlight	21'4"			Y	N					
Streetlight Drip Loop	20'11"			Y	N					
Communication				Y	N					
Communication				Y	N					
Communication	19'2"			Y	N					
Communication	18'11"		44	Y	N					
Communication	18'5"			Y	N					
Communication	18'2"			Y	N					
Communication	17'9"			Y	N					
Communication	17'5"			Y	N					
Communication	16'10"			Y	N					
Communication	16'4"	15'5"		Y	N					
Primary	39'8"			N	N	D: Pedestrian Only 9.5'				
Transformer	31'5"			N	N					
Neutral	30'3"			N	N					
Secondary	29'1"			N	N					
Secondary	28'4"			N	N					
Streetlight	26'3"			N	N					
Streetlight Drip Loop	25'7"			N	N					
Communication				N	N					

Communication	20'6"	113	N	N	
Communication	19'4"		N	N	
Communication	18'3"		N	N	
Communication	17'3"	16'6"	N	N	
Primary	38'6"		N	N	D: Pedestrian Only 9.5'
Neutral	30'10"		N	N	
Secondary	29'11"		N	N	
Secondary	28'11"		N	N	
Streetlight	27'6"		N	N	
Communication			N	N	
Communication	21'3"	72	N	N	
Communication	20'2"		N	N	
Communication	19'0"		N	N	
Communication	18'0"	15'2"	N	N	
Primary	38'0"		N	Y	D: Pedestrian Only 9.5'
Primary	33'6"		N	Y	
Transformer	27'4"		N	Y	
Neutral	26'9"		N	Y	
Secondary	25'6"		N	Y	
Secondary	24'3"		N	Y	
Communication			N	Y	
Communication			N	Y	
Communication	18'10"	22	N	Y	
Communication	17'10"		N	Y	
Communication	16'10"		N	Y	
Communication	16'2"		N	Y	
Communication	15'9"		N	Y	
Communication	15'1"		N	Y	
Communication	14'7"		N	Y	
Communication	14'1"	16'2"	N	Y	
Communication	13'7"		N	Y	
Primary	33'7'		N	N	B:Residential/Over Driveways
Neutral	26'2"		N	N	
Secondary Riser	25'6"		N	N	
Secondary	25'1'		N	N	
Secondary	24'3"		N	N	
Communication			N	N	
Communication	19'11"	71	N	N	
Communication	19'0"		N	N	
Communication	18'0"	19'7"	N	N	
Primary	33'7"		N	N	D: Pedestrian Only 9.5'
Neutral	26'1"		N	N	
Secondary	25'1"		N	N	
Secondary	24'2"		N	N	
Communication			N	N	
Communication	19'10"	49	N	N	

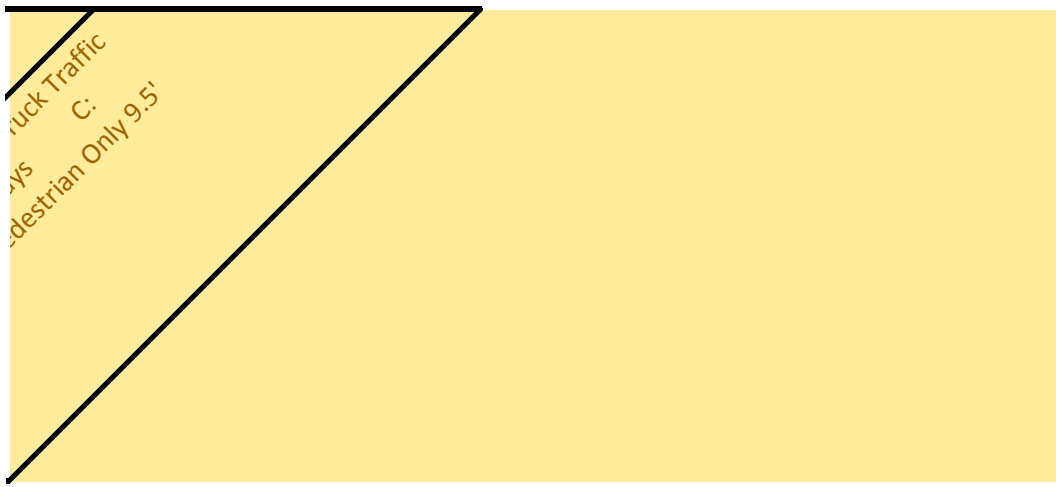
Communication	18'10"		N	N	
Communication	17'10"	13'6"	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Transformer			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Streetlight			N	N	
Communication			N	N	
Communication			N	N	
Communication		71	N	N	
Communication			N	N	
Communication		15'1"	N	N	
Primary			N	N	B:Residential/Over Driveways
Primary			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Communication			N	N	
Communication		74	N	N	
Communication			N	N	
Communication		17'6"	N	N	
Primary	33'11"		N	N	D: Pedestrian Only 9.5'
Neutral	26'3"		N	N	
Secondary	25'6"		N	N	
Secondary	24'9"		N	N	
Communication			N	N	
Communication	21'4"	35	N	N	
Communication	19'2"		N	N	
Communication	18'3"	16'5"	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Transformer			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Streetlight			N	N	
Communication			N	N	
Communication		41	N	N	
Communication			N	N	
Communication		16'0"	N	N	
Primary	32'10"		Y	N	D: Pedestrian Only 9.5'
Neutral	25'9"		Y	N	

Secondary	25'0"		Y	N	
Secondary Riser	24'8"		Y	N	
Secondary	24'4"		Y	N	
Secondary Drip Loop	23'10"		Y	N	
Communication			Y	N	
Communication	20'9"	42	Y	N	
Communication	19'9"		Y	N	
Communication	18'10"	17'5"	Y	N	
Primary	33'10"		N	N	D: Pedestrian Only 9.5'
Neutral	25'9"		N	N	
Secondary Riser	25'2"		N	N	
Secondary	24'5"		N	N	
Secondary	23'9"		N	N	
Communication			N	N	
Communication	20'3"	UNK	N	N	
Communication	19'2"		N	N	
Communication	18'1"	UNK	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Primary			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Transformer			N	N	
Communication			N	N	
Communication		40	N	N	
Communication			N	N	
Communication			N	N	
Communication			N	N	
Communication		12'10"	N	N	
Primary	29'0"		Y	N	D: Pedestrian Only 9.5'
Neutral	22'11"		Y	N	
Secondary	22'1"		Y	N	
Secondary	21'4"		Y	N	
Secondary Riser	20'9"		Y	N	
Communication			Y	N	
Communication	18'3"	40	Y	N	
Communication	17'6"		Y	N	
Communication	16'9"		Y	N	
Communication	15'5"	12'2"	Y	N	
Primary	33'5"		Y	N	D: Pedestrian Only 9.5'
Transformer	26'7"		Y	N	
Neutral	26'2"		Y	N	
Secondary	25'5"		Y	N	

Secondary	24'9"			Y	N
Secondary Riser	20'7"			Y	N
Communication				Y	N
Communication	18'8"	76		Y	N
Communication	17'11"			Y	N
Communication	17'4"			Y	N
Communication	16'2"			Y	N
Communication	14'9"	12'7"		Y	N
Primary	36'1"			N	N D: Pedestrian Only 9.5'
Primary	35'8"			N	N
Neutral	28'10"			N	N
Secondary	28'1"			N	N
Secondary	27'5"			N	N
Communication				N	N
Communication	20'5"	69		N	N
Communication	19'2"			N	N
Communication	18'1"			N	N
Communication	16'0"	12'6"		N	N
Primary	36'5"			N	N D: Pedestrian Only 9.5'
Primary	36'0"			N	N
Transformer	29'6"			N	N
Neutral	28'6"			N	N
Secondary	27'9"			N	N
Secondary	27'0"			N	N
Secondary Riser	25'3"			N	N
Communication				N	N
Communication	21'5"	58		N	N
Communication	20'8"			N	N
Communication	19'9"			N	N
Communication	18'3"	13'2"		N	N
Primary	36'5"			N	N D: Pedestrian Only 9.5'
Primary	35'10"			N	N
Primary	31'10"			N	N
Neutral	28'1"			N	N
Neutral	27'7"			N	N
Secondary	26'9"			N	N
Secondary	26'0"			N	N
Down Guy	24'11"			N	N
Communication				N	N
Communication				N	N
Down Guy	17'8"	16'10"	82	N	N
Communication	17'2"			N	N
Communication	17'0"			N	N
Communication	16'5"			N	N

Communication	15'6"		N	N	
Communication	13'7"		N	N	
Primary	39'0"		N	N	D: Pedestrian Only 9.5'
Primary	34'4"		N	N	
Neutral	29'2"		N	N	
Neutral	28'11"		N	N	
Secondary	28'7"		N	N	
Secondary	28'2"		N	N	
Secondary	27'11"		N	N	
Secondary	27'1"		N	N	
Communication			N	N	
Communication	21'7"	61	N	N	
Communication	20'7"		N	N	
Communication	19'5"		N	N	
Communication	18'10"		N	N	
Communication	18'5"		N	N	
Communication	18'0"		N	N	
Communication	17'3"		N	N	
Communication	16'4"		N	N	
Communication	15'7"	10'8"	N	N	
Primary	31'10"		Y	N	D: Pedestrian Only 9.5'
Neutral	29'0"		Y	N	
Secondary	28'0"		Y	N	
Secondary	27'5"		Y	N	
Transformer	22'5"		Y	N	
Communication			Y	N	
Communication	19'6"	UNK	Y	N	
Communication	18'2"		Y	N	
Communication	16'9"		Y	N	
Communication	15'8"		Y	N	
Communication	14'6"	UNK	Y	N	
Primary	37'4"		N	N	D: Pedestrian Only 9.5'
Neutral	33'0"		N	N	
Secondary	32'3"		N	N	
Secondary	31'7"		N	N	
Communication			N	N	
Communication	23'4"	84	N	N	
Communication	22'5"		N	N	
Communication	21'6"		N	N	
Communication	20'5"		N	N	
Communication	19'5"	17'0"	N	N	
Primary	32'3"		N	N	D: Pedestrian Only 9.5'
Neutral	28'10"		N	N	

Secondary	28'1"		N	N	
Secondary	27'6"		N	N	
Communication			N	N	
Communication	20'10"	56	N	N	
Communication	18'9"		N	N	
Communication	17'7"		N	N	
Communication	16'6"		N	N	
Communication	15'5"	14'11"	N	N	
Primary	34'2"		N	N	D: Pedestrian Only 9.5'
Neutral	27'0"		N	N	
Secondary	26'4"		N	N	
Secondary	25'8"		N	N	
Communication			N	N	
Communication	21'5"	16'11"	N	N	
Communication	20'5"		N	N	
Communication	19'3"		N	N	
Communication	18'5"		N	N	
Communication	17'5"	12'11"	N	N	
Primary	33'11"		N	N	D: Pedestrian Only 9.5'
Transformer	27'3"		N	N	
Neutral	26'6"		N	N	
Secondary	25'11"		N	N	
Secondary	25'3"		N	N	
Communication			N	N	
Communication	18'9"	55	N	N	
Communication	17'5"		N	N	
Communication	16'3"		N	N	
Communication	15'3"		N	N	
Communication	14'0"	14'8"	N	N	



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, March 08, 2018 11:16 AM
To: Windstream Jointuse
Cc: Hays, Sarah K
Subject: FW: LX135-01W
Attachments: Pole App Map.pdf; Map Key.pdf; LX135-01W Windstream Pole Inventory Report.pdf; O-Calcs.pdf; LX135-01W - METRONET POLE INVENTORY REPORT.xlsx

Please see attached for proposal titled LX135-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

LX135-01W Pole Inventory Report

POLE COUNT		16W	NT	45/ 3	WS	UNK
KU	0	16W	NT		WS	
Windstream	25	16W	NT		WS	
Total Pole Count	25	16W	NT		WS	
Total Needing Make Ready	UNK	16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		17W	27310-125	40/ 3	WS	UNK
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		18W	27310-125-02	45/ 3	WS	UNK
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	

18W	27310-125-02		WS	
18W	27310-125-02		WS	
18W	27310-125-02		WS	
18W	27310-125-02		WS	
19W	27310-126-01	45/ 1	WS	UNK
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
20W	27310-126	45/ 3	WS	UNK
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
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20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
21W	27310-126-02	40/ 3	WS	UNK
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
22W	27220-125-01	40/ 3	WS	UNK
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	

22W	27220-125-01		WS	
22W	27220-125-01		WS	
23W	27220-125	40/ 3	WS	UNK
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
24W	27220-127-02	40/ 2	WS	UNK
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
25W	27220-126-01	40/ 2	WS	UNK
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
26W	27220	40/ 3	WS	UNK
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
27W	27220-125-02	40/ 3	WS	UNK
27W	27220-125-02		WS	

27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
28W	27290-126-01	40/ 3	WS	UNK
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
33W	27290-126	45/ 3	WS	UNK
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
34W	NT	35/ 5	WS	UNK
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
35W	NT	40/ 3	WS	UNK
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	

35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
36W	NT	45/ 3	WS	UNK
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
37W	NT	45/ 3	WS	UNK
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
38W	L27290-P166-W	45/ 3	WS	UNK
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	

38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
57W	27220-228	45/ 3	WS	UNK
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
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57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
58W	NT	40/ 3	WS	UNK
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
59W	NT	45/ 3	WS	UNK
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
60W	NT	40/ 3	WS	UNK
60W	NT		WS	

60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
60W	NT			WS	
61W	27220-260	40/ 2		WS	UNK
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
61W	27220-260			WS	
62W	NT	40/ 3		WS	UNK
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
62W	NT			WS	
END					

Owner	1=None 2=Comms 3=Elec	4=Comms&Elec 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
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39.90	126 ST MARGARET DR	38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	Metronet				
		38.02139	-84.46603	Charter				
		38.02139	-84.46603	Windstream				
24.60	2047 COBURN BLVD, :	38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	Metronet				
		38.02117	-84.46575	Metronet				
		38.02117	-84.46575	Charter				
		38.02117	-84.46575	Charter				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
41.90	125 ST WILLIAM DR	38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	Metronet				

		38.02091	-84.46549	Charter
		38.02091	-84.46549	Windstream
		38.02091	-84.46549	Windstream
		38.02091	-84.46549	Windstream
41.60	126 ST WILLIAM DR	38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	Metronet
		38.02064	-84.46514	Charter
		38.02064	-84.46514	Windstream
		38.02064	-84.46514	Windstream
		38.02064	-84.46514	Windstream
58.30	2115 COBURN BLVD	38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	Metronet
		38.02041	-84.46491	Metronet
		38.02041	-84.46491	Charter
		38.02041	-84.46491	Charter
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
41.80	125 ST JAMES DR	38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	Metronet
		38.02012	-84.46461	Charter
		38.02012	-84.46461	Windstream
		38.02012	-84.46461	Windstream
33.40	126 ST JAMES DR	38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	Metronet
		38.01986	-84.46426	Charter

			38.01986	-84.46426	Windstream
			38.01986	-84.46426	Windstream
Attach to new pole	41.80	2137 COBURN BLVD, 4	38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Charter
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole	24.70	125 ST ANN DR	38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	Metronet
Attach to new pole			38.01941	-84.46376	Charter
Attach to new pole			38.01941	-84.46376	Windstream
Attach to new pole			38.01941	-84.46376	Windstream
	25.80	126 ST ANN DR	38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	Metronet
			38.01912	-84.46343	Charter
			38.01912	-84.46343	Windstream
			38.01912	-84.46343	Windstream
Attach to new pole	27.20	2205 COBURN BLVD, 4	38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	Metronet
Attach to new pole			38.01890	-84.46321	Charter
Attach to new pole			38.01890	-84.46321	Windstream
Attach to new pole			38.01890	-84.46321	Windstream
	26.30	125 ST PHILLIP DR	38.01867	-84.46295	KU
			38.01867	-84.46295	KU

		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	Metronet
		38.01867	-84.46295	Charter
		38.01867	-84.46295	Windstream
		38.01867	-84.46295	Windstream
Trees blocking midspan	23.70 126 ST PHILLIP DR	38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	Metronet
		38.01841	-84.46261	Charter
		38.01841	-84.46261	Windstream
		38.01841	-84.46261	Windstream
Attach to new pole	43.00 122 ST PHILLIP DR	38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	Metronet
Attach to new pole		38.01820	-84.46238	Charter
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
	35.90 134 ST PHILLIP DR	38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	Metronet
		38.01842	-84.46205	Charter
		38.01842	-84.46205	Windstream
		38.01842	-84.46205	Windstream
		38.01842	-84.46205	Windstream
	29.10 142 ST PHILLIP DR	38.01867	-84.46175	KU
		38.01867	-84.46175	KU
		38.01867	-84.46175	KU
		38.01867	-84.46175	KU

	38.01867	-84.46175	KU
	38.01867	-84.46175	KU
	38.01867	-84.46175	Metronet
	38.01867	-84.46175	Charter
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
23.60 150 ST PHILLIP DR	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	Metronet
	38.01885	-84.46142	Charter
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
32.20 158 ST PHILLIP DR	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	Metronet
	38.01905	-84.46110	Charter
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
45.10 166 ST PHILLIP DR	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Windstream

		38.01931	-84.46081	Windstream
		38.01931	-84.46081	Windstream
	32.00 228 ST ANN DR	38.02107	-84.45838	KU
		38.02107	-84.45838	KU
		38.02107	-84.45838	KU
		38.02107	-84.45838	KU
		38.02107	-84.45838	KU
		38.02107	-84.45838	KU
		38.02107	-84.45838	KU
		38.02107	-84.45838	KU
		38.02107	-84.45838	Metronet
		38.02107	-84.45838	Charter
		38.02107	-84.45838	Charter
		38.02107	-84.45838	Windstream
		38.02107	-84.45838	Windstream
		38.02107	-84.45838	Windstream
		38.02107	-84.45838	Windstream
		38.02107	-84.45838	Windstream
		38.02107	-84.45838	Windstream
		38.02107	-84.45838	Windstream
Trees blocking midspan	40.10 240 ST ANN DR	38.02138	-84.45792	KU
		38.02138	-84.45792	KU
		38.02138	-84.45792	KU
		38.02138	-84.45792	KU
		38.02138	-84.45792	KU
		38.02138	-84.45792	Metronet
		38.02138	-84.45792	Charter
		38.02138	-84.45792	Windstream
		38.02138	-84.45792	Windstream
		38.02138	-84.45792	Windstream
		38.02138	-84.45792	Windstream
	56.30 248 ST ANN DR	38.02162	-84.45758	KU
		38.02162	-84.45758	KU
		38.02162	-84.45758	KU
		38.02162	-84.45758	KU
		38.02162	-84.45758	Metronet
		38.02162	-84.45758	Charter
		38.02162	-84.45758	Windstream
		38.02162	-84.45758	Windstream
		38.02162	-84.45758	Windstream
		38.02162	-84.45758	Windstream
	36.70 256 ST ANN DR	38.02187	-84.45727	KU
		38.02187	-84.45727	KU

	38.02187	-84.45727	KU
	38.02187	-84.45727	KU
	38.02187	-84.45727	Metronet
	38.02187	-84.45727	Charter
	38.02187	-84.45727	Windstream
	38.02187	-84.45727	Windstream
	38.02187	-84.45727	Windstream
	38.02187	-84.45727	Windstream
11.10 260 ST ANN DR	38.02208	-84.45694	KU
	38.02208	-84.45694	KU
	38.02208	-84.45694	KU
	38.02208	-84.45694	KU
	38.02208	-84.45694	Metronet
	38.02208	-84.45694	Charter
	38.02208	-84.45694	Windstream
	38.02208	-84.45694	Windstream
	38.02208	-84.45694	Windstream
	38.02208	-84.45694	Windstream
24.20 268 ST ANN DR	38.02236	-84.45662	KU
	38.02236	-84.45662	KU
	38.02236	-84.45662	KU
	38.02236	-84.45662	KU
	38.02236	-84.45662	KU
	38.02236	-84.45662	Metronet
	38.02236	-84.45662	Charter
	38.02236	-84.45662	Windstream
	38.02236	-84.45662	Windstream
	38.02236	-84.45662	Windstream
	38.02236	-84.45662	Windstream

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm to Ground	3rd Party Comm to Power	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Pe
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Primary	34'8"			N	Y				D: Pedestrian Only 9.5'	
Transformer	27'0"			N	Y					
Neutral	25'11"			N	Y					
Secondary	25'2"			N	Y					
Secondary	24'6"			N	Y					
Streetlight	23'5"			N	Y					
Communication				N	Y					
Communication	20'6"		23	N	Y					
Communication	19'3"	16'5"		N	Y					
Primary	32'9"			Y	N				D: Pedestrian Only 9.5'	
Primary	30'5"			Y	N					
Transformer	25'6"			Y	N					
Neutral	23'11"			Y	N					
Secondary	23'1"			Y	N					
Secondary	22'4"			Y	N					
Streetlight	21'4"			Y	N					
Streetlight Drip Loop	20'11"			Y	N					
Communication				Y	N					
Communication				Y	N					
Communication	19'2"			Y	N					
Communication	18'11"		44	Y	N					
Communication	18'5"			Y	N					
Communication	18'2"			Y	N					
Communication	17'9"			Y	N					
Communication	17'5"			Y	N					
Communication	16'10"			Y	N					
Communication	16'4"	15'5"		Y	N					
Primary	39'8"			N	N				D: Pedestrian Only 9.5'	
Transformer	31'5"			N	N					
Neutral	30'3"			N	N					
Secondary	29'1"			N	N					
Secondary	28'4"			N	N					
Streetlight	26'3"			N	N					
Streetlight Drip Loop	25'7"			N	N					
Communication				N	N					

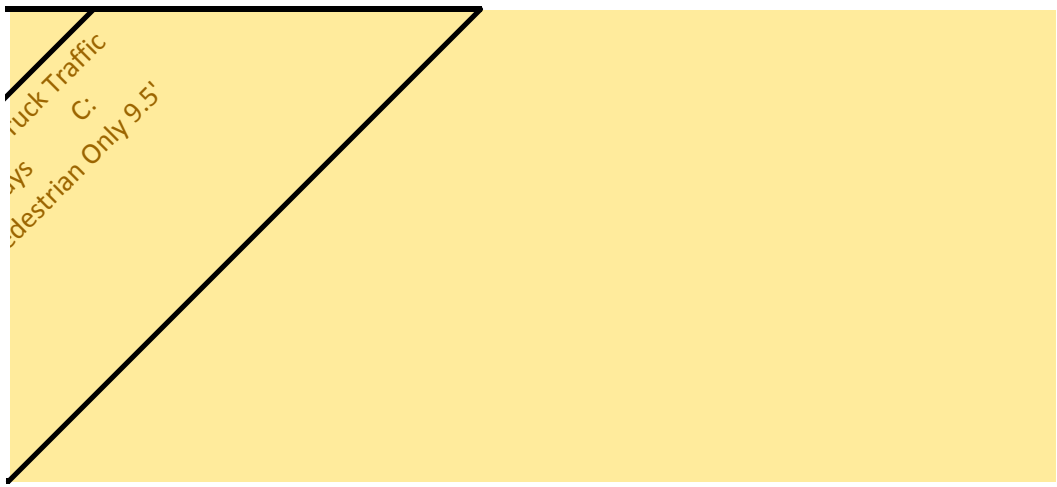
Communication	20'6"	113	N	N	
Communication	19'4"		N	N	
Communication	18'3"		N	N	
Communication	17'3"	16'6"	N	N	
Primary	38'6"		N	N	D: Pedestrian Only 9.5'
Neutral	30'10"		N	N	
Secondary	29'11"		N	N	
Secondary	28'11"		N	N	
Streetlight	27'6"		N	N	
Communication			N	N	
Communication	21'3"	72	N	N	
Communication	20'2"		N	N	
Communication	19'0"		N	N	
Communication	18'0"	15'2"	N	N	
Primary	38'0"		N	Y	D: Pedestrian Only 9.5'
Primary	33'6"		N	Y	
Transformer	27'4"		N	Y	
Neutral	26'9"		N	Y	
Secondary	25'6"		N	Y	
Secondary	24'3"		N	Y	
Communication			N	Y	
Communication			N	Y	
Communication	18'10"	22	N	Y	
Communication	17'10"		N	Y	
Communication	16'10"		N	Y	
Communication	16'2"		N	Y	
Communication	15'9"		N	Y	
Communication	15'1"		N	Y	
Communication	14'7"		N	Y	
Communication	14'1"	16'2"	N	Y	
Communication	13'7"		N	Y	
Primary	33'7'		N	N	B:Residential/Over Driveways
Neutral	26'2"		N	N	
Secondary Riser	25'6"		N	N	
Secondary	25'1'		N	N	
Secondary	24'3"		N	N	
Communication			N	N	
Communication	19'11"	71	N	N	
Communication	19'0"		N	N	
Communication	18'0"	19'7"	N	N	
Primary	33'7"		N	N	D: Pedestrian Only 9.5'
Neutral	26'1"		N	N	
Secondary	25'1"		N	N	
Secondary	24'2"		N	N	
Communication			N	N	
Communication	19'10"	49	N	N	

Communication	18'10"		N	N	
Communication	17'10"	13'6"	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Transformer			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Streetlight			N	N	
Communication			N	N	
Communication			N	N	
Communication		71	N	N	
Communication			N	N	
Communication		15'1"	N	N	
Primary			N	N	B:Residential/Over Driveways
Primary			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Communication			N	N	
Communication		74	N	N	
Communication			N	N	
Communication		17'6"	N	N	
Primary	33'11"		N	N	D: Pedestrian Only 9.5'
Neutral	26'3"		N	N	
Secondary	25'6"		N	N	
Secondary	24'9"		N	N	
Communication			N	N	
Communication	21'4"	35	N	N	
Communication	19'2"		N	N	
Communication	18'3"	16'5"	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Transformer			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Streetlight			N	N	
Communication			N	N	
Communication		41	N	N	
Communication			N	N	
Communication		16'0"	N	N	
Primary	32'10"		Y	N	D: Pedestrian Only 9.5'
Neutral	25'9"		Y	N	

Secondary	25'0"		Y	N	
Secondary Riser	24'8"		Y	N	
Secondary	24'4"		Y	N	
Secondary Drip Loop	23'10"		Y	N	
Communication			Y	N	
Communication	20'9"	42	Y	N	
Communication	19'9"		Y	N	
Communication	18'10"	17'5"	Y	N	
Primary	33'10"		N	N	D: Pedestrian Only 9.5'
Neutral	25'9"		N	N	
Secondary Riser	25'2"		N	N	
Secondary	24'5"		N	N	
Secondary	23'9"		N	N	
Communication			N	N	
Communication	20'3"	UNK	N	N	
Communication	19'2"		N	N	
Communication	18'1"	UNK	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Primary			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Transformer			N	N	
Communication			N	N	
Communication		40	N	N	
Communication			N	N	
Communication			N	N	
Communication			N	N	
Communication		12'10"	N	N	
Primary	29'0"		Y	N	D: Pedestrian Only 9.5'
Neutral	22'11"		Y	N	
Secondary	22'1"		Y	N	
Secondary	21'4"		Y	N	
Secondary Riser	20'9"		Y	N	
Communication			Y	N	
Communication	18'3"	40	Y	N	
Communication	17'6"		Y	N	
Communication	16'9"		Y	N	
Communication	15'5"	12'2"	Y	N	
Primary	33'5"		Y	N	D: Pedestrian Only 9.5'
Transformer	26'7"		Y	N	
Neutral	26'2"		Y	N	
Secondary	25'5"		Y	N	

Secondary	24'9"			Y	N
Secondary Riser	20'7"			Y	N
Communication				Y	N
Communication	18'8"	76		Y	N
Communication	17'11"			Y	N
Communication	17'4"			Y	N
Communication	16'2"			Y	N
Communication	14'9"	12'7"		Y	N
Primary	36'1"			N	N D: Pedestrian Only 9.5'
Primary	35'8"			N	N
Neutral	28'10"			N	N
Secondary	28'1"			N	N
Secondary	27'5"			N	N
Communication				N	N
Communication	20'5"	69		N	N
Communication	19'2"			N	N
Communication	18'1"			N	N
Communication	16'0"	12'6"		N	N
Primary	36'5"			N	N D: Pedestrian Only 9.5'
Primary	36'0"			N	N
Transformer	29'6"			N	N
Neutral	28'6"			N	N
Secondary	27'9"			N	N
Secondary	27'0"			N	N
Secondary Riser	25'3"			N	N
Communication				N	N
Communication	21'5"	58		N	N
Communication	20'8"			N	N
Communication	19'9"			N	N
Communication	18'3"	13'2"		N	N
Primary	36'5"			N	N D: Pedestrian Only 9.5'
Primary	35'10"			N	N
Primary	31'10"			N	N
Neutral	28'1"			N	N
Neutral	27'7"			N	N
Secondary	26'9"			N	N
Secondary	26'0"			N	N
Down Guy	24'11"			N	N
Communication				N	N
Communication				N	N
Down Guy	17'8"	16'10"	82	N	N
Communication	17'2"			N	N
Communication	17'0"			N	N
Communication	16'5"			N	N

Communication	15'6"		N	N	
Communication	13'7"		N	N	
Primary	39'0"		N	N	D: Pedestrian Only 9.5'
Primary	34'4"		N	N	
Neutral	29'2"		N	N	
Neutral	28'11"		N	N	
Secondary	28'7"		N	N	
Secondary	28'2"		N	N	
Secondary	27'11"		N	N	
Secondary	27'1"		N	N	
Communication			N	N	
Communication	21'7"	61	N	N	
Communication	20'7"		N	N	
Communication	19'5"		N	N	
Communication	18'10"		N	N	
Communication	18'5"		N	N	
Communication	18'0"		N	N	
Communication	17'3"		N	N	
Communication	16'4"		N	N	
Communication	15'7"	10'8"	N	N	
Primary	31'10"		Y	N	D: Pedestrian Only 9.5'
Neutral	29'0"		Y	N	
Secondary	28'0"		Y	N	
Secondary	27'5"		Y	N	
Transformer	22'5"		Y	N	
Communication			Y	N	
Communication	19'6"	UNK	Y	N	
Communication	18'2"		Y	N	
Communication	16'9"		Y	N	
Communication	15'8"		Y	N	
Communication	14'6"	UNK	Y	N	
Primary	37'4"		N	N	D: Pedestrian Only 9.5'
Neutral	33'0"		N	N	
Secondary	32'3"		N	N	
Secondary	31'7"		N	N	
Communication			N	N	
Communication	23'4"	84	N	N	
Communication	22'5"		N	N	
Communication	21'6"		N	N	
Communication	20'5"		N	N	
Communication	19'5"	17'0"	N	N	
Primary	32'3"		N	N	D: Pedestrian Only 9.5'
Neutral	28'10"		N	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

**PROPOSAL #: LX135-01W
Submit in Duplicate**

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # Lauren Sandefur 812.213.13238
EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: Lauren Sandefur

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	NT	16W	2029 Coburn Blvd, Lexington 40502	45, 3, WXM	19'3"	19'7"	24'6"	(1)Fiber/Strand			
2	27310-125	17W	2041 Coburn Blvd, Lexington 40502	40, 3, WXM	18'4"	N/A	22'4"	(1)Fiber/Strand			
3	27310-125-02	18W	2053 Coburn Blvd, Lexington 40502	45, 3, WXM	17'6"	19'5"	28'4"	(1)Fiber/Strand			
4	27310-126-01	19W	2101 Coburn Blvd, Lexington 40502	45, 1, WXM	19'0"	19'0"	28'11"	(1)Fiber/Strand			
5	27310-126	20W	2115 Coburn Blvd, Lexington 40502	45, 3, WXM	16'10"	N/A	24'3"	(1)Fiber/Strand			
6	27310-126-02	21W	2125 Coburn Blvd, Lexington 40502	40, 3, WXM	19'1"	19'1"	24'3"	(1)Fiber/Strand			
7	27220-125-01	22W	2129 Coburn Blvd, Lexington 40502	40, 3, WXM	18'10"	18'10"	24'2"	(1)Fiber/Strand			
8	27220-125	23W	2131 Coburn Blvd, Lexington 40502	40, 3, WXM	15'8"	N/A	23'6"	(1)Fiber/Strand			
9	27220-127-02	24W	2145 Coburn Blvd, Lexington 40502	40, 2, WXM	20'6"	N/A	25'10"	(1)Fiber/Strand			
10	27220-126-01	25W	2201 Coburn Blvd, Lexington 40502	40, 2, WXM	19'2"	N/A	24'9"	(1)Fiber/Strand			
11	27220	26W	2209 Coburn Blvd, Lexington 40502	40, 2, WXM	17'7"	N/A	24'9"	(1)Fiber/Strand			
12	27220-125-02	27W	2215 Coburn Blvd, Lexington 40502	40, 3, WXM	19'9"	N/A	24'4"	(1)Fiber/Strand			
13	27290-126-01	28W	126 St Phillip Dr, Lexington 40502	40, 3, WXM	19'3"	19'3"	23'9"	(1)Fiber/Strand			
14	27290-126	33W	126 St Phillip Dr, Lexington 40502	45, 3, WXM	21'4"	21'4"	26'8"	(1)Fiber/Strand			
15	NT	34W	134 St Phillip Dr, Lexington 40502	40, 3, WXM	17'0"	N/A	21'4"	(1)Fiber/Strand			
16	NT	35W	142 St Phillip Dr, Lexington 40502	40, 3, WXM	16'9"	N/A	24'9"	(1)Fiber/Strand			
17	NT	36W	150 St Phillip Dr, Lexington 40502	45, 3, WXM	19'2"	N/A	27'5"	(1)Fiber/Strand			
18	NT	37W	158 St Phillip Dr, Lexington 40502	45, 3, WXM	20'8"	N/A	27'0"	(1)Fiber/Strand			
19	L27290-P166-WS	38W	166 St Phillip Dr, Lexington 40502	45, 3, WXM	16'5"	N/A	26'0"	(2)Fiber/Strand			
20	27220-228	57W	228 St Ann Dr, Lexington 40502	45, 3, WXM	19'1"	19'9"	27'1"	(1)Fiber/Strand			

21	NT	58W	240 St Ann Dr, Lexington 40502	40, 3, WXM	18'4"	N/A	27'5"		(1)Fiber/Strand			
22	NT	59W	248 St Ann Dr, Lexington 40502	45, 3, WXM	22'7"	N/A	31'7"		(1)Fiber/Strand			
23	NT	60W	256 St Ann Dr, Lexington 40502	40, 3, WXM	18'10"	N/A	27'6"		(1)Fiber/Strand			
24	27220-260	61W	260 St Ann Dr, Lexington 40502	40, 2, WXM	20'7"	N/A	25'8"		(1)Fiber/Strand			
25	NT	62W	266 St Ann Dr, Lexington 40502	40, 3, WXM	17'6"	16'3"	25'3"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

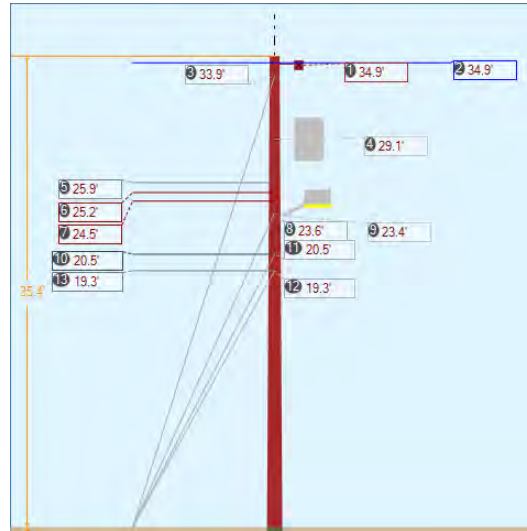
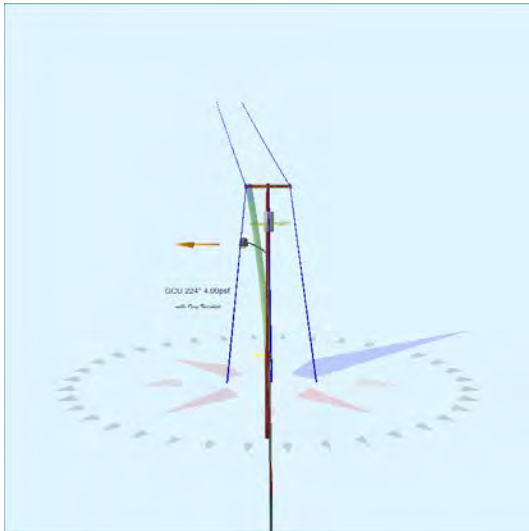
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
Footage AERIAL (TENSION SPAN)	ROADS
Footage AERIAL (SLACK SPAN)	WORK POINTS
Footage NEW / PROPOSED TRENCH	RAILROADS
Footage EXISTING INHERITED TRENCH	

Pole Num:	16W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.60	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.16	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021392 Deg	Longitude:	-84.466030 Deg	Elevation:	897.380271370154		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.9	0.0
Groundline	39.9	0.0
Vertical	20.7	26.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,956	209.7
Groundline	29,956	209.7
GL Allowable	84,844	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.4	315.0		83.3	224.1	85.1	140.0
? EHS 3/8 (Down)			33.9	55.2	224.1	62.5	140.0
? EHS 3/8 (Down)			23.7	65.4	224.1	73.0	140.0
? Single Helix Anchor	16.4	315.0		35.0	224.1	35.4	140.0
? EHS 1/4 (Down)			20.5	59.7	224.1	66.6	140.0
? EHS 1/4 (Down)			19.3	57.1	224.1	63.7	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 209.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,485	276.0	80,874	270.0	95.3	7,994	364	3	7,998	117.6
Comms	1,122	88.9	17,950	59.9	21.2	1,774	261	3	1,777	26.1
GuyBraces	-3,619	-286.6	-74,046	-247.2	-87.3	-7,319	28,803	277	-7,042	-103.6
PowerEquipments	40	3.2	1,131	3.8	1.3	112	694	7	118	1.7
Pole	188	14.9	2,750	9.2	3.2	272	1,984	19	291	4.3
Crossarms	2	0.2	60	0.2	0.1	6	190	2	8	0.1
Streetlights	19	1.5	555	1.9	0.7	55	86	1	56	0.8
Insulators	24	1.9	682	2.3	0.8	67	87	1	68	1.0
Pole Load	1,263	100.0	29,956	100.0	35.3	2,961	32,468	312	3,273	48.1
Pole Reserve Capacity			54,888		64.7	3,839			3,527	51.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 209.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,098	86.9	27,711	92.5	32.7	2,739	21,836	210	2,949	43.4
Unknown, COMMUNICATION	-26	-2.0	-564	-1.9	-0.7	-56	8,458	81	25	0.4
Pole	188	14.9	2,750	9.2	3.2	272	1,984	19	291	4.3
<Undefined>	2	0.2	60	0.2	0.1	6	190	2	8	0.1
Totals:	1,263	100.0	29,956	100.0	35.3	2,961	32,468	312	3,273	48.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	18.19	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	25,176	3	1,068	26,247
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.89	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	25,176	12	1,068	26,256
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.18	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	25,176	-10	1,068	26,234
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.89	0.3980	0.65	0.145	189.1	311.4	189.1	2,128	-19,604	16	1,691	-17,897
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.18	0.3980	0.65	0.145	189.1	311.4	189.1	2,128	-19,604	-19	1,691	-17,932
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.72	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	18,679	6	792	19,477
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.15	6.77	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	18,144	6	770	18,920
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.51	6.80	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	17,683	6	750	18,439
Totals:											90,827	19	8,897	99,743	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.52	7.04	1.3300	1.65	0.337	121.0	134.8	121.0	925	6,434	15	1,279	7,728
Telco	TELE 1.5	Unknown, COMMUNICATION	19.28	7.11	1.5000	1.92	0.900	121.0	134.8	121.0	2,000	13,071	26	1,314	14,410
Totals:											19,505	40	2,593	22,138	

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-25KVA	KU, UTILITY	29.15	21.03	130.0	130.0	365.00	39.00	--	22.00	--	218	1,178	1,395
Totals:												218	1,178	1,395

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.90	5.44	133.1	133.1	50.00	4.50	3.50	96.00	0	74	74	
Totals:												0	74	74

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.38	4.37	220.0	220.0	45.00	24.00	20.00	3.00	36.00	235	449	685
Totals:												235	449	685

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	0.00	133.1	1.7	3.00	3.80	12.75	4	159	164	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	45.00	216.2	1.7	3.00	3.80	12.75	46	159	205	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	-45.00	50.0	1.7	3.00	3.80	12.75	-37	159	122	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	45.00	230.0	178.3	3.00	3.80	12.75	38	159	197	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	-45.00	36.2	178.3	3.00	3.80	12.75	-45	159	114	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.90	0.00	134.8	134.8	2.00	3.00	3.19	1	12	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.15	0.00	134.8	134.8	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.51	0.00	134.8	134.8	2.00	3.00	3.19	1	11	12	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.52	0.00	134.8	224.8	5.00	3.00	0.00	1	0	1	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.28	0.00	134.8	224.8	5.00	3.00	0.00	1	0	1	
Totals:											10	830	841

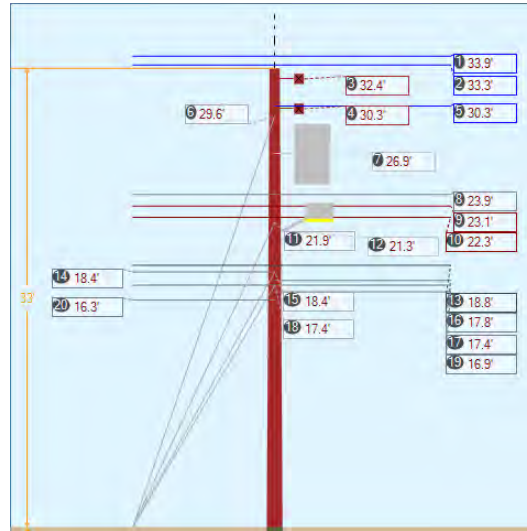
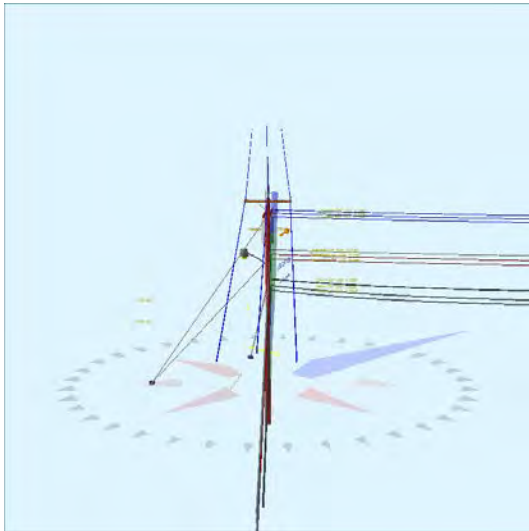
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	33.90	0.00	19.35	0.375	75.00	315.0	60.1	0.273	37.38	1.80
EHS 3/8	Down	KU, UTILITY	23.65	0.00	19.35	0.375	75.00	315.0	50.5	0.273	28.83	1.65
EHS 1/4	Down	Unknown, COMMUNICATION	20.52	0.00	16.40	0.25	75.00	315.0	51.2	0.121	24.54	1.24
EHS 1/4	Down	Unknown, COMMUNICATION	19.28	0.00	16.40	0.25	75.00	315.0	49.5	0.121	23.56	1.14

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,666	7,878	7,646	6,627	3,815	-1,007	-33,207
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,125	9,204	9,065	6,999	5,761	-1,522	-35,278
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,984	3,622	3,573	2,784	2,239	-591	-11,810
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,812	3,466	3,419	2,598	2,222	-587	-11,027
Totals:										19,007	14,037	-3,707	-91,322

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	19.35	315.0	20,000	1.00	20,000	17,023	16,653	85.1
Single Helix Anchor			18.00	16.40	315.0	20,000	1.00	20,000	7,087	6,991	35.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.37	34.07	10.45	27.40	7.32	11.52	1.60e+6	60.00	57.00	35.40	156,817	1568.50	4.83

Pole Num:	17W - 27310-125	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.99	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.62	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021172 Deg	Longitude:	-84.465745 Deg	Elevation:	893.642415227739		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.6	0.0
Groundline	24.6	19.3
Vertical	10.8	87.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,385	94.9
Groundline	15,385	94.9
GL Allowable	81,107	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.4	229.0		35.8	329.3	39.5	40.0
? EHS 3/8 (Down)			29.6	28.9	329.3	35.9	50.0
? EHS 3/8 (Down)			21.9	35.9	329.3	42.7	30.0
? Single Helix Anchor	19.2	305.1		23.3	329.3	35.2	140.0
? EHS 1/4 (Down)			18.4	37.6	329.3	65.2	140.0
? EHS 1/4 (Down)			17.4	40.1	329.3	64.2	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 94.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,010	167.1	48,464	315.0	59.8	6,732	688	7	6,738	99.1
Comms	5,808	322.5	61,392	399.0	75.7	8,527	1,214	12	8,539	125.6
GuyBraces	-6,835	-379.5	-90,568	-588.7	-111.7	-12,580	15,313	152	-12,428	-182.8
PowerEquipments	-38	-2.1	-2,088	-13.6	-2.6	-290	1,653	16	-274	-4.0
Pole	-105	-5.8	-1,063	-6.9	-1.3	-148	1,814	18	-130	-1.9
Crossarms	-18	-1.0	-349	-2.3	-0.4	-48	285	3	-46	-0.7
Streetlights	-12	-0.6	-259	-1.7	-0.3	-36	86	1	-35	-0.5
Insulators	-9	-0.5	-143	-0.9	-0.2	-20	142	1	-19	-0.3
Pole Load	1,801	100.0	15,385	100.0	19.0	2,137	21,196	210	2,347	34.5
Pole Reserve Capacity			65,722		81.0	4,663			4,453	65.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 94.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-969	-53.8	-13,175	-85.6	-16.2	-1,830	12,999	129	-1,701	-25.0
Unknown, COMMUNICATION	2,893	160.6	29,972	194.8	37.0	4,163	6,098	60	4,223	62.1
Pole	-105	-5.8	-1,063	-6.9	-1.3	-148	1,814	18	-130	-1.9
<Undefined>	-18	-1.0	-349	-2.3	-0.4	-48	285	3	-46	-0.7
Totals:	1,801	100.0	15,385	100.0	19.0	2,137	21,196	210	2,347	34.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.89	0.00	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	71,244	0	150	71,395
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.89	0.00	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-71,984	0	172	-71,812
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	69,915	-75	148	69,988
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-70,641	-83	169	-70,556
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	69,915	100	148	70,163
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-70,641	111	169	-70,361
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.30	18.33	0.3980	0.33	0.145	118.3	49.7	118.3	585	16,228	9	-657	15,580
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.30	48.59	0.3980	0.33	0.145	118.3	49.7	118.3	585	16,228	11	-657	15,582
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.30	48.59	0.3980	0.33	0.145	118.3	49.7	118.3	585	16,228	-5	-657	15,566
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.93	6.71	0.3980	0.33	0.145	118.3	49.7	118.3	585	12,819	-4	-519	12,296
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.93	6.71	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	50,291	-4	106	50,393
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.93	6.71	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-50,813	-4	122	-50,696
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.11	6.76	0.3980	0.33	0.145	118.3	49.7	118.3	585	12,379	-4	-501	11,874
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.11	6.76	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	48,566	-4	103	48,665
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.11	6.76	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-49,071	-5	118	-48,958
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.81	0.3980	0.33	0.145	118.3	49.7	118.3	585	11,944	-4	-484	11,456

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.81	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	46,857	-4	99	46,952
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.81	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-47,344	-5	113	-47,235
Totals:											82,120	29	-1,858	80,291	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	7.02	1.3300	1.61	0.337	118.3	49.7	118.3	450	7,766	38	-833	6,972
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	7.02	1.3300	1.45	0.337	109.2	135.5	109.2	925	17,217	35	170	17,423
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	7.02	1.3300	1.63	0.337	121.0	314.8	121.0	925	-17,396	39	195	-17,162
Telco	TELE 1.5	Unknown, COMMUNICATION	18.36	7.05	1.5000	1.69	0.900	109.2	135.5	109.2	2,000	36,267	67	181	36,516
Telco	TELE 1.5	Unknown, COMMUNICATION	17.76	7.09	1.5000	2.18	0.900	118.3	49.7	118.4	850	13,822	67	-858	13,031
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.11	1.5000	1.91	0.900	121.0	314.8	121.0	2,000	-34,754	-98	197	-34,654
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.11	1.5000	1.69	0.900	109.2	135.5	109.2	2,000	34,396	67	172	34,636
Telco	TELE 1.5	Unknown, COMMUNICATION	16.94	7.14	1.5000	2.18	0.900	118.3	49.7	118.4	850	13,182	68	-818	12,432
Telco	TELE 1.5	Unknown, COMMUNICATION	16.35	7.17	1.5000	1.69	0.900	109.2	135.5	109.2	2,000	32,283	68	161	32,513
Totals:											102,785	353	-1,431	101,707	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-75KVA	KU, UTILITY	26.93	23.03	315.0	315.0	870.00	52.00	--	26.00	--	-2,428	-1,031	-3,459
Totals:											-2,428	-1,031	-3,459	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.44	5.45	135.5	135.5	50.00	4.50	3.50	96.00	33	-798	-765	
Normal	Crossarm	30.30	5.58	49.7	49.7	50.00	4.50	3.50	96.00	0	188	188	
Totals:											33	-610	-578

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	21.31	4.37	235.0	235.0	45.00	24.00	20.00	3.00	36.00	-183	-246	-430
Totals:												-183	-246	-430

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.01	0.00	0.0	0.0	13.00	9.00	10.50	0	-90	-90	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.63	45.00	218.6	0.0	6.00	3.50	7.50	-24	-24	-48	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.63	-45.00	52.4	0.0	6.00	3.50	7.50	32	-24	7	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.30	0.00	49.7	0.0	3.00	3.80	12.75	6	-42	-35	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.30	45.00	132.6	0.0	3.00	3.80	12.75	21	-42	-20	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.30	-45.00	326.7	0.0	3.00	3.80	12.75	-9	-42	-51	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.93	0.00	353.3	83.3	2.00	3.00	3.19	0	-6	-7	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.11	0.00	353.3	83.3	2.00	3.00	3.19	0	-6	-7	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.30	0.00	353.3	83.3	2.00	3.00	3.19	0	-6	-6	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.85	0.00	49.7	139.7	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.36	0.00	135.5	225.5	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.76	0.00	49.7	139.7	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.42	0.00	282.2	372.2	5.00	3.00	0.00	-6	0	-6	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.42	0.00	135.5	225.5	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	16.94	0.00	49.7	139.7	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	16.35	0.00	135.5	225.5	5.00	3.00	0.00	4	0	4	
Totals:											44	-282	-238

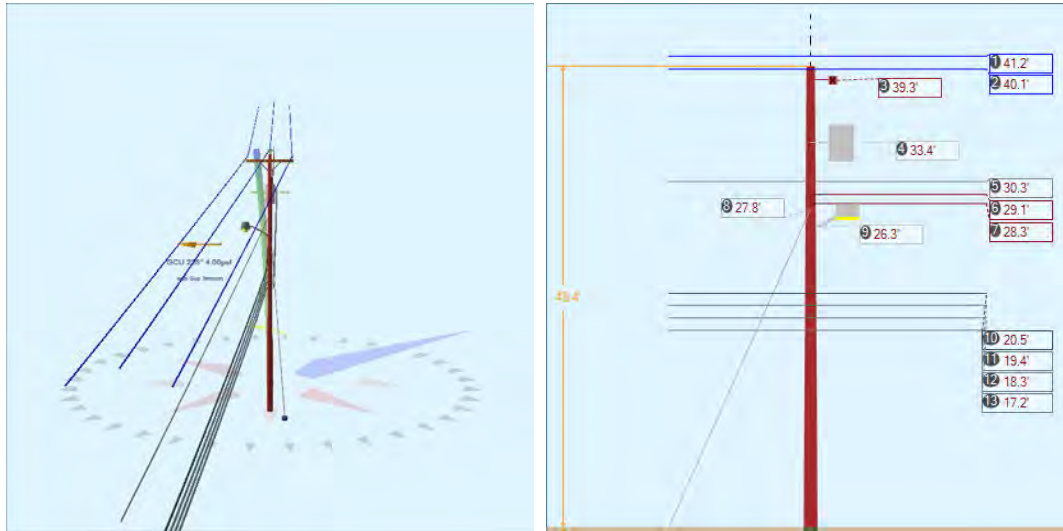
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.57	0.00	20.44	0.375	75.00	229.0	55.2	0.273	34.27	0.86
EHS 3/8	Down	KU, UTILITY	21.93	0.00	20.44	0.375	75.00	229.0	46.9	0.273	28.23	0.89
EHS 1/4	Down	Unknown, COMMUNICATION	18.36	0.00	19.17	0.25	75.00	305.1	43.6	0.121	24.77	0.79
EHS 1/4	Down	Unknown, COMMUNICATION	17.40	0.00	19.17	0.25	75.00	305.1	42.1	0.121	24.11	0.82

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,969	4,517	4,002	3,285	2,287	-1,591	-46,521
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,922	5,383	4,982	3,635	3,407	-2,370	-51,452
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,904	3,549	2,250	1,553	1,629	-1,409	-25,557
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,841	3,492	2,402	1,610	1,782	-1,541	-26,514
Totals:										10,083	9,105	-6,910	-150,044

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	20.44	229.0	25,000	1.00	25,000	9,874	8,961	39.5
Single Helix Anchor			18.00	19.17	305.1	20,000	1.00	20,000	7,040	4,652	35.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.24	33.74	10.38	20.82	7.32	11.34	1.60e+6	60.00	57.00	33.01	197,118	1962.59	9.26

Pole Num:	18W - 27310-125-02	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.65	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	38.00	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020912 Deg	Longitude:	-84.465494 Deg	Elevation:	897.384506760187		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.9	0.0
Groundline	41.9	0.0
Vertical	10.6	26.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,968	229.5
Groundline	37,968	229.5
GL Allowable	98,480	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.7	128.0		60.5	224.8	61.9	290.0
? EHS 3/8 (Down)			27.8	87.3	224.8	98.3	290.0
System Capacity Summary:				Adequate		At Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,413	93.9	46,264	121.9	47.0	3,423	392	3	3,427	50.4
Comms	1,153	76.6	20,328	53.5	20.6	1,504	1,231	11	1,515	22.3
GuyBraces	-1,360	-90.4	-35,345	-93.1	-35.9	-2,615	14,922	130	-2,486	-36.6
PowerEquipments	42	2.8	1,382	3.6	1.4	102	694	6	108	1.6
Pole	228	15.1	4,269	11.2	4.3	316	2,413	21	337	5.0
Crossarms	1	0.1	41	0.1	0.0	3	95	1	4	0.1
Streetlights	20	1.3	705	1.9	0.7	52	86	1	53	0.8
Insulators	9	0.6	325	0.9	0.3	24	129	1	25	0.4
Pole Load	1,505	100.0	37,968	100.0	38.6	2,809	19,960	174	2,983	43.9
Pole Reserve Capacity			60,512		61.4	3,991			3,817	56.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	123	8.2	13,324	35.1	13.5	986	16,155	141	1,126	16.6
Unknown, COMMUNICATION	1,153	76.6	20,333	53.6	20.7	1,505	1,297	11	1,516	22.3
Pole	228	15.1	4,269	11.2	4.3	316	2,413	21	337	5.0
<Undefined>	1	0.1	41	0.1	0.0	3	95	1	4	0.1
Totals:	1,505	100.0	37,968	100.0	38.6	2,809	19,960	174	2,983	43.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.23	0.00	0.3980	0.37	0.145	141.8	139.2	141.8	2,128	-505	0	1,528	1,022
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.23	0.00	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	7,868	0	1,177	9,044
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.37	0.145	141.8	139.2	141.8	2,128	-491	174	1,485	1,168
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	7,648	134	1,144	8,926

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.37	0.145	141.8	139.2	141.8	2,128	-491	-176	1,485	818
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	7,648	-135	1,144	8,657
Neutral	#4 COPPER SOLID	KU, UTILITY	30.25	6.76	0.2043	0.45	0.126	141.8	139.2	141.8	982	-171	0	879	708
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.25	6.76	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	5,771	1	863	6,635
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.83	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	5,553	1	830	6,385
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.33	6.87	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	5,404	1	808	6,214
Totals:											38,233	1	11,343	49,577	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.47	7.34	1.3300	2.00	0.337	141.8	139.2	141.9	925	-109	68	1,545	1,504
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.47	7.34	1.3300	1.46	0.337	109.2	315.5	109.2	925	1,697	52	1,190	2,939
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.43	7.40	1.5000	1.70	0.900	109.2	315.5	109.2	2,000	3,483	-92	1,235	4,626
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.43	7.40	1.5000	2.35	0.900	141.8	139.2	141.9	2,000	-224	120	1,603	1,499
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.31	7.46	1.5000	1.70	0.900	109.2	315.5	109.2	2,000	3,283	-93	1,164	4,354
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.31	7.46	1.5000	2.35	0.900	141.8	139.2	141.9	2,000	-211	121	1,511	1,421
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.25	7.53	1.5000	1.70	0.900	109.2	315.5	109.2	2,000	3,092	-94	1,096	4,095
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.25	7.53	1.5000	2.35	0.900	141.8	139.2	141.9	2,000	-199	122	1,423	1,346
		COMMUNICATION													
Totals:											10,814	205	10,765	21,783	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	33.36	21.07	315.0	315.0	365.00	39.00	--	22.00	--	95	1,387	1,481
Totals:											95	1,387	1,481	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		39.27	5.47	137.4	137.4	50.00	4.50	3.50	96.00	-2	46	44
Totals:											-2	46	44

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.27	4.49	219.0	219.0	45.00	24.00	20.00	3.00	36.00	236	519	755
Totals:											236	519	755	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	40.35	0.00	0.0	0.0	13.00	9.00	10.50	0	187	187	
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.46	45.00	220.4	0.0	6.00	3.50	7.50	43	50	93	
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.46	-45.00	54.3	0.0	6.00	3.50	7.50	-43	50	7	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.25	0.00	139.2	139.2	2.00	3.00	3.19	0	14	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.25	0.00	315.5	315.5	2.00	3.00	3.19	0	14	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.11	0.00	315.5	315.5	2.00	3.00	3.19	0	13	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.33	0.00	315.5	315.5	2.00	3.00	3.19	0	13	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.47	0.00	227.4	137.4	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.43	0.00	45.5	405.5	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.43	0.00	229.2	139.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.31	0.00	45.5	405.5	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.31	0.00	229.2	139.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.25	0.00	45.5	405.5	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.25	0.00	229.2	139.2	5.00	3.00	0.00	6	0	6	
Totals:											6	342	348

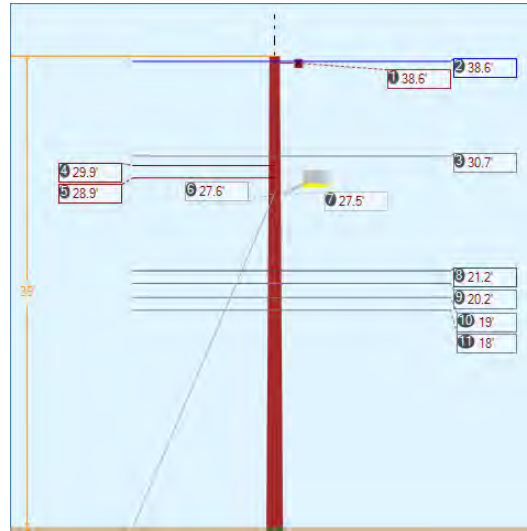
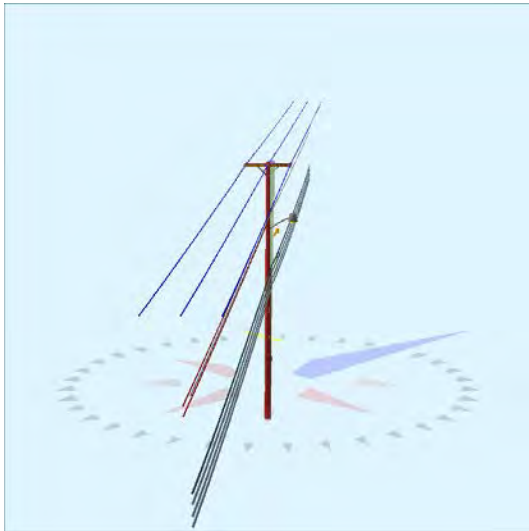
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	27.84	0.00	19.67	0.375	75.00	128.0	54.6	0.273	32.38	2.47

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	13,622	12,383	12,096	9,856	7,012	-1,392	-37,877
Totals:									9,856	7,012	-1,392	-37,877

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	19.67	128.0	20,000	1.00	20,000	12,383	12,096	61.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.78	33.93	11.02	21.74	7.32	12.10	1.60e+6	60.00	57.00	40.35	188,314	1883.03	9.43

Pole Num:	19W - 27310-126-01	Pole Length / Class:	45 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.01	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.00	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020640 Deg	Longitude:	-84.465140 Deg	Elevation:	896.153692020535		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.6	29.0
Groundline	24.9	0.0
Vertical	0.9	136.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,242	320.4
Groundline	24,048	331.8
GL Allowable	142,610	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.9	316.0		0.0	322.0	0.0	0.0
? EHS 3/8 (Down)			27.6	0.0	322.0	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 331.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-201	-120.4	14,904	62.0	10.5	712	381	3	715	10.5
Comms	17	10.1	512	2.1	0.4	25	1,246	8	33	0.5
GuyBraces	1	0.8	36	0.2	0.0	2	10	0	2	0.0
Pole	250	149.4	4,894	20.4	3.4	234	3,061	21	255	3.7
Crossarms	65	39.2	2,518	10.5	1.8	120	190	1	122	1.8
Streetlights	20	11.7	607	2.5	0.4	29	86	1	30	0.4
Insulators	15	9.2	578	2.4	0.4	28	84	1	28	0.4
Pole Load	167	100.0	24,048	100.0	16.9	1,149	5,057	34	1,183	17.4
Pole Reserve Capacity			118,562		83.1	5,651			5,617	82.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 331.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-165	-98.7	16,119	67.0	11.3	770	523	4	774	11.4
Unknown, COMMUNICATION	17	10.1	518	2.2	0.4	25	1,284	9	33	0.5
Pole	250	149.4	4,894	20.4	3.4	234	3,061	21	255	3.7
<Undefined>	65	39.2	2,518	10.5	1.8	120	190	1	122	1.8
Totals:	167	100.0	24,048	100.0	16.9	1,149	5,057	34	1,183	17.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.55	18.83	0.2922	0.28	0.205	112.3	138.9	112.3	1,530	-74,729	-14	12	-74,731
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.55	48.78	0.2922	0.28	0.205	112.3	138.9	112.3	1,530	-74,729	-8	12	-74,725
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.55	48.78	0.2922	0.28	0.205	112.3	138.9	112.3	1,530	-74,729	-2	12	-74,719
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	38.55	48.78	0.3980	0.28	0.145	141.8	319.2	141.8	2,128	104,060	3	15	104,078
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	38.55	18.83	0.3980	0.28	0.145	141.8	319.2	141.8	2,128	104,060	16	15	104,092

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.55	48.78	0.3980	0.28	0.145	141.8	319.2	141.8	2,128	104,060	10	15	104,085
Neutral	#4 COPPER SOLID	KU, UTILITY	30.71	7.34	0.2043	0.25	0.126	112.3	138.9	112.3	982	-38,208	4	8	-38,195
Neutral	#4 COPPER SOLID	KU, UTILITY	30.71	7.34	0.2043	0.40	0.126	141.8	319.2	141.8	982	38,253	5	9	38,267
Secondary	#4 COPPER SOLID	KU, UTILITY	29.93	7.39	0.2043	0.25	0.126	112.3	138.9	112.3	982	-37,241	-17	8	-37,250
Secondary	#4 COPPER SOLID	KU, UTILITY	28.90	7.46	0.2043	0.25	0.126	112.3	138.9	112.3	982	-35,958	-17	8	-35,967
Totals:											14,840	-21	115	14,934	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.22	7.96	1.3300	1.49	0.337	112.3	138.9	112.4	925	-24,868	13	15	-24,840
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.22	7.96	1.3300	1.98	0.337	141.8	319.2	141.9	925	24,898	16	17	24,931
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	8.02	1.5000	1.75	0.900	112.3	138.9	112.4	2,000	-51,152	23	16	-51,114
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	8.02	1.5000	2.33	0.900	141.8	319.2	141.9	2,000	51,213	29	18	51,260
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.01	8.10	1.5000	1.75	0.900	112.3	138.9	112.4	2,000	-48,162	23	15	-48,125
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.01	8.10	1.5000	2.33	0.900	141.8	319.2	141.9	2,000	48,220	29	17	48,265
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.97	8.17	1.5000	1.75	0.900	112.3	138.9	112.4	2,000	-45,544	23	14	-45,507
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.97	8.17	1.5000	2.33	0.900	141.8	319.2	141.9	2,000	45,598	29	16	45,643
		COMMUNICATION													
Totals:											202	185	126	513	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.55	6.08	138.9	138.9	50.00	4.50	3.50	96.00	0	2,523	2,523	
Totals:											0	2,523	2,523

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 3 ft. Arm	KU, UTILITY	27.52	5.05	45.0	45.0	45.00	24.00	20.00	3.00	36.00	70	538	608
											Totals:	70	538	608

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.55	0.00	138.9	0.0	3.00	3.80	12.75	-9	89	81	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.55	45.00	221.3	0.0	3.00	3.80	12.75	-13	89	76	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.55	-45.00	56.6	0.0	3.00	3.80	12.75	-4	89	86	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.55	45.00	236.6	180.0	3.00	3.80	12.75	4	89	93	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.55	0.00	318.9	180.0	3.00	3.80	12.75	9	89	98	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.55	-45.00	41.3	180.0	3.00	3.80	12.75	13	89	103	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.71	0.00	49.1	319.1	2.00	3.00	3.19	1	14	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.93	0.00	138.9	138.9	2.00	3.00	3.19	-2	14	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.90	0.00	138.9	138.9	2.00	3.00	3.19	-2	13	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.22	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.19	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.01	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.97	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
										Totals:	2	578	579

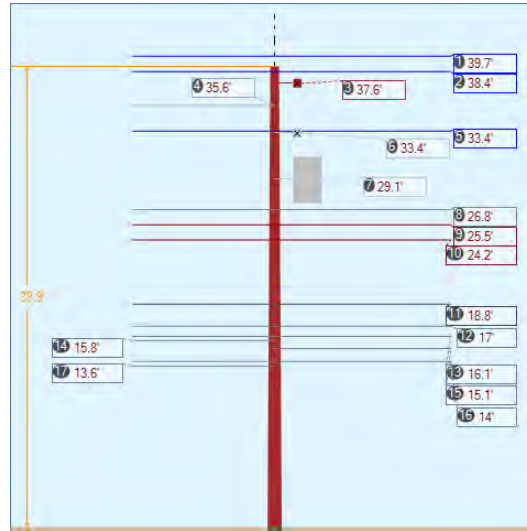
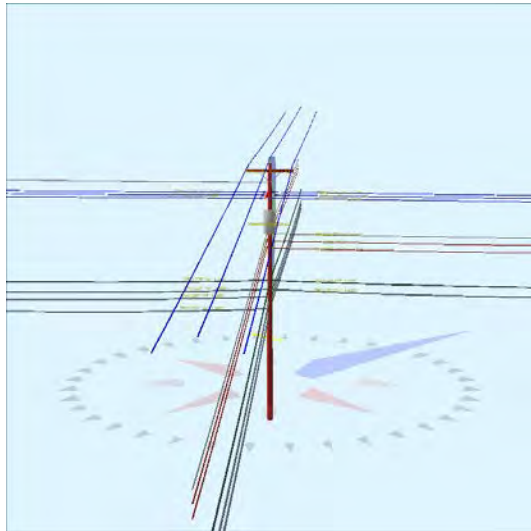
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	27.62	0.00	17.87	0.375	75.00	316.0	56.9	0.273	31.17	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)		
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	36		
										Totals:	0	0	0	36

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	17.87	316.0	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.04	33.01	12.78	10.16	8.60	13.69	1.60e+6	60.00	57.00	38.99	551,408	5619.39	111.11

Pole Num:	20W - 27310-126	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.13	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.45	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020410 Deg	Longitude:	-84.464914 Deg	Elevation:	894.452381504944		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	314.9
Groundline	0.0	314.9
Vertical	23.3	48.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	54,103	302.1
Groundline	54,103	302.1
GL Allowable	94,252	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	147.5	228.9		6.2	314.9	9.0	50.0
? EHS 3/8 (Span/Head)			35.6	9.0	314.9	14.3	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 302.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-1,012	-27.7	-25,527	-47.2	-27.1	-1,838	1,101	10	-1,828	-26.9
Comms	3,944	108.0	59,851	110.6	63.5	4,309	1,972	18	4,327	63.6
GuyBraces	397	10.9	14,149	26.2	15.0	1,019	34	0	1,019	15.0
PowerEquipments	54	1.5	-591	-1.1	-0.6	-43	1,216	11	-32	-0.5
Pole	213	5.8	4,160	7.7	4.4	300	2,280	20	320	4.7
Crossarms	34	0.9	1,251	2.3	1.3	90	190	2	92	1.3
Insulators	24	0.6	810	1.5	0.9	58	200	2	60	0.9
Pole Load	3,653	100.0	54,103	100.0	57.4	3,895	6,993	63	3,958	58.2
Pole Reserve Capacity			40,149		42.6	2,905			2,842	41.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 302.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	295	8.1	2,025	3.7	2.2	146	2,668	24	170	2.5
Unknown, COMMUNICATION	3,111	85.2	46,667	86.3	49.5	3,360	1,856	17	3,376	49.7
Pole	213	5.8	4,160	7.7	4.4	300	2,280	20	320	4.7
<Undefined>	34	0.9	1,251	2.3	1.3	90	190	2	92	1.3
Totals:	3,653	100.0	54,103	100.0	57.4	3,895	6,993	63	3,958	58.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	39.75	0.00	0.2922	0.36	0.205	126.2	137.6	126.2	1,530	-76,206	0	14	-76,192
Primary	#2 COPPER 7 STRAND KU, UTILITY	39.75	0.00	0.2922	0.28	0.205	112.3	318.9	112.3	1,530	75,707	0	21	75,728
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.43	45.33	0.2922	0.36	0.205	126.2	137.6	126.2	1,530	-73,686	25	14	-73,646
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.43	45.33	0.2922	0.28	0.205	112.3	318.9	112.3	1,530	73,203	22	20	73,246
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.43	45.33	0.2922	0.36	0.205	126.2	137.6	126.2	1,530	-73,686	-65	14	-73,736

Primary	#2 COPPER 7 STRAND	KU, UTILITY	38.43	45.33	0.2922	0.28	0.205	112.3	318.9	112.3	1,530	73,203	-57	20	73,166
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	16.73	0.7200	0.25	0.462	117.3	49.3	117.3	6,210	-79,696	-8	1,328	-78,375
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	45.62	0.7200	0.25	0.462	117.3	49.3	117.3	6,210	-79,690	26	1,328	-78,336
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	45.47	0.7200	0.25	0.462	117.3	49.3	117.3	6,210	-79,690	-28	1,328	-78,390
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	18.48	0.7200	0.40	0.462	147.5	228.9	147.5	6,210	77,889	10	1,674	79,574
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	48.72	0.7200	0.40	0.462	147.5	228.9	147.5	6,210	77,889	35	1,674	79,599
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	48.58	0.7200	0.40	0.462	147.5	228.9	147.5	6,210	77,889	-28	1,674	79,536
Neutral	#4 COPPER SOLID	KU, UTILITY	26.78	6.88	0.2043	0.32	0.126	126.2	137.6	126.2	982	-32,951	6	9	-32,937
Neutral	#4 COPPER SOLID	KU, UTILITY	26.78	6.88	0.2043	0.25	0.126	112.3	318.9	112.3	982	32,736	5	12	32,753
Neutral	#4 COPPER SOLID	KU, UTILITY	26.78	6.88	0.2043	0.31	0.126	117.3	49.3	117.3	982	-10,102	-5	615	-9,492
Secondary	#4 COPPER SOLID	KU, UTILITY	25.51	6.95	0.2043	0.32	0.126	126.2	137.6	126.2	982	-31,387	6	8	-31,373
Secondary	#4 COPPER SOLID	KU, UTILITY	25.51	6.95	0.2043	0.25	0.126	112.3	318.9	112.3	982	31,181	5	12	31,198
Secondary	#4 COPPER SOLID	KU, UTILITY	25.51	6.95	0.2043	0.31	0.126	117.3	49.3	117.3	982	-9,623	-5	585	-9,042
Secondary	#4 COPPER SOLID	KU, UTILITY	24.23	7.03	0.2043	0.31	0.126	117.3	49.3	117.3	982	-9,140	-5	556	-8,588
Secondary	#4 COPPER SOLID	KU, UTILITY	24.23	7.03	0.2043	0.32	0.126	126.2	137.6	126.2	982	-29,809	6	8	-29,795
Secondary	#4 COPPER SOLID	KU, UTILITY	24.23	7.03	0.2043	0.25	0.126	112.3	318.9	112.3	982	29,614	5	11	29,630
											Totals:	-36,351	-49	10,927	-25,473

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.82	7.35	1.3300	1.59	0.337	117.3	49.3	117.3	925	-6,686	-54	1,122	-5,618
CATV	CATV 1.0	Unknown, COMMUNICATION	18.82	7.35	1.3300	1.71	0.337	126.2	137.6	126.2	925	-21,807	-58	16	-21,849
CATV	CATV 1.0	Unknown, COMMUNICATION	18.82	7.35	1.3300	2.10	0.337	147.5	228.9	147.5	925	6,535	-68	1,415	7,881
CATV	CATV 1.0	Unknown, COMMUNICATION	18.82	7.35	1.3300	1.49	0.337	112.3	318.9	112.4	925	21,664	52	23	21,738
Telco	TELE 1.5	Unknown, COMMUNICATION	16.96	7.46	1.5000	1.85	0.900	117.3	49.3	117.3	2,000	-13,027	96	1,105	-11,826

Telco	TELE 1.5	Unknown, COMMUNICATION	16.96	7.46	1.5000	2.47	0.900	147.5	228.9	147.5	2,000	12,732	121	1,393	14,246
Telco	TELE 1.5	Unknown, COMMUNICATION	16.10	7.51	1.5000	2.01	0.900	126.2	137.6	126.2	2,000	-40,336	-104	15	-40,426
Telco	TELE 1.5	Unknown, COMMUNICATION	16.10	7.51	1.5000	1.75	0.900	112.3	318.9	112.4	2,000	40,072	92	21	40,186
Telco	TELE 1.5	KU, UTILITY	15.77	7.53	1.5000	2.47	0.900	147.5	228.9	147.5	2,000	11,838	37	1,295	13,170
Telco	TELE 1.5	Unknown, COMMUNICATION	15.08	7.57	1.5000	1.85	0.900	112.3	318.9	112.4	1,650	30,960	93	20	31,073
Telco	TELE 1.5	Unknown, COMMUNICATION	13.99	7.63	1.5000	2.01	0.900	126.2	137.6	126.2	2,000	-35,047	-106	13	-35,140
Telco	TELE 1.5	Unknown, COMMUNICATION	13.99	7.63	1.5000	1.75	0.900	112.3	318.9	112.4	2,000	34,818	94	18	34,930
Telco	TELE 1.5	Unknown, COMMUNICATION	13.59	7.66	1.5000	2.47	0.900	147.5	228.9	147.5	2,000	10,208	37	1,117	11,362
Totals:											51,924	230	7,572	59,726	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-50KVA	KU, UTILITY	29.08	22.24	140.0	140.0	640.00	47.00	--	24.00	--	-2,145	1,555	-590
Totals:											-2,145	1,555	-590

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		37.62	5.48	137.6	137.6	50.00	4.50	3.50	96.00	-42	1,217	1,176	
Normal Crossarm		33.41	5.73	228.6	228.6	50.00	4.50	3.50	96.00	13	60	72	
Totals:											-29	1,277	1,248

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin Pin Insulator - 22 kV	KU, UTILITY	38.87	0.00	0.0	0.0	13.00	9.00	10.50	0	176	176
Pin Pin Insulator - 5 kV	KU, UTILITY	37.81	45.00	220.6	0.0	6.00	3.50	7.50	6	47	54
Pin Pin Insulator - 5 kV	KU, UTILITY	37.81	-45.00	54.5	0.0	6.00	3.50	7.50	-16	47	31
Deadend Deadend Insulator - 15 kV	KU, UTILITY	33.41	0.00	48.3	48.3	3.00	3.80	12.75	-2	77	75
Deadend Deadend Insulator - 15 kV	KU, UTILITY	33.41	45.00	311.3	-180.3	3.00	3.80	12.75	20	77	96

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	-45.00	145.9	-180.3	3.00	3.80	12.75	-21	77	55
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	0.00	228.6	0.3	3.00	3.80	12.75	3	77	79
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	45.00	311.3	0.3	3.00	3.80	12.75	23	77	100
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	-45.00	145.9	0.3	3.00	3.80	12.75	-18	77	59
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.78	0.00	230.0	140.0	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.78	0.00	48.3	48.3	2.00	3.00	3.19	-1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	230.0	140.0	2.00	3.00	3.19	1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	48.3	48.3	2.00	3.00	3.19	-1	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.23	0.00	48.3	48.3	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.23	0.00	230.0	140.0	2.00	3.00	3.19	1	11	12
Bolt	Single Bolt	Unknown, COMMUNICATION	18.82	0.00	138.3	138.3	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.82	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	16.96	0.00	318.6	318.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	16.10	0.00	137.6	227.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.10	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	KU, UTILITY	15.77	0.00	228.9	318.9	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	15.08	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	13.99	0.00	137.6	227.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	13.99	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	13.59	0.00	228.9	318.9	5.00	3.00	0.00	2	0	2
Totals:										8	800	809

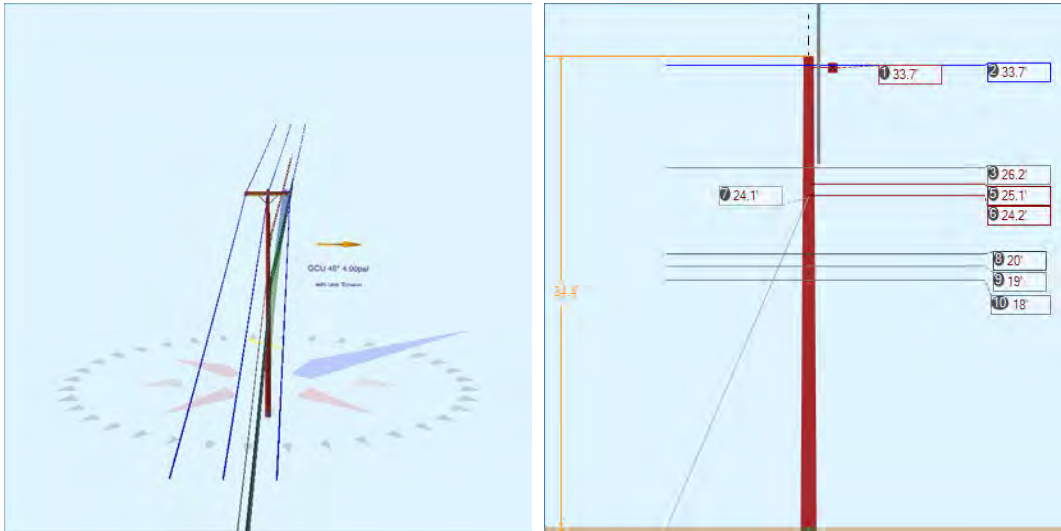
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	35.58	35.58	147.50	0.375	75.00	228.9	0.0	0.273	145.68	1.15

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	1,989	1,808	1,249	0	1,249	361	14,119
Totals:										0	1,249	361	14,119

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	147.50	228.9	20,000	1.00	20,000	1,808	1,249	9.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.29	33.47	11.00	12.21	7.32	11.93	1.60e+6	60.00	57.00	38.87	246,899	2497.55	35.71

Pole Num:	21W - 27310-126-02	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.15	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020120 Deg	Longitude:	-84.464611 Deg	Elevation:	886.155370315295		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.8	0.0 47.7
Groundline	41.8	0.0 47.7
Vertical	3.6	22.4 315.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,448	39.4 47.7
Groundline	34,448	39.4 47.7
GL Allowable	84,749	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.9	135.0		19.1	47.7	21.4	310.0
? EHS 3/8 (Down)			24.1	27.5	47.7	33.9	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 39.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	830	57.0	23,304	67.7	27.5	1,894	417	4	1,898	27.9
Comms	607	41.6	11,887	34.5	14.0	966	945	9	975	14.3
GuyBraces	-212	-14.5	-5,032	-14.6	-5.9	-409	4,631	45	-364	-5.4
Pole	187	12.8	3,227	9.4	3.8	262	1,926	19	281	4.1
Crossarms	2	0.2	74	0.2	0.1	6	190	2	8	0.1
Risers	27	1.9	469	1.4	0.6	38	49	0	39	0.6
Insulators	15	1.1	519	1.5	0.6	42	74	1	43	0.6
Pole Load	1,456	100.0	34,448	100.0	40.7	2,799	8,233	79	2,879	42.3
Pole Reserve Capacity			50,301		59.4	4,001			3,921	57.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 39.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	661	45.4	19,243	55.9	22.7	1,564	5,143	49	1,613	23.7
Unknown, COMMUNICATION	607	41.6	11,904	34.6	14.1	967	974	9	977	14.4
Pole	187	12.8	3,227	9.4	3.8	262	1,926	19	281	4.1
<Undefined>	2	0.2	74	0.2	0.1	6	190	2	8	0.1
Totals:	1,456	100.0	34,448	100.0	40.7	2,799	8,233	79	2,879	42.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	18.20	0.2922	0.49	0.205	141.6	136.2	141.6	1,530	-7,944	-2	1,095	-6,851
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	48.54	0.2922	0.49	0.205	141.6	136.2	141.6	1,530	-7,944	-15	1,095	-6,864
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	48.54	0.2922	0.49	0.205	141.6	136.2	141.6	1,530	-7,944	14	1,095	-6,836
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	48.54	0.2922	0.39	0.205	126.2	317.6	126.2	1,530	9,569	-12	973	10,530
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	18.20	0.2922	0.39	0.205	126.2	317.6	126.2	1,530	9,569	2	973	10,544

Primary	#2 COPPER 7 STRAND	KU, UTILITY	33.72	48.54	0.2922	0.39	0.205	126.2	317.6	126.2	1,530	9,569	13	973	10,556
Neutral	#4 COPPER SOLID	KU, UTILITY	26.23	6.66	0.2043	0.45	0.126	141.6	136.2	141.6	982	-3,966	20	757	-3,189
Neutral	#4 COPPER SOLID	KU, UTILITY	26.23	6.66	0.2043	0.36	0.126	126.2	317.6	126.2	982	4,777	18	673	5,468
Secondary	#4 COPPER SOLID	KU, UTILITY	25.06	6.73	0.2043	0.36	0.126	126.2	317.6	126.2	982	4,564	3	643	5,209
Secondary	#4 COPPER SOLID	KU, UTILITY	24.22	6.78	0.2043	0.36	0.126	126.2	317.6	126.2	982	4,410	3	621	5,034
Totals:											14,660	42	8,900	23,602	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.95	7.04	1.3300	1.74	0.337	126.2	317.6	126.2	925	3,422	58	1,330	4,810
CATV	CATV 1.0	Unknown, COMMUNICATION	19.95	7.04	1.3300	2.00	0.337	141.6	136.2	141.6	925	-2,841	65	1,496	-1,280
Telco	TELE 1.5	Unknown, COMMUNICATION	19.05	7.09	1.5000	2.03	0.900	126.2	317.6	126.2	2,000	7,065	101	1,388	8,554
Telco	TELE 1.5	Unknown, COMMUNICATION	19.05	7.09	1.5000	2.34	0.900	141.6	136.2	141.6	2,000	-5,865	114	1,561	-4,190
Telco	TELE 1.5	Unknown, COMMUNICATION	18.04	7.16	1.5000	2.03	0.900	126.2	317.6	126.2	2,000	6,690	102	1,314	8,106
Telco	TELE 1.5	Unknown, COMMUNICATION	18.04	7.16	1.5000	2.34	0.900	141.6	136.2	141.6	2,000	-5,554	115	1,478	-3,961
Totals:											2,917	554	8,569	12,040	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.72	5.45	136.2	136.2	50.00	4.50	3.50	96.00	0	75	75	
Totals:											0	75	75

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 0.0°	Riser	KU, UTILITY	25.58	5.85	0.0	0.0	25.58	306.95	2.50	2.50	306.95	9	466	475
Totals:											9	466	475	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	0.00	136.2	0.0	3.00	3.80	12.75	-1	79	78
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	45.00	219.3	0.0	3.00	3.80	12.75	-22	79	56
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	-45.00	53.1	0.0	3.00	3.80	12.75	20	79	99
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	45.00	233.1	180.0	3.00	3.80	12.75	-20	79	58
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	0.00	316.2	180.0	3.00	3.80	12.75	1	79	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	-45.00	39.3	180.0	3.00	3.80	12.75	22	79	101
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.23	0.00	46.9	316.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	317.6	317.6	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.22	0.00	317.6	317.6	2.00	3.00	3.19	0	11	11
Bolt	Single Bolt	Unknown, COMMUNICATION	19.95	0.00	47.6	407.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	19.05	0.00	47.6	407.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	18.04	0.00	47.6	407.6	5.00	3.00	0.00	6	0	6
Totals:										19	506	526

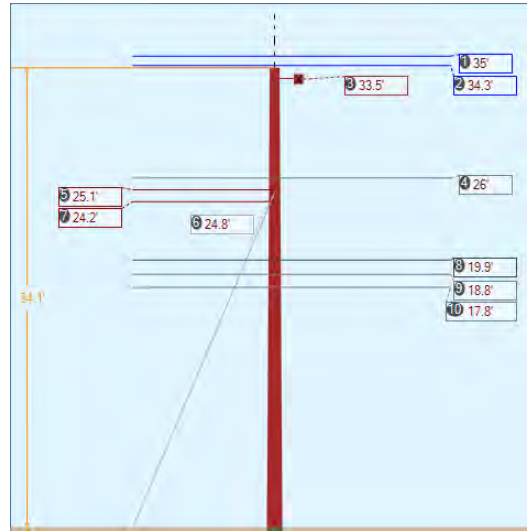
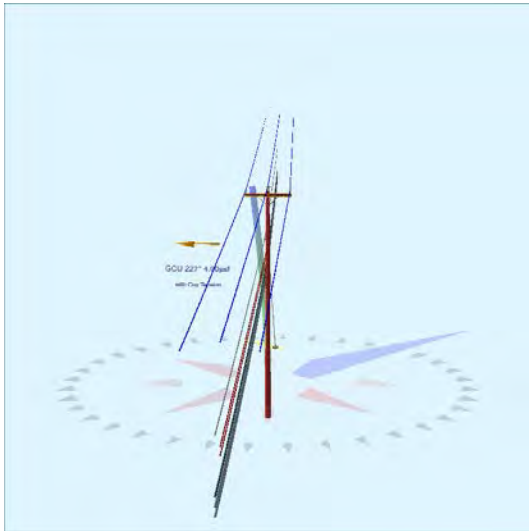
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.10	0.00	17.90	0.375	75.00	135.0	53.2	0.273	28.31	0.68

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,699	4,272	3,812	3,052	2,283	-223	-5,097
Totals:										3,052	2,283	-223	-5,097

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	17.90	135.0	20,000	1.00	20,000	4,272	3,812	21.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.42	33.56	10.59	12.88	7.32	11.51	1.60e+6	60.00	57.00	34.39	229,054	2286.83	27.78

Pole Num:	22W - 27220-125-01	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.86	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.05	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019859 Deg	Longitude:	-84.464264 Deg	Elevation:	888.793778546932		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.4	0.0 227.0
Groundline	33.4	0.0 227.0
Vertical	2.9	22.3 138.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,285	220.5 227.0
Groundline	27,285	220.5 227.0
GL Allowable	84,086	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	26.5	318.0		15.9	227.0	17.0	140.0
? EHS 3/8 (Down)			24.9	22.9	227.0	26.9	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 220.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	709	61.1	20,240	74.2	24.1	1,654	386	4	1,658	24.4
Comms	547	47.1	10,663	39.1	12.7	871	886	9	880	12.9
GuyBraces	-291	-25.1	-7,158	-26.2	-8.5	-585	3,296	32	-553	-8.1
Pole	186	16.0	3,198	11.7	3.8	261	1,906	18	280	4.1
Crossarms	1	0.1	46	0.2	0.1	4	95	1	5	0.1
Insulators	9	0.7	296	1.1	0.4	24	87	1	25	0.4
Pole Load	1,160	100.0	27,285	100.0	32.5	2,230	6,657	64	2,294	33.7
Pole Reserve Capacity			56,801		67.6	4,570			4,506	66.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 220.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	426	36.7	13,362	49.0	15.9	1,092	3,741	36	1,128	16.6
Unknown, COMMUNICATION	547	47.1	10,680	39.1	12.7	873	915	9	882	13.0
Pole	186	16.0	3,198	11.7	3.8	261	1,906	18	280	4.1
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	5	0.1
Totals:	1,160	100.0	27,285	100.0	32.5	2,230	6,657	64	2,294	33.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	35.02	0.00	0.2922	0.30	0.205	109.4	137.3	109.4	1,530	8,227	0	879	9,106
Primary	#2 COPPER 7 STRAND KU, UTILITY	35.02	0.00	0.2922	0.49	0.205	141.6	316.2	141.6	1,530	-6,897	0	1,140	-5,757
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.30	0.205	109.4	137.3	109.4	1,530	8,059	147	861	9,067
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.49	0.205	141.6	316.2	141.6	1,530	-6,757	190	1,117	-5,450
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.30	0.205	109.4	137.3	109.4	1,530	8,059	-142	861	8,778
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.49	0.205	141.6	316.2	141.6	1,530	-6,757	-184	1,117	-5,824

Neutral	#4 COPPER SOLID	KU, UTILITY	25.96	6.66	0.2043	0.27	0.126	109.4	137.3	109.4	982	3,913	15	579	4,508
Neutral	#4 COPPER SOLID	KU, UTILITY	25.96	6.66	0.2043	0.45	0.126	141.6	316.2	141.6	982	-3,281	20	751	-2,510
Secondary	#4 COPPER SOLID	KU, UTILITY	25.08	6.71	0.2043	0.27	0.126	109.4	137.3	109.4	982	3,781	2	560	4,343
Secondary	#4 COPPER SOLID	KU, UTILITY	24.21	6.77	0.2043	0.27	0.126	109.4	137.3	109.4	982	3,649	2	540	4,191
Totals:											11,997	48	8,406	20,452	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.87	7.03	1.3300	1.47	0.337	109.4	137.3	109.4	925	2,821	50	1,152	4,024
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.87	7.03	1.3300	2.00	0.337	141.6	316.2	141.6	925	-2,365	65	1,494	-807
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.80	7.09	1.5000	1.70	0.900	109.4	137.3	109.4	2,000	5,773	88	1,192	7,053
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.80	7.09	1.5000	2.34	0.900	141.6	316.2	141.6	2,000	-4,840	114	1,545	-3,181
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.84	7.15	1.5000	1.70	0.900	109.4	137.3	109.4	2,000	5,477	89	1,131	6,696
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.84	7.15	1.5000	2.34	0.900	141.6	316.2	141.6	2,000	-4,591	115	1,466	-3,011
		COMMUNICATION													
Totals:											2,274	521	7,979	10,775	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.49	5.45	137.3	137.3	50.00	4.50	3.50	96.00	5	41	47	
Totals:											5	41	47

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	34.14	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
		KU, UTILITY									
Pin	Pin Insulator - 5 kV	33.68	45.00	220.4	0.0	6.00	3.50	7.50	43	43	86
		KU, UTILITY									
Pin	Pin Insulator - 5 kV	33.68	-45.00	54.2	0.0	6.00	3.50	7.50	-42	43	1
		KU, UTILITY									
Spool	Spool Insulator - 25 kV	25.96	0.00	226.8	136.8	2.00	3.00	3.19	2	12	14
		KU, UTILITY									

Spool	Spool Insulator - 25 kV	KU, UTILITY	25.08	0.00	137.3	137.3	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.21	0.00	137.3	137.3	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	19.87	0.00	226.8	136.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.80	0.00	226.8	136.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.84	0.00	226.8	136.8	5.00	3.00	0.00	6	0	6
Totals:										21	278	299

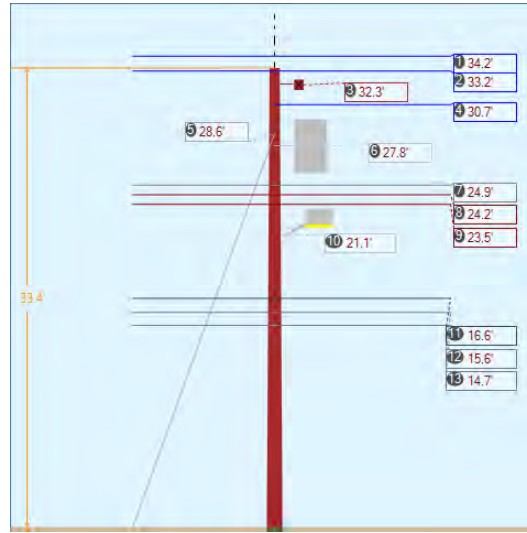
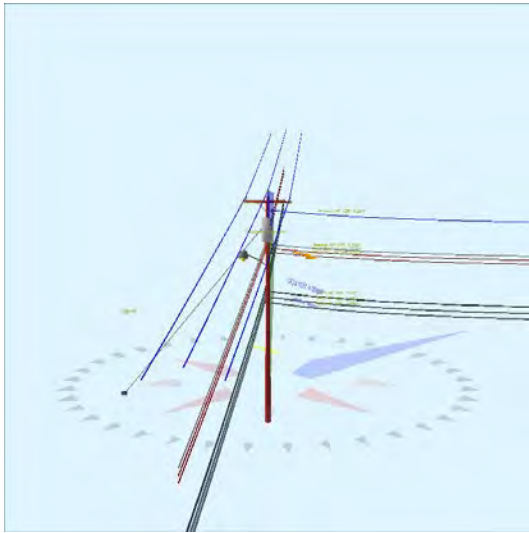
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.85	0.00	26.50	0.375	75.00	318.0	43.0	0.273	34.57	0.69

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,731	3,392	3,179	2,169	2,324	-303	-7,233
Totals:										2,169	2,324	-303	-7,233

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	26.50	318.0	20,000	1.00	20,000	3,392	3,179	17.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.35	33.56	10.56	11.61	7.32	11.48	1.60e+6	60.00	57.00	34.14	228,123	2295.44	34.48

Pole Num:	23W - 27220-125	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.64	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.76	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019641 Deg	Longitude:	-84.464028 Deg	Elevation:	883.908316191857		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.8	0.0
Groundline	41.8	0.0
Vertical	3.6	23.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,484	88.4
Groundline	33,484	88.4
GL Allowable	82,029	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	25.1	213.0		8.3	104.8	10.7	40.0
? EHS 3/8 (Down)			28.6	12.0	104.8	16.9	40.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 88.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	592	26.9	14,570	43.5	17.8	1,239	538	5	1,245	18.3
Comms	1,941	88.2	29,026	86.7	35.4	2,469	1,238	12	2,481	36.5
GuyBraces	-609	-27.7	-16,984	-50.7	-20.7	-1,445	1,891	19	-1,426	-21.0
PowerEquipments	53	2.4	2,772	8.3	3.4	236	1,216	12	248	3.6
Pole	175	7.9	2,893	8.6	3.5	246	1,843	18	264	3.9
Crossarms	19	0.9	617	1.8	0.8	53	95	1	53	0.8
Streetlights	19	0.9	222	0.7	0.3	19	86	1	20	0.3
Insulators	12	0.5	366	1.1	0.5	31	133	1	32	0.5
Pole Load	2,201	100.0	33,484	100.0	40.8	2,848	7,039	69	2,917	42.9
Pole Reserve Capacity			48,545		59.2	3,952			3,883	57.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 88.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	66	3.0	947	2.8	1.2	81	3,807	37	118	1.7
Unknown, COMMUNICATION	1,941	88.2	29,027	86.7	35.4	2,469	1,295	13	2,482	36.5
Pole	175	7.9	2,893	8.6	3.5	246	1,843	18	264	3.9
<Undefined>	19	0.9	617	1.8	0.8	53	95	1	53	0.8
Totals:	2,201	100.0	33,484	100.0	40.8	2,848	7,039	69	2,917	42.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	KU, UTILITY	34.24	0.00	0.2922	0.30	0.205	115.4	138.7	115.4	1,530	43,492	0	393	43,884
Primary	KU, UTILITY	34.24	0.00	0.2922	0.27	0.205	109.4	317.3	109.4	1,530	-44,760	0	351	-44,409
Primary	KU, UTILITY	33.16	45.33	0.2922	0.30	0.205	115.4	138.7	115.4	1,530	42,118	-105	380	42,394
Primary	KU, UTILITY	33.16	45.33	0.2922	0.27	0.205	109.4	317.3	109.4	1,530	-43,347	-99	340	-43,106

Primary	#2 COPPER 7 STRAND	KU, UTILITY	33.16	45.33	0.2922	0.30	0.205	115.4	138.7	115.4	1,530	42,118	129	380	42,628
Primary	#2 COPPER 7 STRAND	KU, UTILITY	33.16	45.33	0.2922	0.27	0.205	109.4	317.3	109.4	1,530	-43,347	122	340	-42,884
Primary	#4 COPPER SOLID	KU, UTILITY	30.70	16.57	0.2043	0.33	0.126	125.7	48.1	125.8	150	4,568	8	428	5,004
Neutral	#4 COPPER SOLID	KU, UTILITY	24.86	6.68	0.2043	0.33	0.126	125.7	48.1	125.8	150	3,699	11	347	4,056
Neutral	#4 COPPER SOLID	KU, UTILITY	24.86	6.68	0.2043	0.27	0.126	115.4	138.7	115.4	982	20,260	-11	253	20,503
Neutral	#4 COPPER SOLID	KU, UTILITY	24.86	6.68	0.2043	0.24	0.126	109.4	317.3	109.4	982	-20,851	-10	227	-20,635
Secondary	#4 COPPER SOLID	KU, UTILITY	24.16	6.72	0.2043	0.33	0.126	125.7	48.1	125.8	150	3,595	11	337	3,942
Secondary	#4 COPPER SOLID	KU, UTILITY	24.16	6.72	0.2043	0.27	0.126	115.4	138.7	115.4	982	19,689	-11	246	19,924
Secondary	#4 COPPER SOLID	KU, UTILITY	24.16	6.72	0.2043	0.24	0.126	109.4	317.3	109.4	982	-20,263	-10	220	-20,053
Secondary	#4 COPPER SOLID	KU, UTILITY	23.46	6.76	0.2043	0.27	0.126	115.4	138.7	115.4	982	19,120	-11	239	19,348
Secondary	#4 COPPER SOLID	KU, UTILITY	23.46	6.76	0.2043	0.24	0.126	109.4	317.3	109.4	982	-19,677	-10	214	-19,474
Secondary	#4 COPPER SOLID	KU, UTILITY	23.46	6.76	0.2043	0.33	0.126	125.7	48.1	125.8	150	3,490	11	327	3,828
Totals:											9,905	23	5,022	14,950	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.64	7.18	1.3300	1.55	0.337	115.4	138.7	115.4	925	12,771	-41	440	13,170
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.64	7.18	1.3300	1.45	0.337	109.4	317.3	109.4	925	-13,143	-39	394	-12,788
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.64	7.18	1.3300	1.72	0.337	125.7	48.1	125.8	300	4,950	45	603	5,598
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.63	7.24	1.5000	1.80	0.900	115.4	138.7	115.4	2,000	25,936	-73	452	26,315
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.63	7.24	1.5000	1.69	0.900	109.4	317.3	109.4	2,000	-26,692	-69	404	-26,357
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.63	7.24	1.5000	2.01	0.900	125.7	48.1	125.9	750	11,624	79	619	12,322
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.67	7.30	1.5000	1.80	0.900	115.4	138.7	115.4	2,000	24,349	-73	424	24,700
		COMMUNICATION													

Telco	TELE 1.5	Unknown,	14.67	7.30	1.5000	1.69	0.900	109.4	317.3	109.4	2,000	-25,059	-70	380	-24,749
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.67	7.30	1.5000	2.01	0.900	125.7	48.1	125.9	750	10,911	80	581	11,572
		COMMUNICATION													
Totals:											25,647	-161	4,297	29,783	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA KU, UTILITY	27.77	22.00	140.0	140.0	640.00	47.00	--	24.00	--	1,384	1,461	2,845
Totals:											1,384	1,461	2,845

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.35	5.47	138.0	138.0	50.00	4.50	3.50	96.00	28	605	633	
Totals:											28	605	633

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm KU, UTILITY	21.14	4.40	225.0	225.0	45.00	24.00	20.00	3.00	36.00	-174	402	228
Totals:											-174	402	228

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV KU, UTILITY	33.37	0.00	0.0	0.0	13.00	9.00	10.50	0	149	149
Pin	Pin Insulator - 5 kV KU, UTILITY	32.53	45.00	221.1	0.0	6.00	3.50	7.50	-29	40	11
Pin	Pin Insulator - 5 kV KU, UTILITY	32.53	-45.00	54.9	0.0	6.00	3.50	7.50	36	40	76
Deadend	Deadend Insulator - 15 kV KU, UTILITY	30.70	0.00	48.1	48.1	3.00	3.80	12.75	6	69	75
Spool	Spool Insulator - 25 kV KU, UTILITY	24.86	0.00	35.0	35.0	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV KU, UTILITY	24.86	0.00	220.0	130.0	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV KU, UTILITY	24.16	0.00	35.0	35.0	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV KU, UTILITY	24.16	0.00	220.0	130.0	2.00	3.00	3.19	-1	11	9
Spool	Spool Insulator - 25 kV KU, UTILITY	23.46	0.00	220.0	130.0	2.00	3.00	3.19	-1	10	9
Spool	Spool Insulator - 25 kV KU, UTILITY	23.46	0.00	35.0	35.0	2.00	3.00	3.19	1	10	12

Bolt	Three Bolt	Unknown, COMMUNICATION	16.64	0.00	228.0	138.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	16.64	0.00	48.1	138.1	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	15.63	0.00	228.0	138.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	15.63	0.00	48.1	138.1	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	14.67	0.00	228.0	138.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	14.67	0.00	48.1	138.1	5.00	3.00	0.00	4	0	4
Totals:										12	363	375

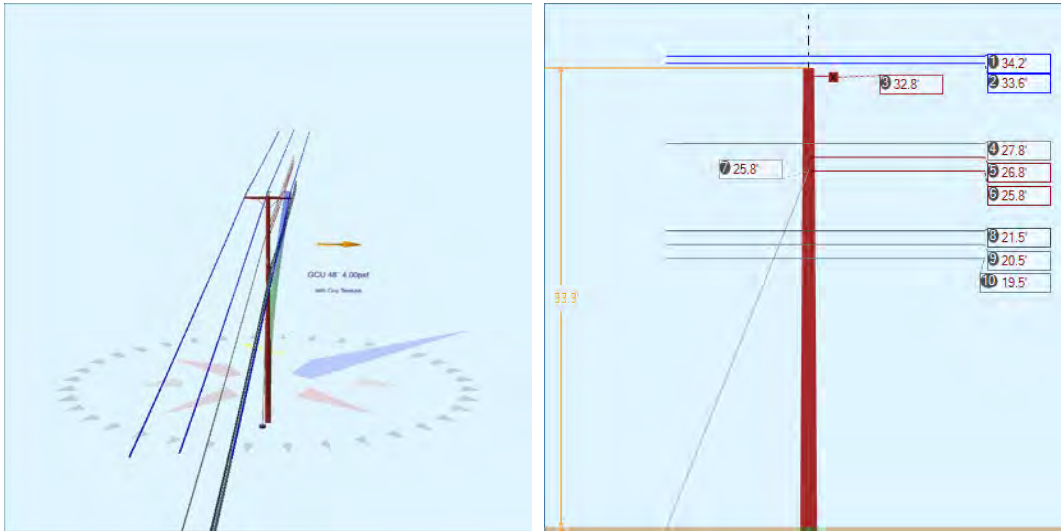
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	28.60	0.00	25.08	0.375	75.00	213.0	48.6	0.273	36.33	0.38

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,346	2,133	1,657	1,243	1,096	-623	-17,426
Totals:										1,243	1,096	-623	-17,426

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	25.08	213.0	20,000	1.00	20,000	2,133	1,657	10.7

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.35	33.74	10.42	12.15	7.32	11.39	1.60e+6	60.00	57.00	33.37	198,141	1955.39	27.78

Pole Num:	24W - 27220 & 127-02	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	38.22	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019413 Deg	Longitude:	-84.463760 Deg	Elevation:	884.691559594252		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.7	0.0
Groundline	24.7	0.0
Vertical	2.7	23.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,766	38.4
Groundline	23,766	38.4
GL Allowable	100,189	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	24.1	137.0		18.7	47.7	19.9	310.0
? EHS 3/8 (Down)			25.8	27.0	47.7	31.6	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 38.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	752	75.2	20,785	87.5	20.8	1,439	253	2	1,441	21.2
Comms	414	41.4	8,749	36.8	8.7	606	648	6	611	9.0
GuyBraces	-369	-36.8	-9,332	-39.3	-9.3	-646	4,146	36	-610	-9.0
Pole	193	19.3	3,217	13.5	3.2	223	2,127	18	241	3.5
Crossarms	1	0.1	47	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	300	1.3	0.3	21	91	1	22	0.3
Pole Load	1,001	100.0	23,766	100.0	23.7	1,645	7,360	63	1,709	25.1
Pole Reserve Capacity			76,423		76.3	5,155			5,091	74.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 38.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	392	39.2	11,736	49.4	11.7	813	4,462	38	851	12.5
Unknown, COMMUNICATION	414	41.4	8,766	36.9	8.8	607	676	6	613	9.0
Pole	193	19.3	3,217	13.5	3.2	223	2,127	18	241	3.5
<Undefined>	1	0.1	47	0.2	0.1	3	95	1	4	0.1
Totals:	1,001	100.0	23,766	100.0	23.7	1,645	7,360	63	1,709	25.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#6 COPPER SOLID KU, UTILITY	34.18	0.00	0.1620	0.42	0.079	138.9	137.6	138.9	668	-4,738	0	905	-3,833
Primary	#6 COPPER SOLID KU, UTILITY	34.18	0.00	0.1620	0.26	0.079	109.5	318.3	109.5	668	5,096	0	712	5,808
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.42	0.079	138.9	137.6	138.9	668	-4,665	103	891	-3,670
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.26	0.079	109.5	318.3	109.5	668	5,017	81	701	5,799
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.42	0.079	138.9	137.6	138.9	668	-4,665	-99	891	-3,872
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.26	0.079	109.5	318.3	109.5	668	5,017	-78	701	5,640

Neutral	#6 COPPER SOLID	KU, UTILITY	27.83	6.82	0.1620	0.42	0.079	138.9	137.6	138.9	668	-3,858	-2	737	-3,123
Neutral	#6 COPPER SOLID	KU, UTILITY	27.83	6.82	0.1620	0.26	0.079	109.5	318.3	109.5	668	4,149	2	580	4,730
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	26.83	6.89	0.2316	0.27	0.129	109.5	318.3	109.5	1,064	6,372	3	618	6,992
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.83	6.95	0.2316	0.27	0.129	109.5	318.3	109.5	1,064	6,134	3	595	6,732
Totals:											13,858	13	7,330	21,202	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.50	7.22	1.3300	1.95	0.337	138.9	137.6	139.0	925	-4,127	65	1,574	-2,488
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.50	7.22	1.3300	1.47	0.337	109.5	318.3	109.5	925	4,438	51	1,238	5,727
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.50	7.29	1.5000	2.29	0.900	138.9	137.6	139.0	2,000	-8,508	114	1,640	-6,753
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.50	7.29	1.5000	1.70	0.900	109.5	318.3	109.5	2,000	9,150	90	1,290	10,530
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.50	7.35	0.6570	1.94	0.190	138.9	137.6	138.9	750	-3,035	38	903	-2,095
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.50	7.35	0.6570	1.46	0.190	109.5	318.3	109.5	750	3,264	30	710	4,003
		COMMUNICATION													
Totals:											1,183	387	7,354	8,925	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.83	5.76	317.9	317.9	50.00	4.50	3.50	96.00	8	40	48	
Totals:											8	40	48

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.30	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.02	45.00	40.7	0.0	6.00	3.50	7.50	43	42	85
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.02	-45.00	235.2	0.0	6.00	3.50	7.50	-41	42	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.83	0.00	137.6	137.6	2.00	3.00	3.19	0	13	12

Spool	Spool Insulator - 25 kV	KU, UTILITY	27.83	0.00	318.3	318.3	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.83	0.00	318.3	318.3	2.00	3.00	3.19	0	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.83	0.00	318.3	318.3	2.00	3.00	3.19	0	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.50	0.00	47.9	317.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.50	0.00	47.9	317.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.50	0.00	47.9	317.9	5.00	3.00	0.00	6	0	6
Totals:										20	286	306

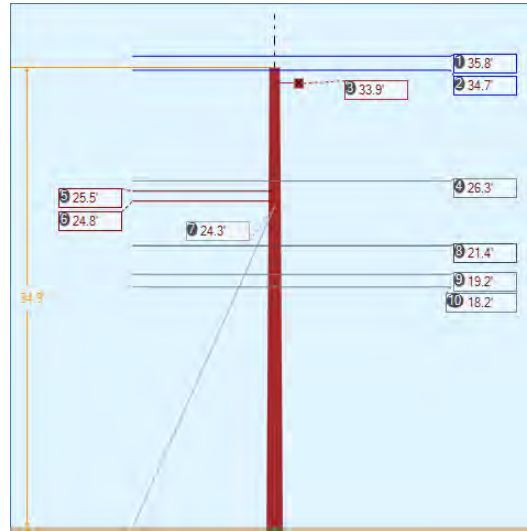
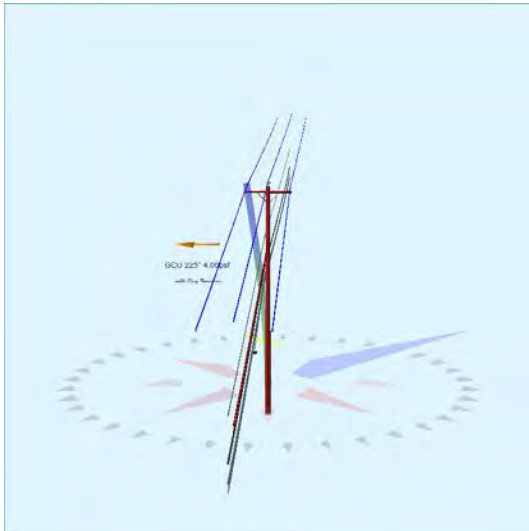
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	25.83	0.00	24.05	0.375	75.00	137.0	46.9	0.273	33.54	0.79

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,381	3,983	3,739	2,730	2,556	-381	-9,519
Totals:										2,730	2,556	-381	-9,519

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	24.05	137.0	20,000	1.00	20,000	3,983	3,739	19.9

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.04	33.59	11.19	12.37	7.96	12.17	1.60e+6	60.00	57.00	33.30	270,213	2725.90	37.04

Pole Num:	25W - 27220-126-01	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.12	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	38.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019123 Deg	Longitude:	-84.463429 Deg	Elevation:	882.454943563127		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.8	224.8
Groundline	25.8	224.8
Vertical	2.3	128.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	26,188	224.8
Groundline	26,188	224.8
GL Allowable	105,198	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.6	308.3		18.0	224.8	20.3	110.0
? EHS 3/8 (Down)			24.3	26.0	224.8	32.2	110.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 210.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	952	85.9	24,507	93.6	23.3	1,610	296	2	1,612	23.7
Comms	274	24.7	5,712	21.8	5.4	375	633	5	380	5.6
GuyBraces	-328	-29.6	-7,863	-30.0	-7.5	-516	4,000	33	-483	-7.1
Pole	200	18.1	3,503	13.4	3.3	230	2,275	19	249	3.7
Crossarms	2	0.1	40	0.2	0.0	3	95	1	3	0.1
Insulators	8	0.7	289	1.1	0.3	19	87	1	20	0.3
Pole Load	1,108	100.0	26,188	100.0	24.9	1,720	7,387	62	1,782	26.2
Pole Reserve Capacity			79,010		75.1	5,080			5,018	73.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 210.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	632	57.1	16,916	64.6	16.1	1,111	4,355	36	1,147	16.9
Unknown, COMMUNICATION	274	24.7	5,729	21.9	5.5	376	662	6	382	5.6
Pole	200	18.1	3,503	13.4	3.3	230	2,275	19	249	3.7
<Undefined>	2	0.1	40	0.2	0.0	3	95	1	3	0.1
Totals:	1,108	100.0	26,188	100.0	24.9	1,720	7,387	62	1,782	26.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.75	0.00	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	14,001	0	761	14,762
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.75	0.00	0.2316	0.44	0.129	138.9	317.6	138.9	1,064	-14,662	0	1,011	-13,650
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	13,579	-103	738	14,214
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.44	0.129	138.9	317.6	138.9	1,064	-14,220	-137	981	-13,376
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	13,579	95	738	14,412
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.44	0.129	138.9	317.6	138.9	1,064	-14,220	127	981	-13,112

Neutral	#6 COPPER SOLID	KU, UTILITY	26.27	7.02	0.1620	0.23	0.079	104.0	136.8	104.0	668	6,457	11	506	6,975
Neutral	#6 COPPER SOLID	KU, UTILITY	26.27	7.02	0.1620	0.42	0.079	138.9	317.6	138.9	668	-6,762	15	672	-6,075
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.51	7.07	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	9,985	5	543	10,532
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	24.75	7.12	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	9,690	5	527	10,221
Totals:											17,426	18	7,458	24,902	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.36	7.33	1.3300	1.38	0.337	104.0	136.8	104.0	925	7,271	48	1,137	8,456
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.36	7.33	1.3300	1.95	0.337	138.9	317.6	139.0	925	-7,614	64	1,511	-6,039
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.18	7.47	1.5000	1.60	0.900	104.0	136.8	104.1	2,000	14,116	85	1,116	15,317
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.18	7.47	1.5000	2.29	0.900	138.9	317.6	139.0	2,000	-14,782	114	1,483	-13,186
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.23	7.53	0.6570	1.37	0.190	104.0	136.8	104.0	750	5,030	28	613	5,672
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.23	7.53	0.6570	1.94	0.190	138.9	317.6	138.9	750	-5,268	37	815	-4,415
		COMMUNICATION													
Totals:											-1,247	376	6,676	5,805	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.86	5.79	317.2	317.2	50.00	4.50	3.50	96.00	-13	54	40	
Totals:											-13	54	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.88	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.05	45.00	39.9	0.0	6.00	3.50	7.50	-43	42	0
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.05	-45.00	234.5	0.0	6.00	3.50	7.50	39	42	82
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.27	0.00	227.2	317.2	2.00	3.00	3.19	2	12	14

Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	136.8	136.8	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.75	0.00	136.8	136.8	2.00	3.00	3.19	1	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.36	0.00	227.2	317.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.18	0.00	227.2	317.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.23	0.00	227.2	317.2	5.00	3.00	0.00	6	0	6
Totals:										17	276	293

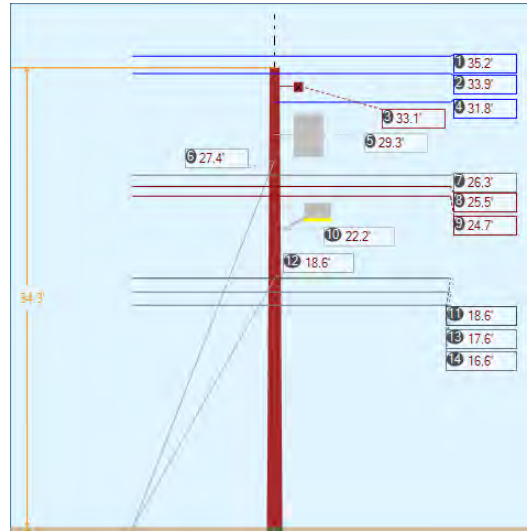
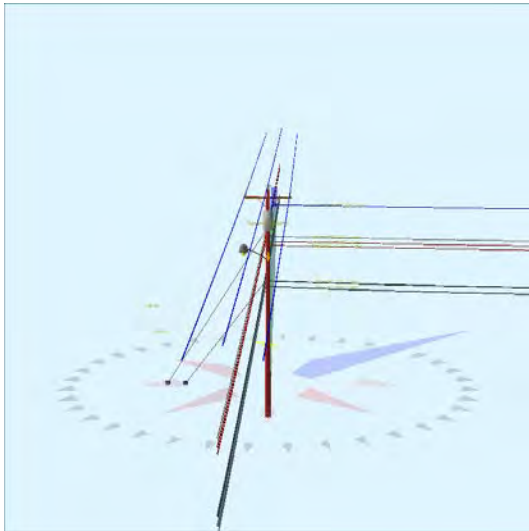
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.34	0.00	22.61	0.375	75.00	308.3	47.0	0.273	31.46	0.71

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,462	4,056	3,602	2,632	2,459	-341	-7,989
Totals:										2,632	2,459	-341	-7,989

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.61	308.3	20,000	1.00	20,000	4,056	3,602	20.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.12	33.39	11.43	12.20	7.96	12.37	1.60e+6	60.00	57.00	34.88	319,450	3211.55	43.48

Pole Num:	26W - 27220	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.12	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018899 Deg	Longitude:	-84.463208 Deg	Elevation:	878.83327047166		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.2	0.0
Groundline	27.2	0.0
Vertical	10.3	24.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,641	89.5
Groundline	20,641	89.5
GL Allowable	84,555	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.7	230.0		40.8	134.8	44.7	50.0
? EHS 3/8 (Down)			27.4	58.8	134.8	71.0	50.0
? Single Helix Anchor	14.5	230.0		21.5	134.8	23.1	50.0
? EHS 1/4 (Down)			18.6	71.9	134.8	85.0	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 89.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,746	234.2	66,613	322.7	78.8	8,196	450	4	8,201	120.6
Comms	3,011	188.3	35,162	170.4	41.6	4,327	846	8	4,335	63.7
GuyBraces	-5,365	-335.4	-84,573	-409.7	-100.0	-10,406	15,495	149	-10,257	-150.8
PowerEquipments	29	1.8	1,116	5.4	1.3	137	694	7	144	2.1
Pole	133	8.3	1,512	7.3	1.8	186	1,920	18	204	3.0
Crossarms	23	1.4	510	2.5	0.6	63	95	1	64	0.9
Streetlights	14	0.9	101	0.5	0.1	12	86	1	13	0.2
Insulators	9	0.6	200	1.0	0.2	25	123	1	26	0.4
Pole Load	1,600	100.0	20,641	100.0	24.4	2,540	19,709	190	2,730	40.1
Pole Reserve Capacity			63,914		75.6	4,260			4,070	59.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 89.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	439	27.5	7,811	37.8	9.2	961	11,656	112	1,073	15.8
Unknown, COMMUNICATION	1,003	62.7	10,755	52.1	12.7	1,323	6,032	58	1,381	20.3
Pole	133	8.3	1,512	7.3	1.8	186	1,920	18	204	3.0
<Undefined>	25	1.6	563	2.7	0.7	69	101	1	70	1.0
Totals:	1,600	100.0	20,641	100.0	24.4	2,540	19,709	190	2,730	40.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.19	0.00	0.2316	0.24	0.129	111.1	137.1	111.1	1,064	32,807	0	25	32,833
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.19	0.00	0.2316	0.21	0.129	104.0	316.8	104.0	1,064	-32,995	0	20	-32,975
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.88	45.33	0.2316	0.24	0.129	111.1	137.1	111.1	1,064	31,588	-72	24	31,540
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.88	45.33	0.2316	0.21	0.129	104.0	316.8	104.0	1,064	-31,769	-68	20	-31,817

Primary	#4 COPPER 7 STRAND	KU, UTILITY	33.88	45.33	0.2316	0.24	0.129	111.1	137.1	111.1	1,064	31,588	90	24	31,703
Primary	#4 COPPER 7 STRAND	KU, UTILITY	33.88	45.33	0.2316	0.21	0.129	104.0	316.8	104.0	1,064	-31,769	85	20	-31,665
Primary	#4 COPPER 7 STRAND	KU, UTILITY	31.75	20.95	0.2316	0.40	0.129	132.0	49.8	132.0	1,064	33,807	9	569	34,385
Neutral	#6 COPPER SOLID	KU, UTILITY	26.29	6.65	0.1620	0.22	0.079	111.1	137.1	111.1	668	15,384	-9	17	15,392
Neutral	#6 COPPER SOLID	KU, UTILITY	26.29	6.65	0.1620	0.19	0.079	104.0	316.8	104.0	668	-15,472	-8	14	-15,466
Neutral	#6 COPPER SOLID	KU, UTILITY	26.29	6.65	0.1620	0.38	0.079	132.0	49.8	132.0	668	17,575	11	426	18,011
Secondary	#4 COPPER SOLID	KU, UTILITY	25.45	6.70	0.2043	0.24	0.126	111.1	137.1	111.1	982	21,894	-12	17	21,900
Secondary	#4 COPPER SOLID	KU, UTILITY	25.45	6.70	0.2043	0.21	0.126	104.0	316.8	104.0	982	-22,019	-11	14	-22,016
Secondary	#4 COPPER SOLID	KU, UTILITY	25.45	6.70	0.2043	0.39	0.126	132.0	49.8	132.0	982	25,011	14	439	25,463
Secondary	#4 COPPER SOLID	KU, UTILITY	24.73	6.74	0.2043	0.24	0.126	111.1	137.1	111.1	982	21,276	-12	17	21,281
Secondary	#4 COPPER SOLID	KU, UTILITY	24.73	6.74	0.2043	0.21	0.126	104.0	316.8	104.0	982	-21,398	-11	14	-21,395
Secondary	#4 COPPER SOLID	KU, UTILITY	24.73	6.74	0.2043	0.39	0.126	132.0	49.8	132.0	982	24,303	14	426	24,743
Totals:											99,811	20	2,086	101,916	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.59	7.12	1.3300	1.48	0.337	111.1	137.1	111.1	925	15,064	-38	33	15,059
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	18.59	7.12	1.3300	1.37	0.337	104.0	316.8	104.0	925	-15,151	-36	27	-15,160
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	18.59	7.12	1.3300	1.83	0.337	132.0	49.8	132.0	925	17,209	45	833	18,087
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.58	7.18	1.5000	1.72	0.900	111.1	137.1	111.1	2,000	30,805	-67	34	30,772
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.58	7.18	1.5000	1.59	0.900	104.0	316.8	104.1	2,000	-30,982	-63	28	-31,017
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.58	7.18	1.5000	2.14	0.900	132.0	49.8	132.0	2,000	35,186	80	861	36,127
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.58	7.24	0.6570	1.42	0.190	111.1	137.1	111.1	750	10,895	-22	19	10,891
	COMMUNICATION														

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.58	7.24	0.6570	1.31	0.190	104.0	316.8	104.0	750	-10,957	-21	15	-10,963
Totals:												52,070	-122	1,850	53,798

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA KU, UTILITY	29.28	20.97	135.0	135.0	365.00	39.00	--	22.00	--	849	859	1,708	
Totals:												849	859	1,708

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	33.07	5.49	136.9	136.9	50.00	4.50	3.50	96.00	29	752	781		
Totals:												29	752	781

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm KU, UTILITY	22.22	4.40	220.0	220.0	45.00	24.00	20.00	3.00	36.00	-156	310	154	
Totals:												-156	310	154

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV KU, UTILITY	34.32	0.00	0.0	0.0	13.00	9.00	10.50	0	112	112
Pin	Pin Insulator - 5 kV KU, UTILITY	33.26	45.00	220.0	0.0	6.00	3.50	7.50	-28	30	2
Pin	Pin Insulator - 5 kV KU, UTILITY	33.26	-45.00	53.9	0.0	6.00	3.50	7.50	35	30	65
Deadend	Deadend 17.13"	31.75	0.00	49.8	49.8	3.00	3.90	17.13	8	73	80
Spool	Spool Insulator - 25 kV KU, UTILITY	26.29	0.00	226.9	136.9	2.00	3.00	3.19	-2	9	7
Spool	Spool Insulator - 25 kV KU, UTILITY	26.29	0.00	46.9	136.9	2.00	3.00	3.19	2	9	10
Spool	Spool Insulator - 25 kV KU, UTILITY	25.45	0.00	226.9	136.9	2.00	3.00	3.19	-2	8	7
Spool	Spool Insulator - 25 kV KU, UTILITY	25.45	0.00	46.9	136.9	2.00	3.00	3.19	2	8	10
Spool	Spool Insulator - 25 kV KU, UTILITY	24.73	0.00	226.9	136.9	2.00	3.00	3.19	-2	8	7
Spool	Spool Insulator - 25 kV KU, UTILITY	24.73	0.00	46.9	136.9	2.00	3.00	3.19	2	8	10
Bolt	Three Bolt Unknown, COMMUNICATION	18.59	0.00	226.9	136.9	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt Unknown, COMMUNICATION	18.59	0.00	46.9	136.9	5.00	3.00	0.00	4	0	4

Bolt	Three Bolt	Unknown, COMMUNICATION	17.58	0.00	226.9	136.9	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	17.58	0.00	46.9	136.9	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	16.58	0.00	226.9	136.9	5.00	3.00	0.00	-4	0	-4
Totals:										10	295	305

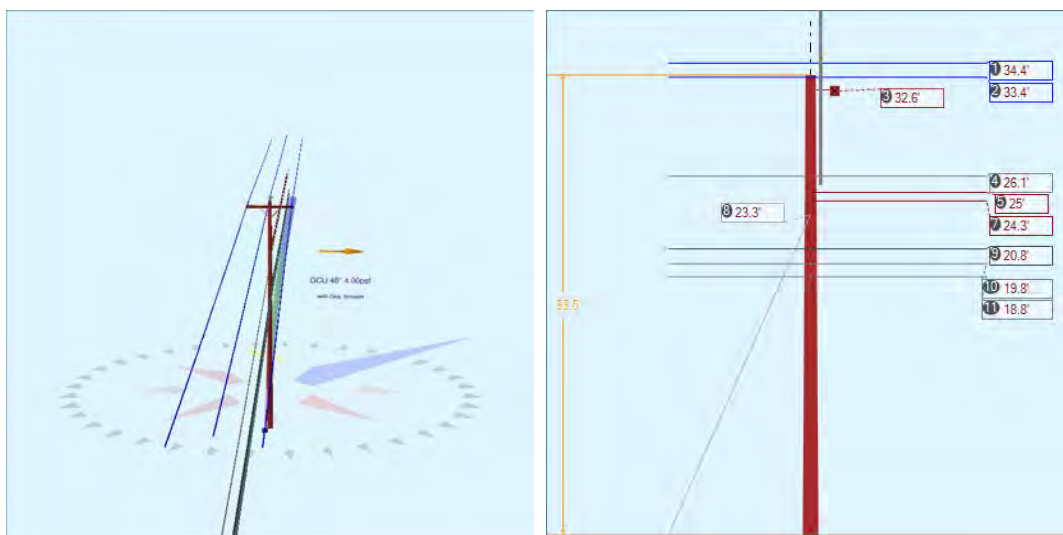
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	27.42	0.00	17.65	0.375	75.00	230.0	57.0	0.273	30.93	1.59
EHS 1/4	Down	Unknown, COMMUNICATION	18.59	0.00	14.53	0.25	75.00	230.0	51.8	0.121	21.86	1.33

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,840	8,945	8,157	6,843	4,439	-3,427	-92,057
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,090	4,627	4,301	3,381	2,659	-2,053	-37,338
Totals:										10,224	7,098	-5,480	-129,395

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	17.65	230.0	20,000	1.00	20,000	8,945	8,157	44.7
Single Helix Anchor			18.00	14.53	230.0	20,000	1.00	20,000	4,627	4,301	23.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.13	33.83	10.50	20.47	7.32	11.50	1.60e+6	60.00	57.00	34.32	191,405	1913.48	9.71

Pole Num:	27W - 27220-125-02	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.47	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018674 Deg	Longitude:	-84.462946 Deg	Elevation:	879.80496510437		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.3	0.0
Groundline	26.3	0.0
Vertical	2.9	21.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,883	42.7
Groundline	20,883	42.7
GL Allowable	82,455	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.4	137.0		18.1	47.7	19.4	310.0
? EHS 3/8 (Down)			23.3	26.1	47.7	30.8	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 42.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	470	52.3	13,160	63.0	16.0	1,097	299	3	1,100	16.2
Comms	380	42.3	7,860	37.6	9.5	655	638	6	662	9.7
GuyBraces	-177	-19.7	-4,082	-19.6	-5.0	-340	3,956	39	-302	-4.4
Pole	182	20.3	3,081	14.8	3.7	257	1,856	18	275	4.0
Crossarms	1	0.1	41	0.2	0.1	4	95	1	4	0.1
Risers	33	3.7	532	2.6	0.7	44	47	0	45	0.7
Insulators	9	0.9	290	1.4	0.4	24	87	1	25	0.4
Pole Load	898	100.0	20,883	100.0	25.3	1,741	6,978	68	1,810	26.6
Pole Reserve Capacity			61,572		74.7	5,059			4,990	73.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 42.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	335	37.3	9,884	47.3	12.0	824	4,361	43	867	12.7
Unknown, COMMUNICATION	380	42.3	7,877	37.7	9.6	657	667	7	663	9.8
Pole	182	20.3	3,081	14.8	3.7	257	1,856	18	275	4.0
<Undefined>	1	0.1	41	0.2	0.1	4	95	1	4	0.1
Totals:	898	100.0	20,883	100.0	25.3	1,741	6,978	68	1,810	26.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.40	0.00	0.2316	0.41	0.129	133.8	136.8	133.8	1,064	-3,382	0	980	-2,402
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.40	0.00	0.2316	0.28	0.129	111.1	317.1	111.1	1,064	3,630	0	813	4,443
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.37	45.33	0.2316	0.41	0.129	133.8	136.8	133.8	1,064	-3,280	134	950	-2,196
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.37	45.33	0.2316	0.28	0.129	111.1	317.1	111.1	1,064	3,521	111	789	4,421
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.37	45.33	0.2316	0.41	0.129	133.8	136.8	133.8	1,064	-3,280	-131	950	-2,461

Primary	#4 COPPER 7 STRAND	KU, UTILITY	33.37	45.33	0.2316	0.28	0.129	111.1	317.1	111.1	1,064	3,521	-109	789	4,201
Neutral	#6 COPPER SOLID	KU, UTILITY	26.15	6.61	0.1620	0.39	0.079	133.8	136.8	133.8	668	-1,613	14	673	-925
Neutral	#6 COPPER SOLID	KU, UTILITY	26.15	6.61	0.1620	0.27	0.079	111.1	317.1	111.1	668	1,732	12	559	2,303
Secondary	#4 COPPER SOLID	KU, UTILITY	24.96	6.68	0.2043	0.28	0.126	111.1	317.1	111.1	982	2,430	1	568	2,999
Secondary	#4 COPPER SOLID	KU, UTILITY	24.33	6.72	0.2043	0.28	0.126	111.1	317.1	111.1	982	2,369	1	554	2,924
Totals:											5,648	33	7,625	13,306	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.85	6.93	1.3300	1.86	0.337	133.8	136.8	133.8	925	-1,781	61	1,485	-236
CATV	CATV 1.0	Unknown, COMMUNICATION	20.85	6.93	1.3300	1.49	0.337	111.1	317.1	111.1	925	1,912	50	1,233	3,195
Telco	TELE 1.5	Unknown, COMMUNICATION	19.76	7.00	1.5000	2.18	0.900	133.8	136.8	133.8	2,000	-3,649	107	1,537	-2,005
Telco	TELE 1.5	Unknown, COMMUNICATION	19.76	7.00	1.5000	1.73	0.900	111.1	317.1	111.1	2,000	3,917	89	1,276	5,283
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.82	7.06	0.6570	1.85	0.190	133.8	136.8	133.8	750	-1,303	35	847	-421
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.82	7.06	0.6570	1.48	0.190	111.1	317.1	111.1	750	1,399	29	703	2,132
Totals:											495	371	7,081	7,947	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.55	5.47	316.9	316.9	50.00	4.50	3.50	96.00	3	39	42	
Totals:											3	39	42

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 160.0°	Riser	KU, UTILITY	24.62	5.85	160.0	160.0	24.62	295.48	2.50	2.50	295.48	-5	543	538
Totals:											-5	543	538	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	33.53	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.74	45.00	40.0	0.0	6.00	3.50	7.50	43	42	85
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.74	-45.00	233.9	0.0	6.00	3.50	7.50	-42	42	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.15	0.00	46.9	316.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.96	0.00	317.1	317.1	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.33	0.00	317.1	317.1	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.85	0.00	46.9	316.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.76	0.00	46.9	316.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.82	0.00	46.9	316.9	5.00	3.00	0.00	6	0	6
Totals:										20	274	294

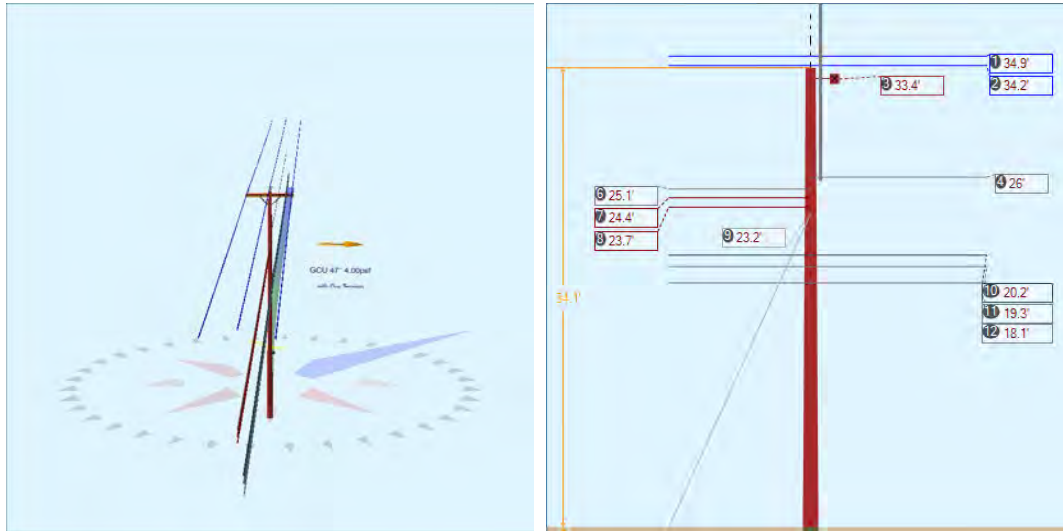
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Down	KU, UTILITY	23.34	0.00	22.37	0.375	75.00	137.0	46.1	0.273	30.58	0.70

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	4,269	3,881	3,616	2,604	2,509	-187	-4,127	
Totals:										2,604	2,509	-187	-4,127

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.37	137.0	20,000	1.00	20,000	3,881	3,616	19.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.63	33.46	10.52	11.68	7.32	11.41	1.60e+6	60.00	57.00	33.53	239,617	2406.36	34.48

Pole Num:	28W- 27290-126-01	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018412 Deg	Longitude:	-84.462610 Deg	Elevation:	876.446676002687		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.7	47.0
Groundline	23.7	47.0
Vertical	3.0	136.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,067	47.0
Groundline	19,067	47.0
GL Allowable	83,849	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.3	316.0		17.2	47.0	19.3	130.0
? EHS 3/8 (Down)			23.2	24.8	47.0	30.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 54.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	605	72.1	15,846	83.1	18.9	1,312	289	3	1,315	19.3
Comms	351	41.8	7,006	36.8	8.4	580	620	6	586	8.6
GuyBraces	-351	-41.8	-7,976	-41.8	-9.5	-660	3,755	36	-624	-9.2
Pole	185	22.0	3,139	16.5	3.7	260	1,898	18	278	4.1
Crossarms	4	0.4	116	0.6	0.1	10	285	3	12	0.2
Risers	34	4.0	553	2.9	0.7	46	48	0	46	0.7
Insulators	12	1.4	383	2.0	0.5	32	114	1	33	0.5
Pole Load	839	100.0	19,067	100.0	22.7	1,579	7,009	68	1,647	24.2
Pole Reserve Capacity			64,782		77.3	5,221			5,153	75.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 54.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	300	35.7	8,790	46.1	10.5	728	4,177	40	768	11.3
Unknown, COMMUNICATION	351	41.8	7,023	36.8	8.4	582	649	6	588	8.6
Pole	185	22.0	3,139	16.5	3.7	260	1,898	18	278	4.1
<Undefined>	4	0.4	116	0.6	0.1	10	285	3	12	0.2
Totals:	839	100.0	19,067	100.0	22.7	1,579	7,009	68	1,647	24.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.93	0.00	0.2316	0.25	0.129	104.1	136.7	104.1	1,064	6,775	0	769	7,543
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.93	0.00	0.2316	0.41	0.129	133.8	316.8	133.8	1,064	-6,691	0	988	-5,703
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.23	45.33	0.2316	0.25	0.129	104.1	136.7	104.1	1,064	6,639	-101	753	7,292
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.23	45.33	0.2316	0.25	0.129	104.1	136.7	104.1	1,064	6,639	104	753	7,497
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.23	45.33	0.2316	0.41	0.129	133.8	316.8	133.8	1,064	-6,558	129	968	-5,460

Primary	#4 COPPER 7 STRAND	KU, UTILITY	34.23	45.33	0.2316	0.41	0.129	133.8	316.8	133.8	1,064	-6,558	-134	968	-5,723
Neutral	#6 COPPER SOLID	KU, UTILITY	25.96	6.65	0.1620	0.39	0.079	133.8	316.8	133.8	668	-3,121	-2	664	-2,459
Neutral	#6 COPPER SOLID	KU, UTILITY	25.08	6.71	0.1620	0.24	0.079	104.1	136.7	104.1	668	3,053	2	499	3,554
Secondary	#4 COPPER SOLID	KU, UTILITY	24.42	6.75	0.2043	0.24	0.126	104.1	136.7	104.1	982	4,370	2	517	4,889
Secondary	#4 COPPER SOLID	KU, UTILITY	23.72	6.79	0.2043	0.24	0.126	104.1	136.7	104.1	982	4,245	2	502	4,750
Totals:											8,795	3	7,381	16,178	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.19	7.00	1.3300	1.39	0.337	104.1	136.7	104.1	925	3,403	47	1,111	4,561
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.19	7.00	1.3300	1.86	0.337	133.8	316.8	133.8	925	-3,361	61	1,427	-1,873
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.32	7.06	1.5000	1.61	0.900	104.1	136.7	104.1	2,000	7,043	83	1,162	8,288
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.32	7.06	1.5000	2.18	0.900	133.8	316.8	133.8	2,000	-6,956	107	1,493	-5,356
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.11	7.13	0.6570	1.37	0.190	104.1	136.7	104.1	750	2,475	27	630	3,132
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.11	7.13	0.6570	1.85	0.190	133.8	316.8	133.8	750	-2,444	35	809	-1,600
		COMMUNICATION													
Totals:											159	361	6,633	7,153	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.42	5.45	136.7	136.7	50.00	4.50	3.50	96.00	0	83	83	
Normal	Crossarm	33.42	5.45	316.8	316.8	50.00	4.50	3.50	96.00	-6	41	35	
Totals:											-6	124	118

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 340.0°	Riser	25.17	5.85	340.0	340.0	25.17	301.98	2.50	2.50	301.98	3	562	565
Totals:											3	562	565

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.05	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	45.00	219.8	0.0	6.00	3.50	7.50	-42	43	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	-45.00	53.6	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	45.00	39.9	0.0	6.00	3.50	7.50	42	43	84
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	-45.00	233.7	0.0	6.00	3.50	7.50	-43	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.96	0.00	316.8	316.8	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.08	0.00	136.7	136.7	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.42	0.00	136.7	136.7	2.00	3.00	3.19	0	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.72	0.00	136.7	136.7	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.19	0.00	46.7	316.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.32	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.11	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Totals:										17	373	391

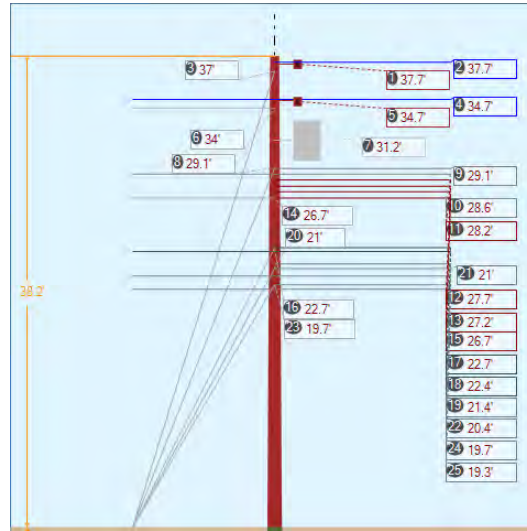
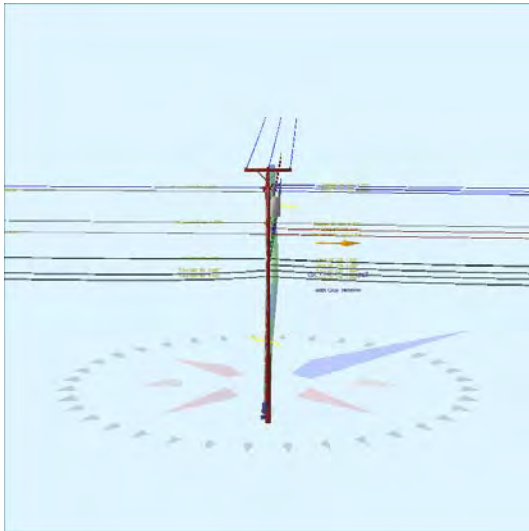
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	23.23	0.00	22.26	0.375	75.00	316.0	46.1	0.273	30.43	0.66

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,234	3,849	3,431	2,471	2,381	-362	-8,143
Totals:										2,471	2,381	-362	-8,143

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.26	316.0	20,000	1.00	20,000	3,849	3,431	19.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.96	33.50	10.57	11.80	7.32	11.47	1.60e+6	60.00	57.00	34.05	236,815	2336.41	33.33

Pole Num:	33W - 27290-126	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.80	Construction Grade:	B	Pole Strength Factor:	0.65
Aux Data 3	Unset	G/L Circumference (in):	37.20	Loading District:	Medium	Transverse Wind LF:	2.50
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.65
Aux Data 5	Unset	Allowable Stress (psi):	5,200	Wind Speed (mph):	39.53	Vertical LF:	1.50
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018200 Deg	Longitude:	-84.462379 Deg	Elevation:	877.241137897575		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.0	43.4
Groundline	43.0	11.2
Vertical	38.1	331.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,774	43.4
Groundline	19,774	11.2
GL Allowable	70,654	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.0	137.0		71.6	43.4	75.8	320.0
? EHS 3/8 (Down)			37.0	69.8	43.4	120.7	320.0
? EHS 3/8 (Down)			29.1	59.6	43.4	105.3	320.0
? Single Helix Anchor	65.9	228.0		26.6	43.4	26.6	45.9
? EHS 3/8 (Span/Head)			34.0	14.3	43.4	23.6	46.9
? EHS 3/8 (Span/Head)			26.7	24.1	43.4	39.7	44.8
? Single Helix Anchor	16.0	137.0		16.9	43.4	18.4	320.0
? EHS 1/4 (Down)			22.7	56.5	43.4	101.6	320.0
? Single Helix Anchor	14.0	137.0		16.2	43.4	17.7	320.0
? EHS 1/4 (Down)			21.0	54.0	43.4	97.8	320.0
? Single Helix Anchor	12.0	137.0		15.3	43.4	16.9	320.0
? EHS 1/4 (Down)			19.7	51.1	43.4	92.9	320.0
System Capacity Summary:				Adequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 15.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	7,209	367.8	127,810	646.4	180.9	17,302	311	3	17,304	332.8
Comms	6,027	307.5	69,746	352.7	98.7	9,441	901	8	9,450	181.7
GuyBraces	-11,717	-597.8	-184,275	-931.9	-260.8	-24,945	35,645	324	-24,622	-473.5
PowerEquipments	53	2.7	1,401	7.1	2.0	190	548	5	195	3.7
Pole	271	13.8	2,827	14.3	4.0	383	1,754	16	399	7.7
Crossarms	86	4.4	1,636	8.3	2.3	222	300	3	224	4.3
Insulators	32	1.6	630	3.2	0.9	85	128	1	86	1.7
Pole Load	1,960	100.0	19,774	100.0	28.0	2,677	39,586	359	3,036	58.4
Pole Reserve Capacity			50,880		72.0	2,523			2,164	41.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 15.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-1,742	-88.9	-23,513	-118.9	-33.3	-3,183	24,346	221	-2,962	-57.0
Unknown, COMMUNICATION	3,345	170.6	38,824	196.3	55.0	5,256	13,186	120	5,375	103.4
Pole	271	13.8	2,827	14.3	4.0	383	1,754	16	399	7.7
<Undefined>	86	4.4	1,636	8.3	2.3	222	300	3	224	4.3
Totals:	1,960	100.0	19,774	100.0	28.0	2,677	39,586	359	3,036	58.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	37.70	50.34	0.2316	0.25	0.129	104.1	316.7	104.1	1,064	33,855	7	1,027	34,888
Primary	#4 COPPER 7 STRAND KU, UTILITY	37.70	50.34	0.2316	0.25	0.129	104.1	316.7	104.1	1,064	33,855	-4	1,027	34,878
Primary	#4 COPPER 7 STRAND KU, UTILITY	37.70	22.57	0.2316	0.25	0.129	104.1	316.7	104.1	1,064	33,855	3	1,027	34,885
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.68	16.62	0.3980	0.06	0.145	65.9	228.0	65.9	2,128	-103,192	-5	37	-103,160
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	22.75	0.2316	0.33	0.129	130.0	48.8	130.0	1,064	51,136	7	71	51,214
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	50.42	0.2316	0.33	0.129	130.0	48.8	130.0	1,064	51,136	-1	71	51,206
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	50.42	0.2316	0.33	0.129	130.0	48.8	130.0	1,064	51,136	8	71	51,215
Neutral	#6 COPPER SOLID KU, UTILITY	28.64	6.73	0.1620	0.30	0.079	130.0	48.8	130.0	668	26,516	10	53	26,578
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.64	6.73	0.3980	0.06	0.145	65.9	228.0	65.9	2,128	-85,223	-8	30	-85,200
Neutral	#6 COPPER SOLID KU, UTILITY	29.08	6.70	0.1620	0.24	0.079	104.1	316.7	104.1	668	16,395	4	716	17,116
Secondary	#4 COPPER SOLID KU, UTILITY	27.66	6.78	0.2043	0.33	0.126	130.0	48.8	130.0	982	37,646	13	54	37,713
Secondary	#4 COPPER SOLID KU, UTILITY	28.16	6.75	0.2043	0.24	0.126	104.1	316.7	104.1	982	23,339	6	738	24,083
Secondary	#4 COPPER SOLID KU, UTILITY	26.70	6.84	0.2043	0.33	0.126	130.0	48.8	130.0	982	36,337	13	52	36,402
Secondary	#4 COPPER SOLID KU, UTILITY	27.20	6.81	0.2043	0.24	0.126	104.1	316.7	104.1	982	22,544	6	713	23,262
Totals:										229,335	59	5,686	235,080	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.67	7.08	1.3300	1.39	0.337	104.1	316.7	104.1	925	17,696	20	1,543	19,259
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.36	7.10	1.3300	1.78	0.337	130.0	48.8	130.0	925	28,670	40	114	28,825
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.36	7.10	1.3300	0.83	0.337	65.9	228.0	65.9	925	-28,926	-21	48	-28,898
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.36	7.16	1.5000	2.09	0.900	130.0	48.8	130.0	2,000	59,200	71	119	59,389
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.97	7.18	1.5000	1.61	0.900	104.1	316.7	104.1	2,000	35,393	34	1,561	36,988
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.36	7.22	1.5000	2.09	0.900	130.0	48.8	130.0	2,000	56,444	71	113	56,629
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.36	7.22	1.5000	0.95	0.900	65.9	228.0	65.9	2,000	-56,938	-36	48	-56,926
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.67	7.26	0.6570	1.37	0.190	104.1	316.7	104.1	750	12,449	11	847	13,307
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.31	7.28	1.5000	2.09	0.900	130.0	48.8	130.0	2,000	53,524	72	108	53,704
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.31	7.28	1.5000	0.95	0.900	65.9	228.0	65.9	2,000	-54,002	-36	46	-53,993
		COMMUNICATION													
Totals:											123,510	226	4,547	128,283	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	31.24	21.07	360.0	360.0	365.00	39.00	--	22.00	--	925	1,652	2,576
Totals:											925	1,652	2,576	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	37.70	5.44	316.7	316.7	50.00	4.50	3.50	96.00	0	220	220	
Normal	Crossarm	34.68	5.62	48.8	48.8	50.00	4.50	3.50	96.00	0	2,790	2,790	
Totals:											0	3,009	3,009

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend 17.13"	KU, UTILITY	37.70	45.00	39.8	0.0	3.00	3.90	17.13	19	155	174
Deadend	Deadend 17.13"	KU, UTILITY	37.70	-45.00	233.6	0.0	3.00	3.90	17.13	-10	155	145
Deadend	Deadend 17.13"	KU, UTILITY	37.70	0.00	316.7	0.0	3.00	3.90	17.13	4	155	160
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.68	0.00	228.0	228.0	3.00	3.80	12.75	-5	104	98
Deadend	Deadend 17.13"	KU, UTILITY	34.68	0.00	48.8	0.0	3.00	3.90	17.13	7	143	150
Deadend	Deadend 17.13"	KU, UTILITY	34.68	45.00	131.7	0.0	3.00	3.90	17.13	-2	143	141
Deadend	Deadend 17.13"	KU, UTILITY	34.68	-45.00	325.9	0.0	3.00	3.90	17.13	16	143	159
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.64	0.00	45.8	45.8	2.00	3.00	3.19	1	17	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.64	0.00	228.0	228.0	2.00	3.00	3.19	-1	17	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.08	0.00	315.8	45.8	2.00	3.00	3.19	1	17	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.66	0.00	45.8	45.8	2.00	3.00	3.19	1	16	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.16	0.00	315.8	45.8	2.00	3.00	3.19	1	17	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.70	0.00	45.8	45.8	2.00	3.00	3.19	1	16	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.20	0.00	315.8	45.8	2.00	3.00	3.19	1	16	17
Bolt	Single Bolt	Unknown, COMMUNICATION	22.67	0.00	316.7	316.7	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	22.36	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	22.36	0.00	228.0	318.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	21.36	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	20.97	0.00	316.7	316.7	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	20.36	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.36	0.00	228.8	138.8	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	19.67	0.00	316.7	316.7	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	19.31	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	19.31	0.00	228.8	138.8	5.00	3.00	0.00	-4	0	-4
Totals:										45	1,113	1,159

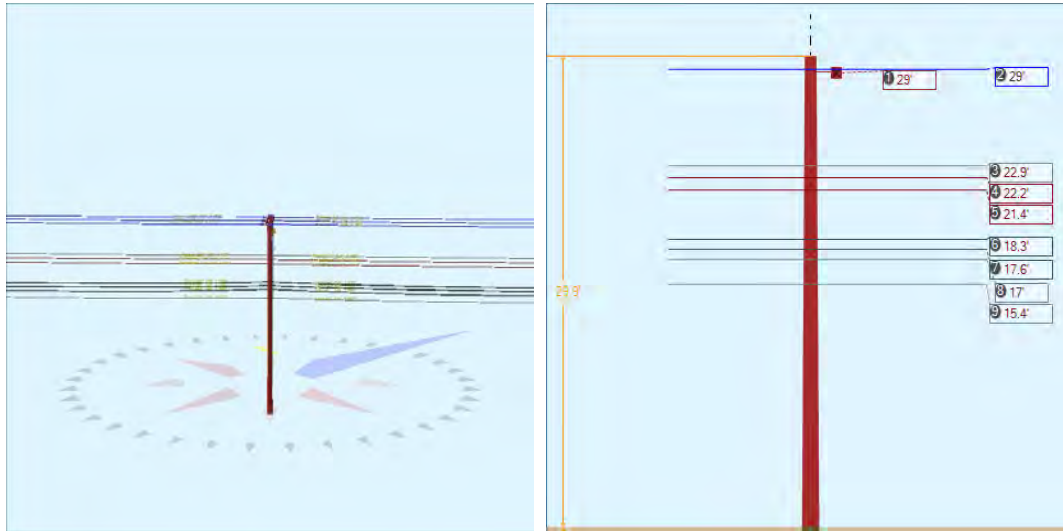
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	36.96	0.00	19.00	0.375	75.00	137.0	62.6	0.273	39.92	2.43
EHS 3/8	Down	KU, UTILITY	29.14	0.00	19.00	0.375	75.00	137.0	56.7	0.273	33.10	1.72
EHS 3/8	Span/Head	KU, UTILITY	34.00	34.00	65.88	0.375	75.00	228.0	0.0	0.273	64.05	0.80
EHS 3/8	Span/Head	KU, UTILITY	26.70	26.70	65.88	0.375	75.00	228.0	0.0	0.273	64.02	1.35
EHS 1/4	Down	Unknown, COMMUNICATION	22.67	0.00	16.00	0.25	75.00	137.0	54.6	0.121	26.03	1.25
EHS 1/4	Down	Unknown, COMMUNICATION	20.97	0.00	14.00	0.25	75.00	137.0	56.1	0.121	23.50	1.08
EHS 1/4	Down	Unknown, COMMUNICATION	19.67	0.00	12.00	0.25	75.00	137.0	58.4	0.121	21.34	0.93

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	16,732	10,141	9,674	8,586	4,456	-2,299	-82,807
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	14,590	8,843	8,257	6,901	4,534	-2,340	-66,636
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	3,269	1,981	1,981	0	1,981	-1,679	-57,087
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,507	3,337	3,337	0	3,337	-2,828	-75,522
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	6,083	3,687	3,380	2,755	1,958	-1,010	-22,287
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,852	3,547	3,233	2,683	1,804	-931	-18,924
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,563	3,372	3,059	2,606	1,603	-827	-15,674
Totals:									23,531	19,674	-11,914	-338,937	

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	19.00	137.0	25,000	1.00	25,000	18,958	17,907	75.8
Single Helix Anchor		18.00	65.88	228.0	20,000	1.00	20,000	5,319	5,318	26.6
Single Helix Anchor		18.00	16.00	137.0	20,000	1.00	20,000	3,687	3,380	18.4
Single Helix Anchor		18.00	14.00	137.0	20,000	1.00	20,000	3,547	3,233	17.7
Single Helix Anchor		18.00	12.00	137.0	20,000	1.00	20,000	3,372	3,059	16.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.42	34.41	10.64	34.13	7.32	11.85	1.60e+6	60.00	57.00	38.20	103,792	1039.01	2.62

Pole Num:	34W - NT	Pole Length / Class:	35 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.14	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.33	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018418 Deg	Longitude:	-84.462053 Deg	Elevation:	877.215079571299		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.9	0.0
Groundline	35.9	0.0
Vertical	7.7	17.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,730	317.8
Groundline	25,730	317.8
GL Allowable	72,572	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 317.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	429	34.3	10,962	42.6	15.1	1,029	328	3	1,032	15.2
Comms	631	50.5	11,339	44.1	15.6	1,064	859	9	1,073	15.8
Pole	159	12.7	2,478	9.6	3.4	233	1,566	17	249	3.7
Crossarms	3	0.2	71	0.3	0.1	7	190	2	9	0.1
Insulators	30	2.4	879	3.4	1.2	83	118	1	84	1.2
Pole Load	1,251	100.0	25,730	100.0	35.5	2,415	3,060	33	2,447	36.0
Pole Reserve Capacity			46,842		64.5	4,386			4,353	64.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 317.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	458	36.6	11,820	45.9	16.3	1,109	407	4	1,113	16.4
Unknown, COMMUNICATION	631	50.5	11,361	44.2	15.7	1,066	897	10	1,076	15.8
Pole	159	12.7	2,478	9.6	3.4	233	1,566	17	249	3.7
<Undefined>	3	0.2	71	0.3	0.1	7	190	2	9	0.1
Totals:	1,251	100.0	25,730	100.0	35.5	2,415	3,060	33	2,447	36.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#6 COPPER SOLID	KU, UTILITY	29.02	7.29	0.1620	0.33	0.079	124.1	47.2	124.1	668	189	0	695 885
Primary	#6 COPPER SOLID	KU, UTILITY	29.02	45.76	0.1620	0.33	0.079	124.1	47.2	124.1	668	189	7	695 892
Primary	#6 COPPER SOLID	KU, UTILITY	29.02	45.41	0.1620	0.33	0.079	124.1	47.2	124.1	668	189	-7	695 877
Primary	#6 COPPER SOLID	KU, UTILITY	29.02	18.21	0.1620	0.36	0.079	129.0	228.8	129.0	668	352	0	723 1,075
Primary	#6 COPPER SOLID	KU, UTILITY	29.02	48.71	0.1620	0.36	0.079	129.0	228.8	129.0	668	352	7	723 1,082
Primary	#6 COPPER SOLID	KU, UTILITY	29.02	48.38	0.1620	0.36	0.079	129.0	228.8	129.0	668	352	-7	723 1,067
Neutral	#6 COPPER SOLID	KU, UTILITY	22.91	6.58	0.1620	0.33	0.079	124.1	47.2	124.1	668	150	13	549 712

Neutral	#6 COPPER SOLID	KU, UTILITY	22.91	6.58	0.1620	0.36	0.079	129.0	228.8	129.0	668	278	14	570	862
Secondary	#4 COPPER SOLID	KU, UTILITY	22.16	6.63	0.2043	0.35	0.126	124.1	47.2	124.1	982	213	17	565	795
Secondary	#4 COPPER SOLID	KU, UTILITY	22.16	6.63	0.2043	0.37	0.126	129.0	228.8	129.0	982	395	18	587	1,000
Secondary	#4 COPPER SOLID	KU, UTILITY	21.37	6.67	0.2043	0.35	0.126	124.1	47.2	124.1	982	205	18	545	767
Secondary	#4 COPPER SOLID	KU, UTILITY	21.37	6.67	0.2043	0.37	0.126	129.0	228.8	129.0	982	381	18	566	965
Totals:											3,245	99	7,634	10,978	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.25	6.86	1.3300	1.70	0.337	124.1	47.2	124.1	925	165	56	1,208	1,429
CATV	CATV 1.0	Unknown, COMMUNICATION	18.25	6.86	1.3300	1.78	0.337	129.0	228.8	129.0	925	306	58	1,256	1,621
CATV	CATV 1.0	Unknown, COMMUNICATION	17.62	6.90	1.3300	1.70	0.337	124.1	47.2	124.1	925	159	56	1,167	1,382
CATV	CATV 1.0	Unknown, COMMUNICATION	17.62	6.90	1.3300	1.78	0.337	129.0	228.8	129.0	925	296	58	1,213	1,567
Telco	TELE 1.5	Unknown, COMMUNICATION	16.98	6.94	1.5000	1.98	0.900	124.1	47.2	124.1	2,000	332	98	1,228	1,658
Telco	TELE 1.5	Unknown, COMMUNICATION	16.98	6.94	1.5000	2.08	0.900	129.0	228.8	129.0	2,000	616	102	1,277	1,995
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.40	7.03	0.6570	1.69	0.190	124.1	47.2	124.1	750	113	33	644	790
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.40	7.03	0.6570	1.77	0.190	129.0	228.8	129.0	750	210	34	670	913
Totals:											2,197	495	8,663	11,356	

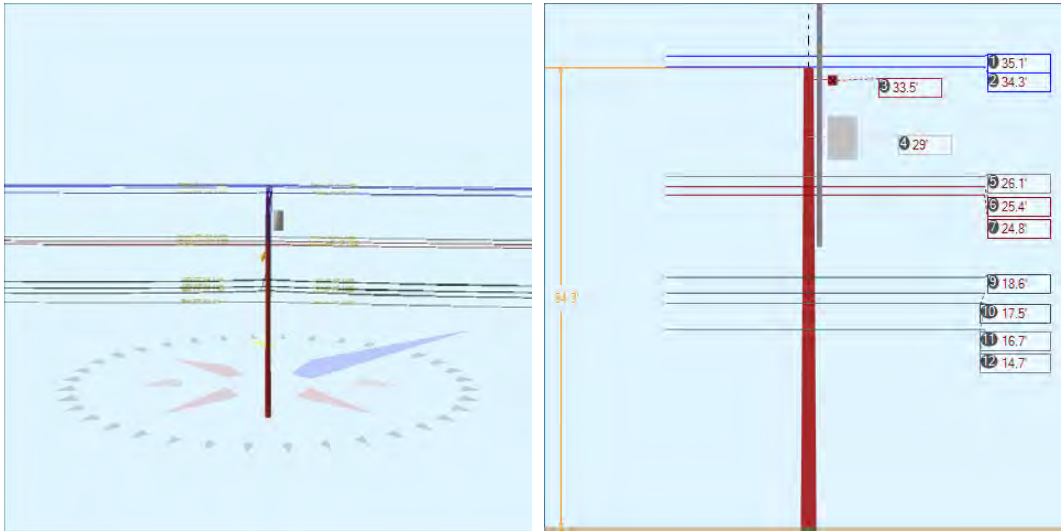
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	29.02	5.46	228.0	228.0	50.00	4.50	3.50	96.00	0	71	71	
Totals:											0	71	71

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	0.00	228.0	-180.8	3.00	3.80	12.75	0	137	137
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	45.00	311.1	-180.8	3.00	3.80	12.75	43	137	180
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	-45.00	144.9	-180.8	3.00	3.80	12.75	-43	137	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	0.00	228.0	0.8	3.00	3.80	12.75	0	137	137
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	45.00	311.1	0.8	3.00	3.80	12.75	43	137	180
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	-45.00	144.9	0.8	3.00	3.80	12.75	-43	137	94
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.91	0.00	318.0	228.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.16	0.00	318.0	228.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.37	0.00	318.0	228.0	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	18.25	0.00	318.0	228.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	318.0	228.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.98	0.00	318.0	228.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	15.40	0.00	318.0	228.0	5.00	3.00	0.00	6	0	6
Totals:										29	851	881

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.77	32.95	10.22	12.09	7.32	10.93	1.60e+6	60.00	57.00	29.86	39,505	397.38	12.99

Pole Num:	35W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.74	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018674 Deg	Longitude:	-84.461753 Deg	Elevation:	881.369422155292		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.1	138.6
Groundline	29.1	138.6
Vertical	11.6	138.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,121	134.7
Groundline	24,121	134.7
GL Allowable	84,398	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 134.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	350	30.5	10,383	43.1	12.3	834	313	3	837	12.3
Comms	544	47.4	8,829	36.6	10.5	709	820	8	717	10.5
PowerEquipments	42	3.6	1,112	4.6	1.3	89	694	7	96	1.4
Pole	188	16.3	3,280	13.6	3.9	263	1,915	18	282	4.1
Crossarms	1	0.1	43	0.2	0.1	4	95	1	4	0.1
Risers	15	1.3	221	0.9	0.3	18	39	0	18	0.3
Insulators	9	0.7	253	1.1	0.3	20	97	1	21	0.3
Pole Load	1,148	100.0	24,121	100.0	28.6	1,937	3,973	38	1,975	29.0
Pole Reserve Capacity			60,277		71.4	4,863			4,825	71.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 134.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	416	36.2	11,992	49.7	14.2	963	1,104	11	973	14.3
Unknown, COMMUNICATION	544	47.4	8,806	36.5	10.4	707	858	8	715	10.5
Pole	188	16.3	3,280	13.6	3.9	263	1,915	18	282	4.1
<Undefined>	1	0.1	43	0.2	0.1	4	95	1	4	0.1
Totals:	1,148	100.0	24,121	100.0	28.6	1,937	3,973	38	1,975	29.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	#6 COPPER SOLID	KU, UTILITY	35.13	0.00	0.1620	0.30	0.079	117.6	48.0	117.6	668	1,337	0	797	2,133
Primary	#6 COPPER SOLID	KU, UTILITY	35.13	0.00	0.1620	0.33	0.079	124.1	227.2	124.1	668	-1,009	0	841	-169
Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.30	0.079	117.6	48.0	117.6	668	1,306	87	778	2,171
Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.33	0.079	124.1	227.2	124.1	668	-986	92	821	-73
Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.30	0.079	117.6	48.0	117.6	668	1,306	-86	778	1,998

Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.33	0.079	124.1	227.2	124.1	668	-986	-91	821	-256
Neutral	#6 COPPER SOLID	KU, UTILITY	26.14	6.65	0.1620	0.30	0.079	117.6	48.0	117.6	668	994	-13	593	1,574
Neutral	#6 COPPER SOLID	KU, UTILITY	26.14	6.65	0.1620	0.33	0.079	124.1	227.2	124.1	668	-751	-14	625	-139
Secondary	#4 COPPER SOLID	KU, UTILITY	25.40	6.70	0.2043	0.31	0.126	117.6	48.0	117.6	982	1,420	-17	613	2,016
Secondary	#4 COPPER SOLID	KU, UTILITY	25.40	6.70	0.2043	0.35	0.126	124.1	227.2	124.1	982	-1,072	-18	646	-444
Secondary	#4 COPPER SOLID	KU, UTILITY	24.78	6.74	0.2043	0.31	0.126	117.6	48.0	117.6	982	1,386	-17	598	1,967
Secondary	#4 COPPER SOLID	KU, UTILITY	24.78	6.74	0.2043	0.35	0.126	124.1	227.2	124.1	982	-1,046	-18	631	-433
Totals:											1,898	-92	8,542	10,347	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 18.63	7.11	1.3300	1.60	0.337	117.6	48.0	117.6	925	982	-55	1,168	2,095
	COMMUNICATION													
CATV	CATV 1.0	Unknown, 18.63	7.11	1.3300	1.70	0.337	124.1	227.2	124.1	925	-741	-58	1,232	433
	COMMUNICATION													
CATV	CATV 1.0	Unknown, 17.47	7.18	1.3300	1.60	0.337	117.6	48.0	117.6	925	920	-55	1,095	1,960
	COMMUNICATION													
CATV	CATV 1.0	Unknown, 17.47	7.18	1.3300	1.70	0.337	124.1	227.2	124.1	925	-695	-58	1,155	402
	COMMUNICATION													
Telco	TELE 1.5	Unknown, 16.71	7.23	1.5000	1.86	0.900	117.6	48.0	117.6	2,000	1,903	-97	1,145	2,951
	COMMUNICATION													
Telco	TELE 1.5	Unknown, 16.71	7.23	1.5000	1.98	0.900	124.1	227.2	124.1	2,000	-1,437	-102	1,208	-332
	COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 14.75	7.35	0.6570	1.58	0.190	117.6	48.0	117.6	750	630	-32	584	1,182
	COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 14.75	7.35	0.6570	1.69	0.190	124.1	227.2	124.1	750	-476	-34	617	107
	COMMUNICATION													
Totals:											1,086	-492	8,204	8,798

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.04	20.98	40.0	40.0	365.00	39.00	--	22.00	--	-100	1,209	1,108
Totals:											-100	1,209	1,108	

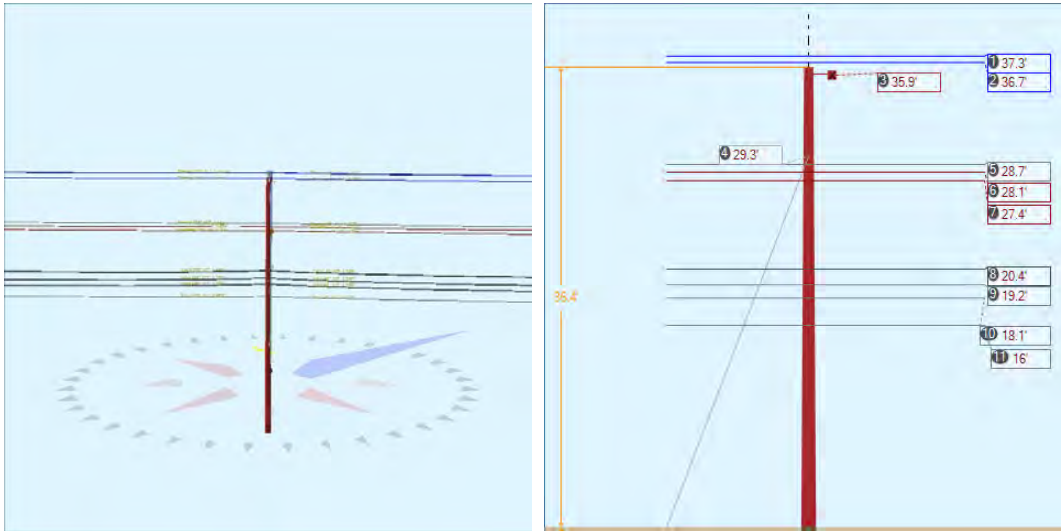
Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		33.51	5.46	48.0	48.0	50.00	4.50	3.50	96.00	2	40	43
Totals:											2	40	43

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 120.0°	Riser	KU, UTILITY	20.62	5.85	120.0	120.0	20.62	247.38	4.00	4.00	247.38	10	210	220
Totals:											10	210	220	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.26	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.70	45.00	131.1	0.0	6.00	3.50	7.50	43	43	86	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.70	-45.00	324.9	0.0	6.00	3.50	7.50	-42	43	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.14	0.00	317.6	47.6	2.00	3.00	3.19	-2	12	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.40	0.00	317.6	47.6	2.00	3.00	3.19	-2	12	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.78	0.00	317.6	47.6	2.00	3.00	3.19	-2	12	9	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.63	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.47	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.71	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.75	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Totals:											-29	281	252

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.71	33.29	10.65	14.77	7.32	11.50	1.60e+6	60.00	57.00	34.26	34,321	342.49	8.62

Pole Num:	36W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018852 Deg	Longitude:	-84.461421 Deg	Elevation:	902.030420084675		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.6	0.0 317.9
Groundline	23.6	0.0 317.9
Vertical	1.1	19.7 137.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,252	318.3 317.9
Groundline	20,252	318.3 317.9
GL Allowable	87,439	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	9.3	317.0		0.0	317.9	9.4	140.0
? EHS 3/8 (Down)			29.3	0.0	317.9	15.0	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	257	27.9	8,276	40.9	9.5	642	305	3	645	9.5
Comms	454	49.2	7,930	39.2	9.1	615	936	9	624	9.2
GuyBraces	1	0.1	32	0.2	0.0	3	10	0	3	0.0
Pole	201	21.8	3,697	18.3	4.2	287	2,065	19	306	4.5
Crossarms	1	0.1	44	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	272	1.3	0.3	21	97	1	22	0.3
Pole Load	923	100.0	20,252	100.0	23.2	1,571	3,507	33	1,604	23.6
Pole Reserve Capacity			67,187		76.8	5,229			5,196	76.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	267	28.9	8,603	42.5	9.8	667	373	4	671	9.9
Unknown, COMMUNICATION	454	49.2	7,907	39.0	9.0	613	974	9	622	9.2
Pole	201	21.8	3,697	18.3	4.2	287	2,065	19	306	4.5
<Undefined>	1	0.1	44	0.2	0.1	3	95	1	4	0.1
Totals:	923	100.0	20,252	100.0	23.2	1,571	3,507	33	1,604	23.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#6 COPPER SOLID KU, UTILITY	37.26	0.00	0.1620	0.30	0.079	117.6	48.2	117.6	668	71	0	846	917
Primary	#6 COPPER SOLID KU, UTILITY	37.26	0.00	0.1620	0.30	0.079	117.6	228.0	117.6	668	-184	0	846	662
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	48.2	117.6	668	70	-87	834	818
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	228.0	117.6	668	-182	-87	834	566
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	48.2	117.6	668	70	87	834	991
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	228.0	117.6	668	-182	87	834	740

Neutral	#6 COPPER SOLID	KU, UTILITY	28.68	6.62	0.1620	0.30	0.079	117.6	48.2	117.6	668	55	-13	651	693
Neutral	#6 COPPER SOLID	KU, UTILITY	28.68	6.62	0.1620	0.30	0.079	117.6	228.0	117.6	668	-142	-13	651	497
Secondary	#4 COPPER SOLID	KU, UTILITY	28.08	6.65	0.2043	0.31	0.126	117.6	48.2	117.6	982	79	-17	678	741
Secondary	#4 COPPER SOLID	KU, UTILITY	28.08	6.65	0.2043	0.31	0.126	117.6	228.0	117.6	982	-204	-17	678	458
Secondary	#4 COPPER SOLID	KU, UTILITY	27.41	6.69	0.2043	0.31	0.126	117.6	48.2	117.6	982	77	-17	662	722
Secondary	#4 COPPER SOLID	KU, UTILITY	27.41	6.69	0.2043	0.31	0.126	117.6	228.0	117.6	982	-199	-17	662	446
Totals:											-670	-92	9,014	8,253	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.42	7.11	1.3300	1.60	0.337	117.6	48.2	117.6	925	54	-55	1,282	1,281
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.42	7.11	1.3300	1.60	0.337	117.6	228.0	117.6	925	-140	-55	1,282	1,087
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.16	7.18	1.5000	1.86	0.900	117.6	48.2	117.6	2,000	110	-97	1,315	1,328
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.16	7.18	1.5000	1.86	0.900	117.6	228.0	117.6	2,000	-284	-97	1,315	935
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.13	7.24	1.5000	1.86	0.900	117.6	48.2	117.6	2,000	104	-97	1,244	1,250
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.13	7.24	1.5000	1.86	0.900	117.6	228.0	117.6	2,000	-268	-97	1,244	878
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.96	7.37	0.6570	1.58	0.190	117.6	48.2	117.6	750	34	-32	634	635
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.96	7.37	0.6570	1.58	0.190	117.6	228.0	117.6	750	-89	-32	634	513
		COMMUNICATION													
Totals:											-478	-562	8,948	7,908	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.92	5.44	48.1	48.1	50.00	4.50	3.50	96.00	0	44	44	
Totals:											0	44	44

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.38	0.00	0.0	0.0	13.00	9.00	10.50	0	169	169
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.11	45.00	131.2	0.0	6.00	3.50	7.50	-43	46	4
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.11	-45.00	325.0	0.0	6.00	3.50	7.50	43	46	89
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.68	0.00	138.1	48.1	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.08	0.00	138.1	48.1	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.41	0.00	138.1	48.1	2.00	3.00	3.19	-2	13	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.42	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.16	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.13	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.96	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Totals:										-29	301	272

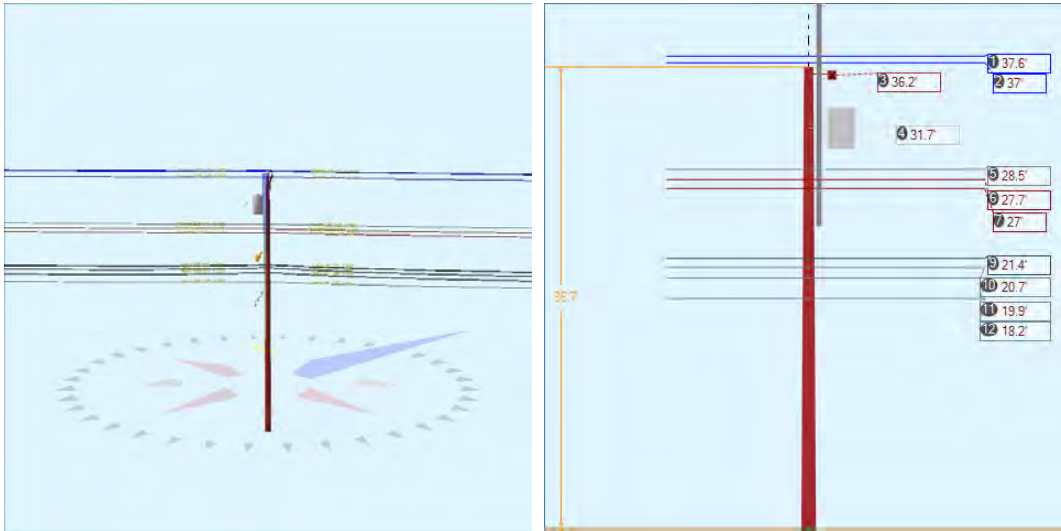
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	29.34	0.00	9.27	0.375	75.00	317.0	72.2	0.273	29.17	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,078	1,889	0	0	0	0	32
Totals:										0	0	0	32

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.27	317.0	20,000	1.00	20,000	1,889	0	9.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.69	33.01	10.86	8.17	7.32	11.63	1.60e+6	60.00	57.00	36.38	328,230	3188.47	90.91

Pole Num:	37W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.32	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.64	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019050 Deg	Longitude:	-84.461103 Deg	Elevation:	909.767420196178		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.2	0.0
Groundline	32.2	0.0
Vertical	14.4	22.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,913	141.6
Groundline	27,913	141.6
GL Allowable	88,242	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 141.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	345	29.8	11,491	41.2	13.0	882	354	3	886	13.0
Comms	545	47.1	10,719	38.4	12.2	823	970	9	832	12.2
PowerEquipments	42	3.6	1,361	4.9	1.5	105	694	6	111	1.6
Pole	203	17.6	3,767	13.5	4.3	289	2,091	20	309	4.5
Crossarms	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Risers	12	1.1	231	0.8	0.3	18	48	0	18	0.3
Insulators	9	0.7	298	1.1	0.3	23	97	1	24	0.3
Pole Load	1,156	100.0	27,913	100.0	31.6	2,143	4,348	41	2,184	32.1
Pole Reserve Capacity			60,329		68.4	4,657			4,616	67.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 141.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	407	35.2	13,392	48.0	15.2	1,028	1,155	11	1,039	15.3
Unknown, COMMUNICATION	545	47.1	10,708	38.4	12.1	822	1,008	9	832	12.2
Pole	203	17.6	3,767	13.5	4.3	289	2,091	20	309	4.5
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Totals:	1,156	100.0	27,913	100.0	31.6	2,143	4,348	41	2,184	32.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	#6 COPPER SOLID	KU, UTILITY	37.56	0.00	0.1620	0.34	0.079	126.2	48.7	126.2	668	-1,256	0	913	-343
Primary	#6 COPPER SOLID	KU, UTILITY	37.56	0.00	0.1620	0.30	0.079	117.6	228.2	117.6	668	1,474	0	850	2,324
Primary	#6 COPPER SOLID	KU, UTILITY	37.02	45.33	0.1620	0.34	0.079	126.2	48.7	126.2	668	-1,238	-94	900	-432
Primary	#6 COPPER SOLID	KU, UTILITY	37.02	45.33	0.1620	0.30	0.079	117.6	228.2	117.6	668	1,454	-87	838	2,204
Primary	#2 COPPER 7 STRAND	KU, UTILITY	37.02	45.33	0.2922	0.39	0.205	126.2	48.7	126.2	1,530	-2,836	167	1,077	-1,592

Primary	#2 COPPER 7 STRAND	KU, UTILITY	37.02	45.33	0.2922	0.34	0.205	117.6	228.2	117.6	1,530	3,330	155	1,003	4,488
Neutral	#6 COPPER SOLID	KU, UTILITY	28.52	6.64	0.1620	0.34	0.079	126.2	48.7	126.2	668	-953	14	693	-247
Neutral	#6 COPPER SOLID	KU, UTILITY	28.52	6.64	0.1620	0.30	0.079	117.6	228.2	117.6	668	1,119	13	645	1,777
Secondary	#4 COPPER SOLID	KU, UTILITY	27.72	6.69	0.2043	0.36	0.126	126.2	48.7	126.2	982	-1,362	18	717	-628
Secondary	#4 COPPER SOLID	KU, UTILITY	27.72	6.69	0.2043	0.31	0.126	117.6	228.2	117.6	982	1,599	17	667	2,283
Secondary	#4 COPPER SOLID	KU, UTILITY	27.02	6.73	0.2043	0.36	0.126	126.2	48.7	126.2	982	-1,328	18	698	-611
Secondary	#4 COPPER SOLID	KU, UTILITY	27.02	6.73	0.2043	0.31	0.126	117.6	228.2	117.6	982	1,559	17	650	2,226
Totals:											1,562	237	9,650	11,449	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.44	7.06	1.3300	1.74	0.337	126.2	48.7	126.2	925	-993	58	1,440	506
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.44	7.06	1.3300	1.60	0.337	117.6	228.2	117.6	925	1,166	54	1,341	2,561
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.70	7.11	1.5000	2.03	0.900	126.2	48.7	126.2	2,000	-2,072	-102	1,520	-655
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.70	7.11	1.5000	1.86	0.900	117.6	228.2	117.6	2,000	2,432	-95	1,415	3,752
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.88	7.15	1.5000	2.03	0.900	126.2	48.7	126.2	2,000	-1,990	-103	1,460	-634
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.88	7.15	1.5000	1.86	0.900	117.6	228.2	117.6	2,000	2,337	-96	1,359	3,600
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.25	7.25	0.6570	1.73	0.190	126.2	48.7	126.2	750	-685	-34	775	56
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.25	7.25	0.6570	1.59	0.190	117.6	228.2	117.6	750	804	-32	721	1,494
		COMMUNICATION													
Totals:											999	-350	10,031	10,680	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	31.71	20.95	230.0	230.0	365.00	39.00	--	22.00	--	33	1,323	1,356
Totals:											33	1,323	1,356	

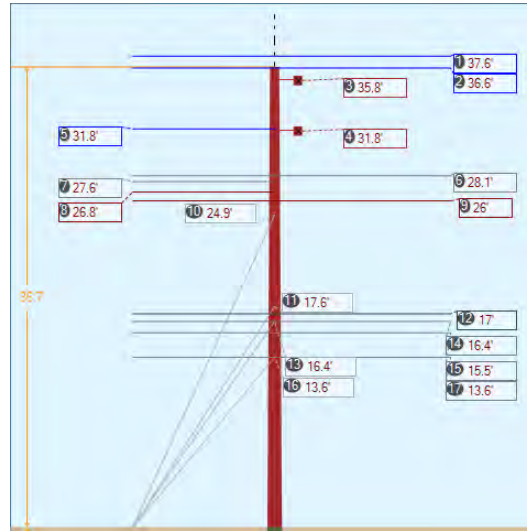
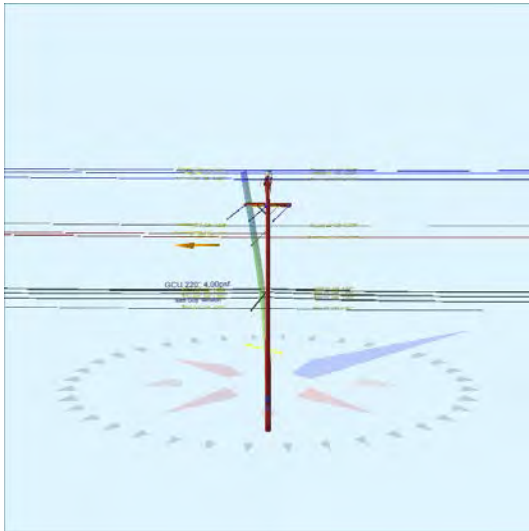
Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		36.21	5.44	48.4	48.4	50.00	4.50	3.50	96.00	-2	48	46
Totals:											-2	48	46

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 130.0°	Riser	KU, UTILITY	25.27	6.09	130.0	130.0	25.27	303.20	4.00	4.00	303.20	24	206	230
Totals:											24	206	230	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.68	0.00	0.0	0.0	13.00	9.00	10.50	0	171	171	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.40	-45.00	325.3	0.0	6.00	3.50	7.50	-43	47	4	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.40	45.00	131.5	0.0	6.00	3.50	7.50	42	47	89	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.52	0.00	138.4	48.4	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.72	0.00	138.4	48.4	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.02	0.00	138.4	48.4	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.44	0.00	138.4	48.4	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.70	0.00	318.4	48.4	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.88	0.00	318.4	48.4	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.25	0.00	318.4	48.4	5.00	3.00	0.00	-6	0	-6	
Totals:											-6	302	297

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.58	33.44	10.77	16.10	7.32	11.67	1.60e+6	60.00	57.00	36.68	30,179	301.97	6.94

Pole Num:	38W - L27290-P166-WS	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.28	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.65	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019311 Deg	Longitude:	-84.460813 Deg	Elevation:	894.87566514917		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.1	0.0
Groundline	45.1	0.0
Vertical	2.1	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	39,114	225.0
Groundline	39,114	225.0
GL Allowable	88,349	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	14.0	135.0		4.6	220.0	12.6	320.0
? EHS 3/8 (Down)			24.9	6.7	220.0	19.9	320.0
? Single Helix Anchor	10.0	135.0		1.3	220.0	4.2	320.0
? EHS 1/4 (Down)			17.6	2.3	220.0	8.1	320.0
? EHS 1/4 (Down)			16.4	2.0	220.0	7.3	320.0
? Single Helix Anchor	8.0	135.0		0.4	220.0	1.5	320.0
? EHS 1/4 (Down)			13.6	1.3	220.0	5.3	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 225.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,155	77.4	31,383	80.2	35.5	2,412	400	4	2,415	35.5
Comms	25	1.6	417	1.1	0.5	32	1,033	10	42	0.6
GuyBraces	19	1.3	368	0.9	0.4	28	1,675	16	44	0.6
Pole	203	13.6	3,754	9.6	4.3	289	2,094	20	308	4.5
Crossarms	72	4.8	2,556	6.5	2.9	196	380	4	200	2.9
Insulators	19	1.2	636	1.6	0.7	49	150	1	50	0.7
Pole Load	1,492	100.0	39,114	100.0	44.3	3,006	5,732	54	3,059	45.0
Pole Reserve Capacity			49,235		55.7	3,794			3,741	55.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 225.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,181	79.2	32,196	82.3	36.4	2,474	1,730	16	2,490	36.6
Unknown, COMMUNICATION	36	2.4	607	1.6	0.7	47	1,528	14	61	0.9
Pole	203	13.6	3,754	9.6	4.3	289	2,094	20	308	4.5
<Undefined>	72	4.8	2,556	6.5	2.9	196	380	4	200	2.9
Totals:	1,492	100.0	39,114	100.0	44.3	3,006	5,732	54	3,059	45.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.60	0.00	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-82,326	0	-1	-82,327
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.60	0.00	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	82,117	0	13	82,130
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.63	45.00	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-80,217	-4	-1	-80,222
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.63	45.00	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	80,013	-4	13	80,023
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.63	45.00	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-80,217	4	-1	-80,215
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.63	45.00	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	80,013	4	13	80,030
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.79	18.45	0.3250	0.03	0.107	16.6	144.5	16.6	150	1,022	0	121	1,143
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.79	48.64	0.3250	0.03	0.107	16.6	144.5	16.6	150	1,022	1	121	1,144
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.79	48.64	0.3250	0.03	0.107	16.6	144.5	16.6	150	1,022	-1	121	1,142
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.06	6.67	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-61,410	-1	-1	-61,412
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.06	6.67	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	61,254	-1	10	61,264
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	6.70	0.3250	0.03	0.107	16.6	144.5	16.6	150	886	0	105	992
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.75	6.75	0.3250	0.65	0.107	126.1	229.2	126.1	800	27,749	19	9	27,778
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.04	6.79	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-56,999	-1	-1	-57,001
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.04	6.79	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	56,855	-1	9	56,863
										Totals:	30,783	18	531	31,332	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.04	7.33	1.3300	0.20	0.337	16.6	144.5	16.6	150	547	1	144	693
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.04	7.33	1.3300	1.71	0.337	126.1	229.2	126.1	925	20,434	-4	13	20,443
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.04	7.33	1.3300	1.78	0.337	130.4	44.1	130.4	925	-20,486	-5	-1	-20,492
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.43	7.36	1.5000	2.10	0.900	130.4	44.1	130.4	2,000	-42,704	-3	-1	-42,708
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.43	7.36	1.5000	2.01	0.900	126.1	229.2	126.1	2,000	42,595	-3	14	42,607
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.52	7.42	1.5000	2.10	0.900	130.4	44.1	130.4	2,000	-40,347	-3	-1	-40,351
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.52	7.42	1.5000	2.01	0.900	126.1	229.2	126.1	2,000	40,244	-3	13	40,255
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	13.57	7.53	0.6570	1.71	0.190	130.4	44.1	130.4	750	-13,226	-1	-1	-13,228
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	13.57	7.53	0.6570	1.64	0.190	126.1	229.2	126.1	750	13,192	-1	7	13,198
		COMMUNICATION													
Totals:											251	-22	187	416	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.82	5.46	226.6	226.6	50.00	4.50	3.50	96.00	0	2,390	2,390	
Normal	Crossarm	31.79	5.70	144.5	144.5	50.00	4.50	3.50	96.00	0	162	162	
Totals:											0	2,552	2,552

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.72	0.00	0.0	0.0	13.00	9.00	10.50	0	170	170
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.01	45.00	309.7	0.0	6.00	3.50	7.50	-2	92	89
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.01	-45.00	143.6	0.0	6.00	3.50	7.50	2	92	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.79	0.00	144.5	0.0	3.00	3.80	12.75	1	75	76

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.79	45.00	227.2	0.0	3.00	3.80	12.75	23	75	97
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.79	-45.00	61.7	0.0	3.00	3.80	12.75	-20	75	55
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.06	0.00	316.6	226.6	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.58	0.00	144.5	144.5	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.75	0.00	229.2	229.2	2.00	3.00	3.19	2	12	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.04	0.00	316.6	226.6	2.00	3.00	3.19	0	12	12
Bolt	Single Bolt	Unknown, COMMUNICATION	17.04	0.00	144.5	234.5	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	17.04	0.00	319.2	229.2	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	16.43	0.00	316.6	226.6	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	15.52	0.00	316.6	226.6	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	13.57	0.00	316.6	226.6	5.00	3.00	0.00	0	0	0
Totals:										7	628	634

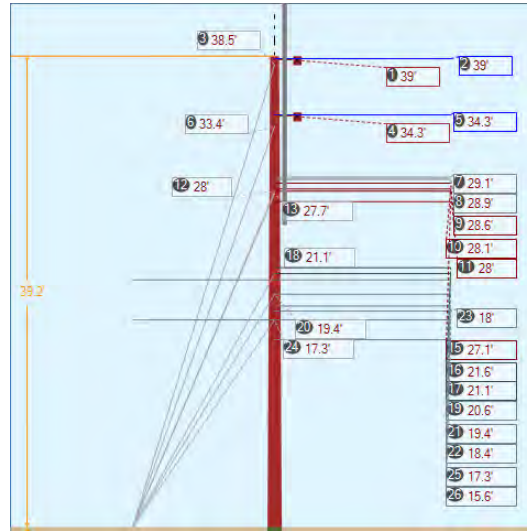
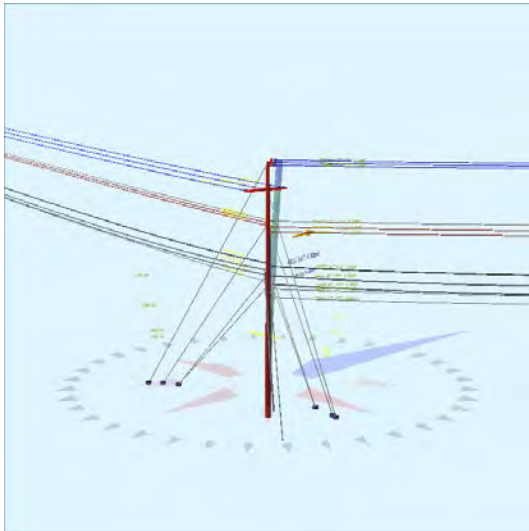
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	24.92	0.00	14.00	0.375	75.00	135.0	60.5	0.273	26.91	0.16
EHS 1/4	Down	Unknown, COMMUNICATION	17.64	0.00	10.00	0.25	75.00	135.0	60.2	0.121	18.58	0.04
EHS 1/4	Down	Unknown, COMMUNICATION	16.43	0.00	10.00	0.25	75.00	135.0	58.5	0.121	17.52	0.03
EHS 1/4	Down	Unknown, COMMUNICATION	13.57	0.00	8.00	0.25	75.00	135.0	59.3	0.121	14.04	0.02

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,761	2,510	926	806	457	0	177
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	487	443	138	120	69	0	77
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	438	398	120	102	63	0	68
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	320	291	76	65	39	0	46
Totals:										1,094	627	0	368

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	14.00	135.0	20,000	1.00	20,000	2,510	926	12.5
Single Helix Anchor		18.00	10.00	135.0	20,000	1.00	20,000	841	258	4.2
Single Helix Anchor		18.00	8.00	135.0	20,000	1.00	20,000	291	76	1.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.52	33.27	10.82	10.67	7.32	11.67	1.60e+6	60.00	57.00	36.72	270,899	2729.55	47.62

Pole Num:	57W - 27220-228	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.81	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.57	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021068 Deg	Longitude:	-84.458375 Deg	Elevation:	869.539565109081		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.0	347.0
Groundline	32.0	347.0
Vertical	45.9	346.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,140	347.0
Groundline	22,140	347.0
GL Allowable	95,144	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.0	229.0	38.5	47.0	347.0	47.1	0.0
? Single Helix Anchor ? EHS 3/8 (Down)	21.0	105.0	27.7	39.7	347.0	39.8	330.0
? Single Helix Anchor ? EHS 3/8 (Down)	18.5	229.0	28.0	46.9	347.0	47.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)	15.7	105.0	21.1	24.2	347.0	24.4	330.0
? Single Helix Anchor ? EHS 1/4 (Down)			19.4	38.9	347.0	43.1	330.0
? Single Helix Anchor ? EHS 1/4 (Down)	15.7	227.0	17.3	41.7	347.0	41.8	10.0
? Single Helix Anchor ? EHS 1/4 (Down)			19.4	70.8	347.0	78.2	10.0
? Single Helix Anchor ? EHS 1/4 (Down)			17.3	68.4	347.0	75.6	10.0
? Single Helix Anchor ? EHS 3/8 (Down)	21.9	105.0	33.4	48.0	347.0	48.1	330.0
				69.2	347.0	76.3	330.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 2.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	9,131	471.6	135,835	613.5	142.8	21,548	736	7	21,555	317.0
Comms	5,664	292.5	47,396	214.1	49.8	7,519	1,711	15	7,534	110.8
GuyBraces	-13,117	-677.4	-163,661	-739.2	-172.0	-25,962	61,341	546	-25,416	-373.8
Pole	212	11.0	1,867	8.4	2.0	296	2,308	21	317	4.7
Crossarms	17	0.9	302	1.4	0.3	48	190	2	50	0.7
Risers	14	0.7	122	0.6	0.1	19	53	0	20	0.3
Insulators	16	0.8	279	1.3	0.3	44	133	1	45	0.7
Pole Load	1,936	100.0	22,140	100.0	23.3	3,512	66,471	592	4,104	60.4
Pole Reserve Capacity			73,004		76.7	3,288			2,696	39.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 2.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	465	24.0	9,574	43.2	10.1	1,519	46,760	416	1,935	28.5
Unknown, COMMUNICATION	1,242	64.2	10,397	47.0	10.9	1,649	17,213	153	1,803	26.5
Pole	212	11.0	1,867	8.4	2.0	296	2,308	21	317	4.7
<Undefined>	17	0.9	302	1.4	0.3	48	190	2	50	0.7
Totals:	1,936	100.0	22,140	100.0	23.3	3,512	66,471	592	4,104	60.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.97	18.17	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	44,389	12	1,069	45,470
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.97	48.53	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	44,389	-7	1,069	45,451
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.97	48.53	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	44,389	16	1,069	45,474
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.29	18.45	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	10,608	4	1,572	12,184
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.29	48.64	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	10,608	21	1,572	12,202
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.29	48.64	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	10,608	-18	1,572	12,162
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.13	6.76	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	9,011	7	1,335	10,353
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.94	6.77	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	32,966	23	794	33,783
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.61	6.79	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	8,851	7	1,312	10,170
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.13	6.81	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	8,701	7	1,290	9,998
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.95	6.83	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	31,840	23	767	32,630
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.08	6.88	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	30,853	23	743	31,620
Totals:											287,212	120	14,165	301,496	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	21.59	7.20	1.3300	3.11	0.337	200.0	283.9	200.1	925	5,031	18	2,017	7,067
CATV	CATV 1.0	Unknown, COMMUNICATION	21.10	7.23	1.3300	2.55	0.337	172.4	47.2	172.4	925	18,103	58	1,180	19,341
Telco	TELE 1.5	Unknown, COMMUNICATION	20.57	7.26	1.5000	1.23	0.900	83.6	134.1	83.6	2,000	-35,352	-62	409	-35,005
Telco	TELE 1.5	Unknown, COMMUNICATION	20.57	7.26	1.5000	3.71	0.900	200.0	283.9	200.1	2,000	10,364	-149	2,100	12,315
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.33	1.5000	3.02	0.900	172.4	47.2	172.4	2,000	35,975	138	1,185	37,298
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.33	1.5000	3.71	0.900	200.0	283.9	200.1	2,000	9,768	160	1,980	11,908
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.40	7.39	0.6570	3.01	0.190	200.0	283.9	200.0	750	3,476	11	1,087	4,573
Telco	TELE 1.5	Unknown, COMMUNICATION	17.98	7.42	1.5000	3.02	0.900	172.4	47.2	172.4	2,000	33,359	104	1,099	34,562
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.26	7.46	0.6570	2.48	0.190	172.4	47.2	172.4	750	12,011	2	610	12,624
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.26	7.46	0.6570	1.03	0.190	83.6	134.1	83.6	750	-11,126	1	199	-10,926
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.61	7.56	0.6570	2.48	0.190	172.4	47.2	172.4	750	10,857	35	552	11,444
Totals:											92,467	316	12,417	105,200	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	38.97	5.42	47.2	47.2	50.00	4.50	3.50	96.00	31	493	524
Normal	Crossarm	34.29	5.70	283.9	283.9	50.00	4.50	3.50	96.00	9	138	146
Totals:										39	631	670

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	KU, UTILITY	27.66	6.09	360.0	360.0	27.66	331.88	4.00	4.00	331.88	14	257	271
Totals:											14	257	271

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.97	0.00	47.2	0.0	3.00	3.80	12.75	6	88	95
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.97	45.00	130.4	0.0	3.00	3.80	12.75	-9	88	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.97	-45.00	324.1	0.0	3.00	3.80	12.75	21	88	109
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.29	0.00	283.9	0.0	3.00	3.80	12.75	2	78	79
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.29	45.00	6.7	0.0	3.00	3.80	12.75	23	78	100
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.29	-45.00	201.1	0.0	3.00	3.80	12.75	-19	78	58
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.13	0.00	283.9	283.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.94	0.00	47.2	47.2	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.61	0.00	283.9	283.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.13	0.00	283.9	283.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.95	0.00	47.2	47.2	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.08	0.00	47.2	47.2	2.00	3.00	3.19	2	12	14
Bolt	Single Bolt	Unknown, COMMUNICATION	21.59	0.00	283.9	373.9	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	21.10	0.00	47.2	137.2	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.57	0.00	209.0	209.0	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	19.39	0.00	345.6	345.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	18.40	0.00	283.9	373.9	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	17.98	0.00	47.2	137.2	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	17.26	0.00	90.7	90.7	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	15.61	0.00	47.2	137.2	5.00	3.00	0.00	4	0	4
Totals:										45	574	619

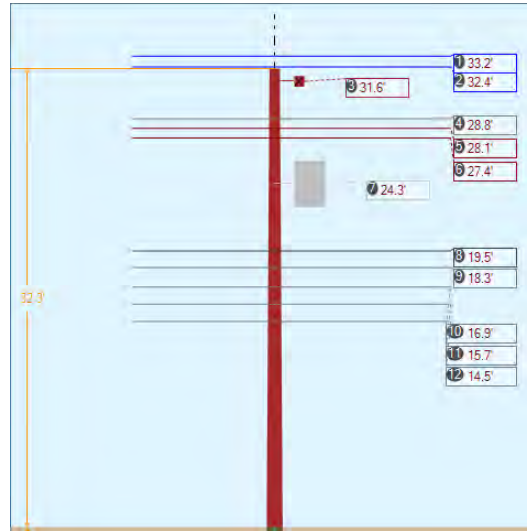
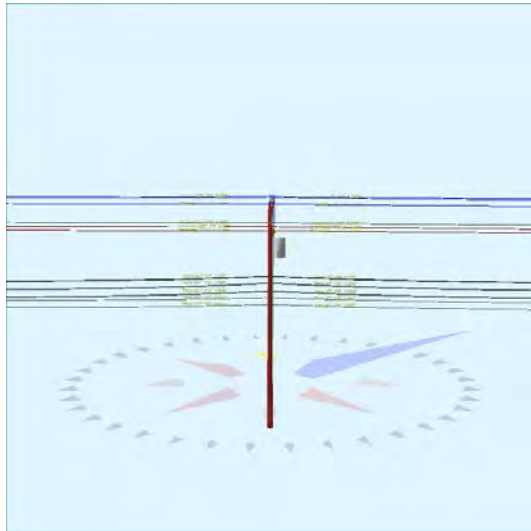
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	38.48	0.00	21.00	0.375	75.00	229.0	61.2	0.273	42.19	2.50
EHS 3/8	Down	KU, UTILITY	27.74	0.00	21.00	0.375	75.00	105.0	52.7	0.273	33.07	1.65
EHS 3/8	Down	KU, UTILITY	27.95	0.00	18.48	0.375	75.00	229.0	56.3	0.273	31.81	1.88
EHS 1/4	Down	Unknown, COMMUNICATION	21.10	0.00	15.65	0.25	75.00	105.0	53.3	0.121	24.54	0.88
EHS 1/4	Down	Unknown, COMMUNICATION	19.39	0.00	15.65	0.25	75.00	105.0	50.9	0.121	23.17	0.76
EHS 1/4	Down	Unknown, COMMUNICATION	19.39	0.00	15.65	0.25	75.00	227.0	50.9	0.121	23.17	1.39
EHS 1/4	Down	Unknown, COMMUNICATION	17.26	0.00	15.65	0.25	75.00	227.0	47.7	0.121	21.53	1.25
EHS 3/8	Down	KU, UTILITY	33.36	0.00	21.90	0.375	75.00	105.0	56.5	0.273	38.23	2.31

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,360	9,418	9,398	8,233	4,534	-3,135	-118,188
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,749	7,954	7,936	6,312	4,810	-1,022	-27,728
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,346	9,405	9,386	7,812	5,204	-3,598	-98,550
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,786	2,533	2,518	2,018	1,507	-320	-6,518
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,581	2,346	2,328	1,807	1,468	-312	-5,846
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,678	4,252	4,237	3,289	2,671	-1,912	-36,311
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,527	4,115	4,096	3,027	2,759	-1,976	-33,464
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,582	9,620	9,595	8,003	5,293	-1,125	-36,655
Totals:										40,501	28,244	-13,401	-363,260

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.00	229.0	20,000	1.00	20,000	9,418	9,398	47.1
Single Helix Anchor		18.00	21.00	105.0	20,000	1.00	20,000	7,954	7,936	39.8
Single Helix Anchor		18.00	18.48	229.0	20,000	1.00	20,000	9,405	9,386	47.0
Single Helix Anchor		18.00	15.65	105.0	20,000	1.00	20,000	4,878	4,845	24.4
Single Helix Anchor		18.00	15.65	227.0	20,000	1.00	20,000	8,364	8,329	41.8
Single Helix Anchor		18.00	21.90	105.0	20,000	1.00	20,000	9,620	9,595	48.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.17	34.33	10.77	41.17	7.32	11.96	1.60e+6	60.00	57.00	39.19	144,923	1448.17	2.18

Pole Num:	58W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.35	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021384 Deg	Longitude:	-84.457920 Deg	Elevation:	878.133070172119		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.1	0.0
Groundline	40.1	0.0
Vertical	13.9	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	31,266	319.7
Groundline	31,266	319.7
GL Allowable	79,274	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 319.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	498	34.2	14,988	47.9	18.9	1,284	598	6	1,290	19.0
Comms	730	50.2	11,863	37.9	15.0	1,016	1,341	13	1,030	15.1
PowerEquipments	42	2.9	1,222	3.9	1.5	105	694	7	112	1.6
Pole	175	12.0	2,915	9.3	3.7	250	1,758	18	267	3.9
Crossarms	1	0.1	41	0.1	0.1	4	95	1	4	0.1
Insulators	9	0.6	238	0.8	0.3	20	106	1	21	0.3
Pole Load	1,454	100.0	31,266	100.0	39.4	2,678	4,592	46	2,724	40.1
Pole Reserve Capacity			48,008		60.6	4,122			4,076	59.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 319.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	548	37.7	16,475	52.7	20.8	1,411	1,351	14	1,425	21.0
Unknown, COMMUNICATION	730	50.2	11,835	37.9	14.9	1,014	1,388	14	1,028	15.1
Pole	175	12.0	2,915	9.3	3.7	250	1,758	18	267	3.9
<Undefined>	1	0.1	41	0.1	0.1	4	95	1	4	0.1
Totals:	1,454	100.0	31,266	100.0	39.4	2,678	4,592	46	2,724	40.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.18	0.00	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	3,259	0	1,133	4,392
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.18	0.00	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-3,136	0	1,497	-1,638
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	3,184	-160	1,107	4,131
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-3,064	-211	1,463	-1,812
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	3,184	162	1,107	4,452
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-3,064	214	1,463	-1,387

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.76	6.38	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	2,824	-23	982	3,782
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.76	6.38	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-2,717	-30	1,297	-1,450
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.08	6.42	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	2,757	-23	958	3,692
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.08	6.42	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-2,653	-30	1,267	-1,416
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.40	6.46	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	2,690	-23	935	3,602
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.40	6.46	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-2,589	-31	1,236	-1,383
Totals:											676	-156	14,444	14,965	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.47	6.94	1.3300	1.81	0.337	130.4	47.1	130.5	925	831	-59	1,354	2,125
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.47	6.94	1.3300	2.56	0.337	172.4	227.2	172.4	925	-799	-78	1,789	912
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.30	7.01	1.5000	2.11	0.900	130.4	47.1	130.5	2,000	1,688	-104	1,391	2,974
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.30	7.01	1.5000	3.03	0.900	172.4	227.2	172.4	2,000	-1,624	-138	1,838	76
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.91	7.10	1.5000	2.11	0.900	130.4	47.1	130.5	2,000	1,560	-106	1,285	2,740
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.91	7.10	1.5000	3.03	0.900	172.4	227.2	172.4	2,000	-1,502	-140	1,699	58
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.71	7.17	0.6570	1.79	0.190	130.4	47.1	130.4	750	543	-35	691	1,199
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.71	7.17	0.6570	2.53	0.190	172.4	227.2	172.4	750	-523	-46	913	344
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.50	7.24	0.6570	1.79	0.190	130.4	47.1	130.4	750	502	-35	637	1,104
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.50	7.24	0.6570	2.53	0.190	172.4	227.2	172.4	750	-483	-47	843	313
		COMMUNICATION													
Totals:											194	-789	12,440	11,845	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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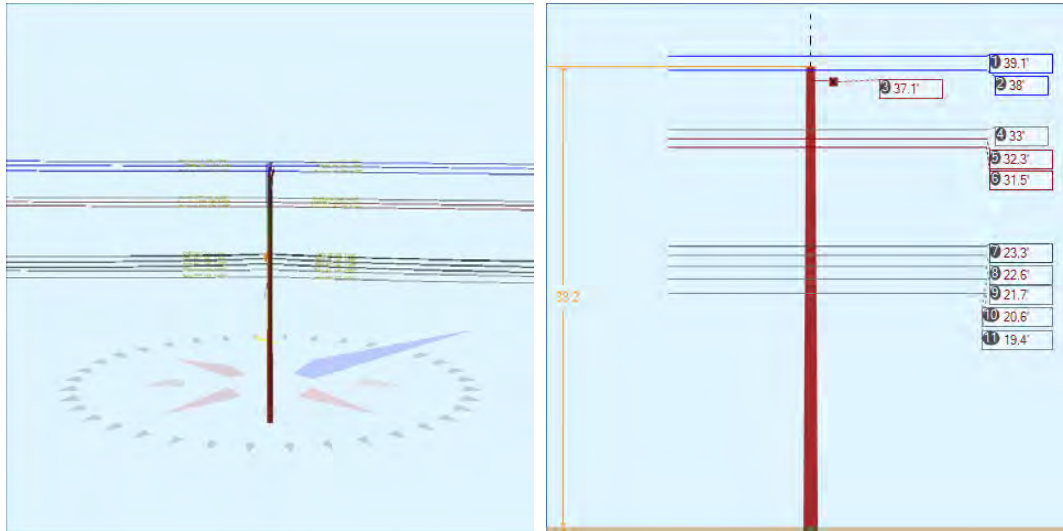
Transformer	1PH-25KVA	KU, UTILITY	24.31	21.15	40.0	40.0	365.00	39.00	--	22.00	--	207	1,013	1,220
Totals:												207	1,013	1,220

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		31.60	5.45	47.1	47.1	50.00	4.50	3.50	96.00	2	39	41	
Totals:											2	39	41

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	32.31	0.00	0.0	0.0	13.00	9.00	10.50	0	150	150	
Pin	Pin Insulator - 5 kV KU, UTILITY	31.79	45.00	130.2	0.0	6.00	3.50	7.50	-42	41	-2	
Pin	Pin Insulator - 5 kV KU, UTILITY	31.79	-45.00	324.0	0.0	6.00	3.50	7.50	43	41	84	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.76	0.00	137.2	227.2	2.00	3.00	3.19	-2	13	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.08	0.00	137.2	227.2	2.00	3.00	3.19	-2	13	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.40	0.00	137.2	227.2	2.00	3.00	3.19	-2	13	11	
Bolt	Three Bolt Unknown, COMMUNICATION	19.47	0.00	137.1	47.1	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.30	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt Unknown, COMMUNICATION	16.91	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt Unknown, COMMUNICATION	15.71	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt Unknown, COMMUNICATION	14.50	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Totals:										-34	271	237

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.25	33.29	10.43	15.58	7.32	11.26	1.60e+6	60.00	57.00	32.31	33,046	330.37	7.19

Pole Num:	59W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.22	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021621 Deg	Longitude:	-84.457584 Deg	Elevation:	878.517512736201		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.3	0.0
Groundline	56.3	0.0
Vertical	12.1	22.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,603	137.8
Groundline	51,603	137.8
GL Allowable	92,523	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 137.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	806	43.7	28,644	55.5	31.0	2,102	509	5	2,106	31.0
Comms	814	44.1	18,443	35.7	19.9	1,353	1,141	10	1,364	20.1
Pole	214	11.6	4,118	8.0	4.5	302	2,225	20	322	4.7
Crossarms	1	0.1	46	0.1	0.1	3	95	1	4	0.1
Insulators	9	0.5	353	0.7	0.4	26	106	1	27	0.4
Pole Load	1,843	100.0	51,603	100.0	55.8	3,787	4,076	37	3,824	56.2
Pole Reserve Capacity			40,920		44.2	3,013			2,976	43.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 137.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	814	44.2	28,969	56.1	31.3	2,126	568	5	2,131	31.3
Unknown, COMMUNICATION	814	44.1	18,471	35.8	20.0	1,355	1,188	11	1,366	20.1
Pole	214	11.6	4,118	8.0	4.5	302	2,225	20	322	4.7
<Undefined>	1	0.1	46	0.1	0.1	3	95	1	4	0.1
Totals:	1,843	100.0	51,603	100.0	55.8	3,787	4,076	37	3,824	56.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.13	0.00	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,541	0	1,314	2,855
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.13	0.00	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	1,075	0	1,327	2,402
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,495	158	1,275	2,928
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	1,043	160	1,287	2,490
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,495	-158	1,275	2,612
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	1,043	-160	1,287	2,171
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.00	6.47	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,300	23	1,108	2,430

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.00	6.47	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	907	23	1,119	2,048
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.26	6.51	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,270	23	1,083	2,376
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.26	6.51	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	886	23	1,094	2,003
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.55	6.56	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,242	23	1,059	2,324
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.55	6.56	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	867	23	1,069	1,959
Totals:											14,166	138	14,295	28,599	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.34	7.04	1.3300	1.77	0.337	128.2	48.9	128.2	925	400	59	1,597	2,055
CATV	CATV 1.0	Unknown, COMMUNICATION	23.34	7.04	1.3300	1.79	0.337	129.4	227.1	129.5	925	279	60	1,613	1,951
Telco	TELE 1.5	Unknown, COMMUNICATION	22.58	7.09	1.5000	2.07	0.900	128.2	48.9	128.2	2,000	836	104	1,688	2,627
Telco	TELE 1.5	Unknown, COMMUNICATION	22.58	7.09	1.5000	2.09	0.900	129.4	227.1	129.5	2,000	583	105	1,705	2,392
Telco	TELE 1.5	Unknown, COMMUNICATION	21.66	7.14	1.5000	2.07	0.900	128.2	48.9	128.2	2,000	801	105	1,619	2,525
Telco	TELE 1.5	Unknown, COMMUNICATION	21.66	7.14	1.5000	2.09	0.900	129.4	227.1	129.5	2,000	559	106	1,635	2,300
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.62	7.20	0.6570	1.76	0.190	128.2	48.9	128.2	750	286	35	892	1,212
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.62	7.20	0.6570	1.78	0.190	129.4	227.1	129.4	750	200	35	901	1,135
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.42	7.27	0.6570	1.76	0.190	128.2	48.9	128.2	750	269	35	840	1,144
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.42	7.27	0.6570	1.78	0.190	129.4	227.1	129.4	750	188	35	848	1,071
Totals:											4,401	677	13,335	18,414	

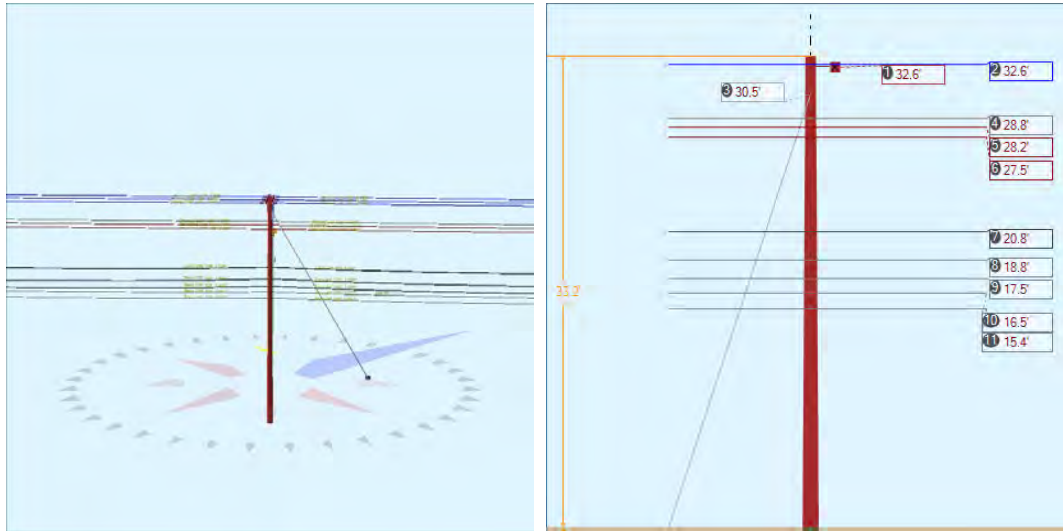
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	37.15	5.48	48.0	48.0	50.00	4.50	3.50	96.00	0	46	46
Totals:										0	46	46

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.25	0.00	0.0	0.0	13.00	9.00	10.50	0	178	178
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.33	45.00	131.1	0.0	6.00	3.50	7.50	43	48	91
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.33	-45.00	324.9	0.0	6.00	3.50	7.50	-43	48	5
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.00	0.00	138.0	48.0	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.26	0.00	138.0	48.0	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.55	0.00	138.0	48.0	2.00	3.00	3.19	2	15	17
Bolt	Three Bolt	Unknown, COMMUNICATION	23.34	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.58	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.66	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.62	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.42	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Totals:										35	318	353

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.18	33.32	10.97	15.58	7.32	11.85	1.60e+6	60.00	57.00	38.25	33,728	336.88	8.26

Pole Num:	60W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.81	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.69	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021866 Deg	Longitude:	-84.457271 Deg	Elevation:	879.782803220846		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	36.7	0.0
Groundline	36.7	0.0
Vertical	1.3	19.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,536	318.6
Groundline	29,536	318.6
GL Allowable	81,576	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.0	30.0		0.0	318.6	2.1	170.0
? EHS 3/8 (Down)			30.5	0.0	318.6	3.3	170.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	449	35.2	13,744	46.5	16.9	1,148	492	5	1,153	17.0
Comms	620	48.6	11,869	40.2	14.6	992	1,102	11	1,002	14.7
GuyBraces	8	0.7	257	0.9	0.3	22	11	0	22	0.3
Pole	181	14.2	3,053	10.3	3.7	255	1,829	18	273	4.0
Crossarms	3	0.2	80	0.3	0.1	7	190	2	9	0.1
Insulators	16	1.2	533	1.8	0.7	45	93	1	45	0.7
Pole Load	1,277	100.0	29,536	100.0	36.2	2,468	3,716	37	2,504	36.8
Pole Reserve Capacity			52,040		63.8	4,332			4,296	63.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	473	37.1	14,506	49.1	17.8	1,212	548	5	1,217	17.9
Unknown, COMMUNICATION	620	48.6	11,897	40.3	14.6	994	1,149	11	1,005	14.8
Pole	181	14.2	3,053	10.3	3.7	255	1,829	18	273	4.0
<Undefined>	3	0.2	80	0.3	0.1	7	190	2	9	0.1
Totals:	1,277	100.0	29,536	100.0	36.2	2,468	3,716	37	2,504	36.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	18.20	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-181	0	1,031	850
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-181	-11	1,031	838
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-181	11	1,031	861
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	496	12	1,095	1,603
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	18.20	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	496	0	1,095	1,591
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	496	-12	1,095	1,579

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.81	6.43	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-160	21	911	772
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.81	6.43	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	438	23	967	1,428
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.17	6.47	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-156	21	891	756
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.17	6.47	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	428	23	946	1,397
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.49	6.51	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-153	22	869	738
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.49	6.51	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	418	23	923	1,364
Totals:											1,760	132	11,883	13,775	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.82	6.91	1.3300	1.65	0.337	120.7	48.7	120.7	925	-50	55	1,341	1,346
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.82	6.91	1.3300	1.77	0.337	128.2	228.9	128.2	925	138	58	1,424	1,620
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.82	7.04	1.5000	1.92	0.900	120.7	48.7	120.7	2,000	-98	97	1,325	1,324
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.82	7.04	1.5000	2.07	0.900	128.2	228.9	128.2	2,000	269	103	1,407	1,779
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.53	7.11	1.5000	1.92	0.900	120.7	48.7	120.7	2,000	-91	98	1,234	1,241
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.53	7.11	1.5000	2.07	0.900	128.2	228.9	128.2	2,000	251	104	1,311	1,665
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.49	7.18	0.6570	1.63	0.190	120.7	48.7	120.7	750	-32	32	672	672
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.49	7.18	0.6570	1.76	0.190	128.2	228.9	128.2	750	88	34	713	836
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.40	7.24	0.6570	1.63	0.190	120.7	48.7	120.7	750	-30	33	627	630
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.40	7.24	0.6570	1.76	0.190	128.2	228.9	128.2	750	83	35	666	783
		COMMUNICATION													
Totals:											526	649	10,720	11,896	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	32.61	5.45	48.7	48.7	50.00	4.50	3.50	96.00	0	80	80
Totals:										0	80	80

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.61	0.00	48.7	0.0	3.00	3.80	12.75	0	77	77	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.61	45.00	131.8	0.0	3.00	3.80	12.75	-21	77	55	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.61	-45.00	325.6	0.0	3.00	3.80	12.75	21	77	98	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.61	-45.00	311.8	180.0	3.00	3.80	12.75	21	77	98	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.61	0.00	228.7	180.0	3.00	3.80	12.75	0	77	77	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.61	45.00	145.6	180.0	3.00	3.80	12.75	-21	77	55	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.81	0.00	318.8	228.8	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.17	0.00	318.8	228.8	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.49	0.00	318.8	228.8	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt Unknown, COMMUNICATION	20.82	0.00	318.8	228.8	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.82	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	17.53	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	16.49	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	15.40	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6	
Totals:										34	500	534

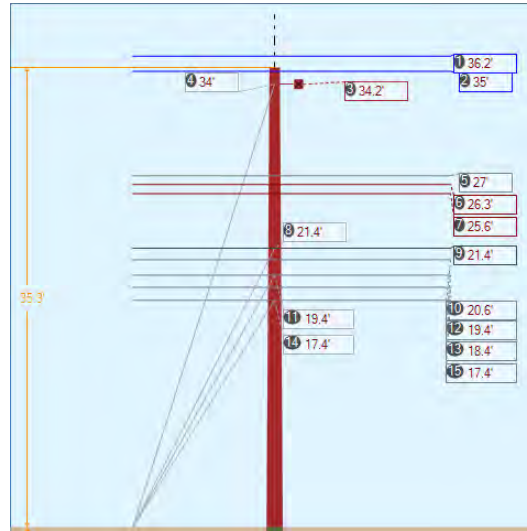
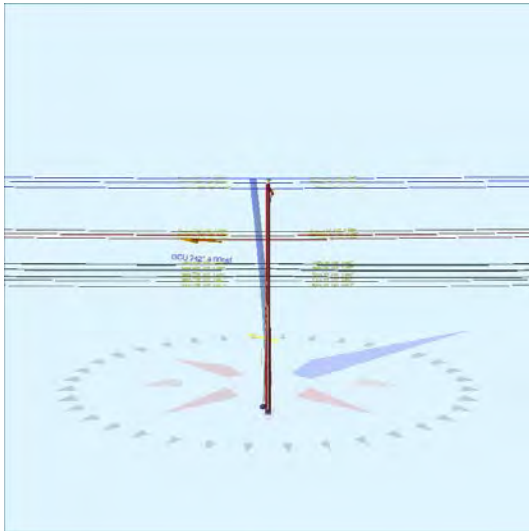
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down KU, UTILITY	30.52	0.00	18.00	0.375	75.00	30.0	59.3	0.273	33.78	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	463	421	0	0	0	258	
Totals:										0	0	0	258

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	18.00	30.0	20,000	1.00	20,000	421	0	2.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.87	33.19	10.56	8.33	7.32	11.37	1.60e+6	60.00	57.00	33.19	287,956	2858.77	76.92

Pole Num:	61W - 27220-260	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.68	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	39.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022075 Deg	Longitude:	-84.456941 Deg	Elevation:	880.32528568935		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	11.1	0.0
Groundline	11.1	0.0
Vertical	6.5	26.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,028	245.3
Groundline	10,028	245.3
GL Allowable	106,627	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.2	134.9		19.4	242.0	22.0	310.0
? EHS 3/8 (Down)			34.0	28.0	242.0	34.9	310.0
? Single Helix Anchor	13.4	138.3		19.5	242.0	24.3	320.0
? EHS 1/4 (Down)			21.4	23.9	242.0	32.4	320.0
? EHS 1/4 (Down)			19.4	21.8	242.0	29.8	320.0
? EHS 1/4 (Down)			17.4	19.6	242.0	27.0	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 245.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	937	182.6	22,323	222.6	20.9	1,844	516	4	1,848	27.2
Comms	520	101.2	8,102	80.8	7.6	669	1,156	10	679	10.0
GuyBraces	-1,190	-231.8	-24,250	-241.8	-22.7	-2,003	10,172	84	-1,919	-28.2
Pole	210	40.8	2,910	29.0	2.7	240	2,317	19	260	3.8
Crossarms	28	5.5	718	7.2	0.7	59	95	1	60	0.9
Insulators	9	1.7	225	2.3	0.2	19	106	1	19	0.3
Pole Load	513	100.0	10,028	100.0	9.4	828	14,363	119	947	13.9
Pole Reserve Capacity			96,599		90.6	5,972			5,853	86.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 245.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	379	73.9	7,652	76.3	7.2	632	5,868	48	681	10.0
Unknown, COMMUNICATION	-104	-20.2	-1,252	-12.5	-1.2	-103	6,083	50	-53	-0.8
Pole	210	40.8	2,910	29.0	2.7	240	2,317	19	260	3.8
<Undefined>	28	5.5	718	7.2	0.7	59	95	1	60	0.9
Totals:	513	100.0	10,028	100.0	9.4	828	14,363	119	947	13.9

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.19	0.00	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-90,606	0	212	-90,395
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.19	0.00	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	95,976	0	75	96,051
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-87,670	-94	205	-87,560
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	92,866	-81	73	92,858
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-87,670	54	205	-87,412
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	92,866	46	73	92,985
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.01	7.00	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-67,582	10	158	-67,415
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.01	7.00	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	71,587	8	56	71,652
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.32	7.05	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-65,849	10	154	-65,686
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.32	7.05	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	69,752	8	55	69,815
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.63	7.09	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-64,127	10	150	-63,968
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.63	7.09	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	67,928	8	53	67,989
											Totals:	27,470	-21	1,467	28,915

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, COMMUNICATION	21.44	7.36	1.3300	1.95	0.337	140.5	40.1	140.5	925	-23,318	24	255	-23,039
CATV	CATV 1.0	Unknown, COMMUNICATION	21.44	7.36	1.3300	1.63	0.337	120.7	228.7	120.7	925	24,700	21	91	24,812
Telco	TELE 1.5	Unknown, COMMUNICATION	20.55	7.41	1.5000	2.30	0.900	140.5	40.1	140.5	2,000	-48,337	43	267	-48,027
Telco	TELE 1.5	Unknown, COMMUNICATION	20.55	7.41	1.5000	1.91	0.900	120.7	228.7	120.7	2,000	51,202	37	95	51,333
Telco	TELE 1.5	Unknown, COMMUNICATION	19.37	7.49	1.5000	2.30	0.900	140.5	40.1	140.5	2,000	-45,540	43	252	-45,245

Telco	TELE 1.5	Unknown, COMMUNICATION	19.37	7.49	1.5000	1.91	0.900	120.7	228.7	120.7	2,000	48,239	37	90	48,366
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	7.55	0.6570	1.87	0.190	140.5	40.1	140.5	750	-16,266	14	139	-16,113
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	7.55	0.6570	1.56	0.190	120.7	228.7	120.7	750	17,230	12	49	17,291
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.44	7.61	0.6570	1.87	0.190	140.5	40.1	140.5	750	-15,378	14	131	-15,232
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.44	7.61	0.6570	1.56	0.190	120.7	228.7	120.7	750	16,289	12	47	16,348
Totals:												8,821	257	1,416	10,494

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		34.21	5.80	40.1	40.1	50.00	4.50	3.50	96.00	-42	971	929
Totals:										-42	971	929

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.32	0.00	0.0	0.0	13.00	9.00	10.50	0	164	164
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.40	45.00	122.7	0.0	6.00	3.50	7.50	-23	44	21
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.40	-45.00	317.4	0.0	6.00	3.50	7.50	13	44	57
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.01	0.00	314.4	224.4	2.00	3.00	3.19	1	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.32	0.00	314.4	224.4	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.63	0.00	314.4	224.4	2.00	3.00	3.19	1	12	13
Bolt	Three Bolt	Unknown, COMMUNICATION	21.44	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	20.55	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	19.37	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	18.44	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	17.44	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Totals:										3	289	292

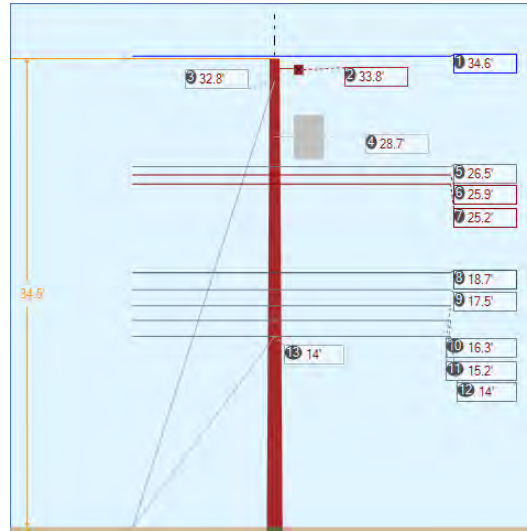
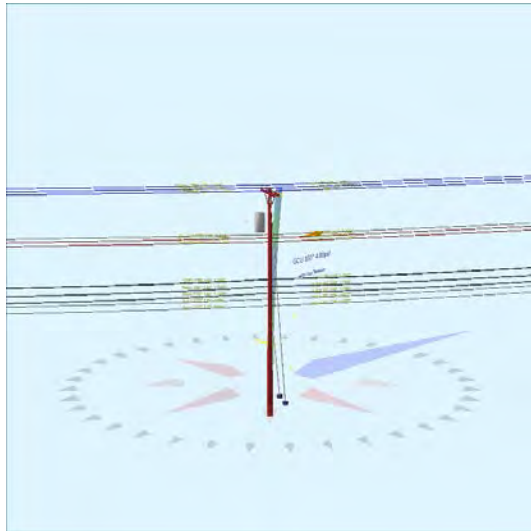
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	34.04	0.00	16.23	0.375	75.00	134.9	64.3	0.273	36.07	0.88
EHS 1/4	Down	Unknown, COMMUNICATION	21.44	0.00	13.44	0.25	75.00	138.3	57.7	0.121	23.59	0.48
EHS 1/4	Down	Unknown, COMMUNICATION	19.36	0.00	13.44	0.25	75.00	138.3	55.0	0.121	21.84	0.40
EHS 1/4	Down	Unknown, COMMUNICATION	17.44	0.00	13.44	0.25	75.00	138.3	52.2	0.121	20.26	0.34

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,833	4,393	3,886	3,500	1,687	-590	-19,285
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,938	1,762	1,431	1,209	765	-224	-4,569
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,784	1,622	1,305	1,070	748	-219	-4,050
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,617	1,470	1,171	925	718	-210	-3,508
Totals:										6,704	3,918	-1,244	-31,411

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	16.23	134.9	20,000	1.00	20,000	4,393	3,886	22.0
Single Helix Anchor			18.00	13.44	138.3	20,000	1.00	20,000	4,850	3,904	24.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.99	33.97	11.31	18.19	7.96	12.43	1.60e+6	60.00	57.00	35.32	221,348	2209.64	15.38

Pole Num:	62W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.54	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.17	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022360 Deg	Longitude:	-84.456619 Deg	Elevation:	880.750044357654		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.2	0.0
Groundline	24.2	0.0
Vertical	14.6	26.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,932	341.1
Groundline	17,932	341.1
GL Allowable	84,936	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	11.3	122.0		40.2	353.4	42.5	300.0
? EHS 3/8 (Down)			32.8	58.1	353.4	67.4	300.0
? Single Helix Anchor	7.4	122.0		21.3	353.4	23.1	300.0
? EHS 1/4 (Down)			14.0	71.3	353.4	84.8	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 341.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,732	240.2	50,399	281.1	59.3	6,631	514	5	6,635	97.6
Comms	1,597	140.4	16,496	92.0	19.4	2,170	1,152	11	2,181	32.1
GuyBraces	-3,464	-304.5	-52,286	-291.6	-61.6	-6,879	17,184	165	-6,714	-98.7
PowerEquipments	41	3.6	387	2.2	0.5	51	694	7	58	0.8
Pole	185	16.3	1,973	11.0	2.3	260	1,932	19	278	4.1
Crossarms	37	3.3	769	4.3	0.9	101	190	2	103	1.5
Insulators	9	0.8	194	1.1	0.2	26	127	1	27	0.4
Pole Load	1,137	100.0	17,932	100.0	21.1	2,359	21,793	209	2,568	37.8
Pole Reserve Capacity			67,004		78.9	4,441			4,232	62.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 341.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-682	-60.0	-1,320	-7.4	-1.6	-174	18,472	177	4	0.1
Unknown, COMMUNICATION	1,597	140.4	16,510	92.1	19.4	2,172	1,200	12	2,184	32.1
Pole	185	16.3	1,973	11.0	2.3	260	1,932	19	278	4.1
<Undefined>	37	3.3	769	4.3	0.9	101	190	2	103	1.5
Totals:	1,137	100.0	17,932	100.0	21.1	2,359	21,793	209	2,568	37.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	0.00	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	63,914	0	476	64,390
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	0.00	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-49,403	0	796	-48,607
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	63,914	-110	476	64,280
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-49,403	-129	796	-48,736
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	63,914	110	476	64,500

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-49,403	129	796	-48,477
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.51	6.64	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	48,880	18	364	49,261
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.51	6.64	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-37,782	21	609	-37,152
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.68	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	47,761	18	355	48,134
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.68	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-36,917	21	595	-36,302
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.23	6.72	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	46,526	18	346	46,890
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.23	6.72	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-35,962	21	580	-35,362
Totals:											76,039	115	6,664	82,818	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.72	7.12	1.3300	1.61	0.337	119.7	29.3	119.7	925	15,004	45	523	15,573
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.72	7.12	1.3300	1.96	0.337	140.5	220.1	140.5	925	-11,598	53	876	-10,669
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.47	7.19	1.5000	1.89	0.900	119.7	29.3	119.7	2,000	30,280	79	534	30,893
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.47	7.19	1.5000	2.31	0.900	140.5	220.1	140.5	2,000	-23,405	93	894	-22,418
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.29	7.27	1.5000	1.89	0.900	119.7	29.3	119.7	2,000	28,227	80	498	28,805
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.29	7.27	1.5000	2.31	0.900	140.5	220.1	140.5	2,000	-21,819	94	833	-20,891
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.22	7.33	0.6570	1.56	0.190	119.7	29.3	119.7	750	9,888	26	269	10,184
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.22	7.33	0.6570	1.90	0.190	140.5	220.1	140.5	750	-7,643	31	450	-7,162
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.03	7.40	0.6570	1.56	0.190	119.7	29.3	119.7	750	9,121	27	248	9,396
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.03	7.40	0.6570	1.90	0.190	140.5	220.1	140.5	750	-7,050	31	415	-6,603
		COMMUNICATION													
Totals:											21,006	559	5,541	27,107	

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-25KVA	KU, UTILITY	28.72	21.01	225.0	225.0	365.00	39.00	--	22.00	--	-534	1,171	636
Totals:												-534	1,171	636

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		33.83	5.45	29.3	29.3	50.00	4.50	3.50	96.00	0	1,263	1,263	
Totals:												0	1,263	1,263

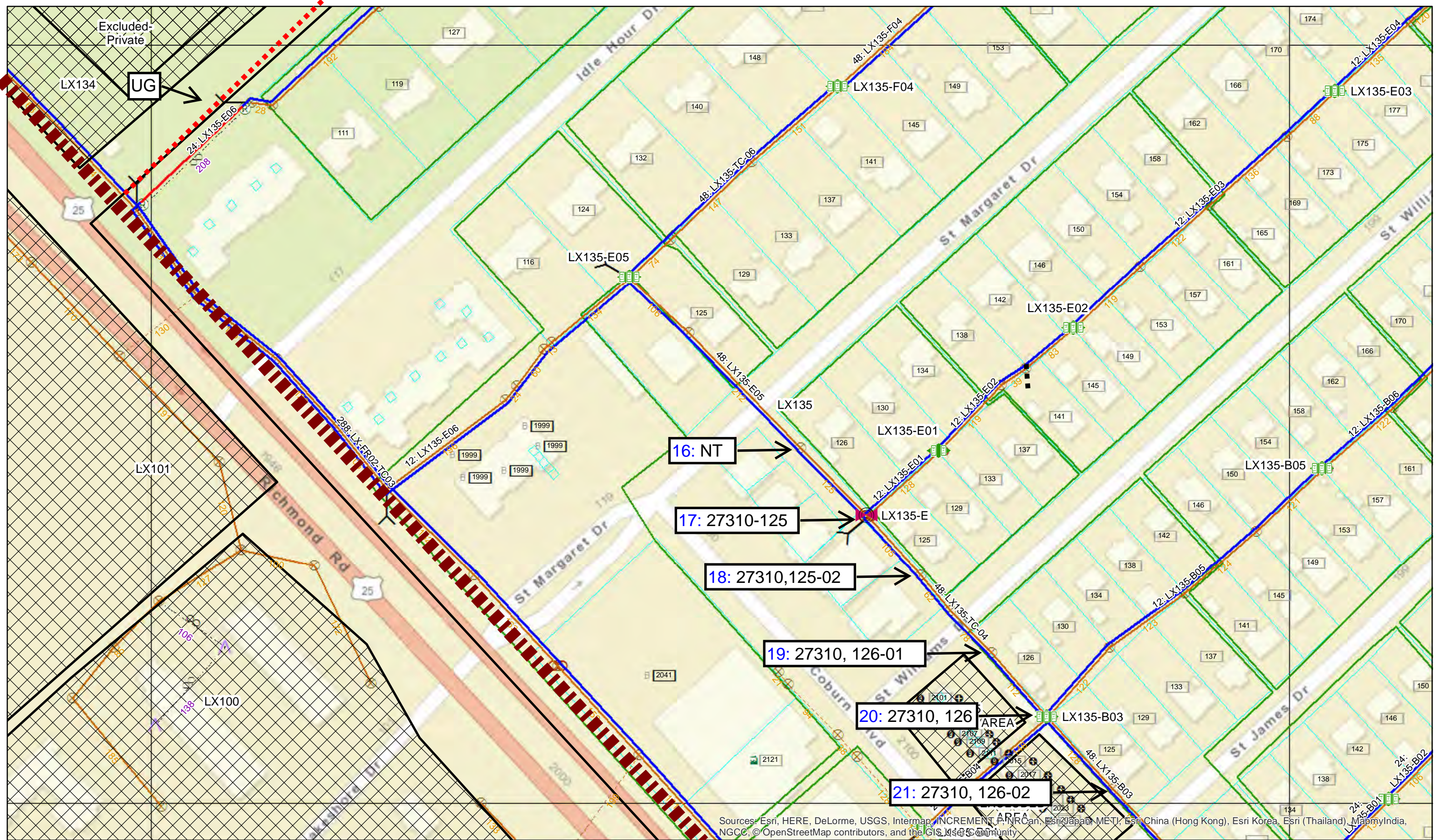
Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.02	0.00	29.3	0.0	6.00	3.50	7.50	0	85	85	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.02	45.00	112.4	0.0	6.00	3.50	7.50	-64	85	21	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.02	-45.00	306.2	0.0	6.00	3.50	7.50	64	85	149	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.51	0.00	304.7	214.7	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.90	0.00	304.7	214.7	2.00	3.00	3.19	2	12	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.23	0.00	304.7	214.7	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.72	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.47	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.29	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.22	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.03	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Totals:											28	291	319

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	32.84	0.00	11.34	0.375	75.00	122.0	70.7	0.273	33.14	1.68
EHS 1/4	Down	KU, UTILITY	14.03	0.00	7.42	0.25	75.00	122.0	61.9	0.121	14.18	0.86

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,341	8,492	8,048	7,596	2,661	-2,065	-65,162
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,076	4,614	4,268	3,765	2,010	-1,560	-20,756
Totals:										11,360	4,671	-3,625	-85,919

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	11.34	122.0	20,000	1.00	20,000	8,492	8,048	42.5
Single Helix Anchor		18.00	7.42	122.0	20,000	1.00	20,000	4,614	4,268	23.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.75	34.24	10.40	22.63	7.32	11.52	1.60e+6	60.00	57.00	34.46	149,578	1492.68	6.85



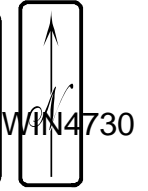
Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

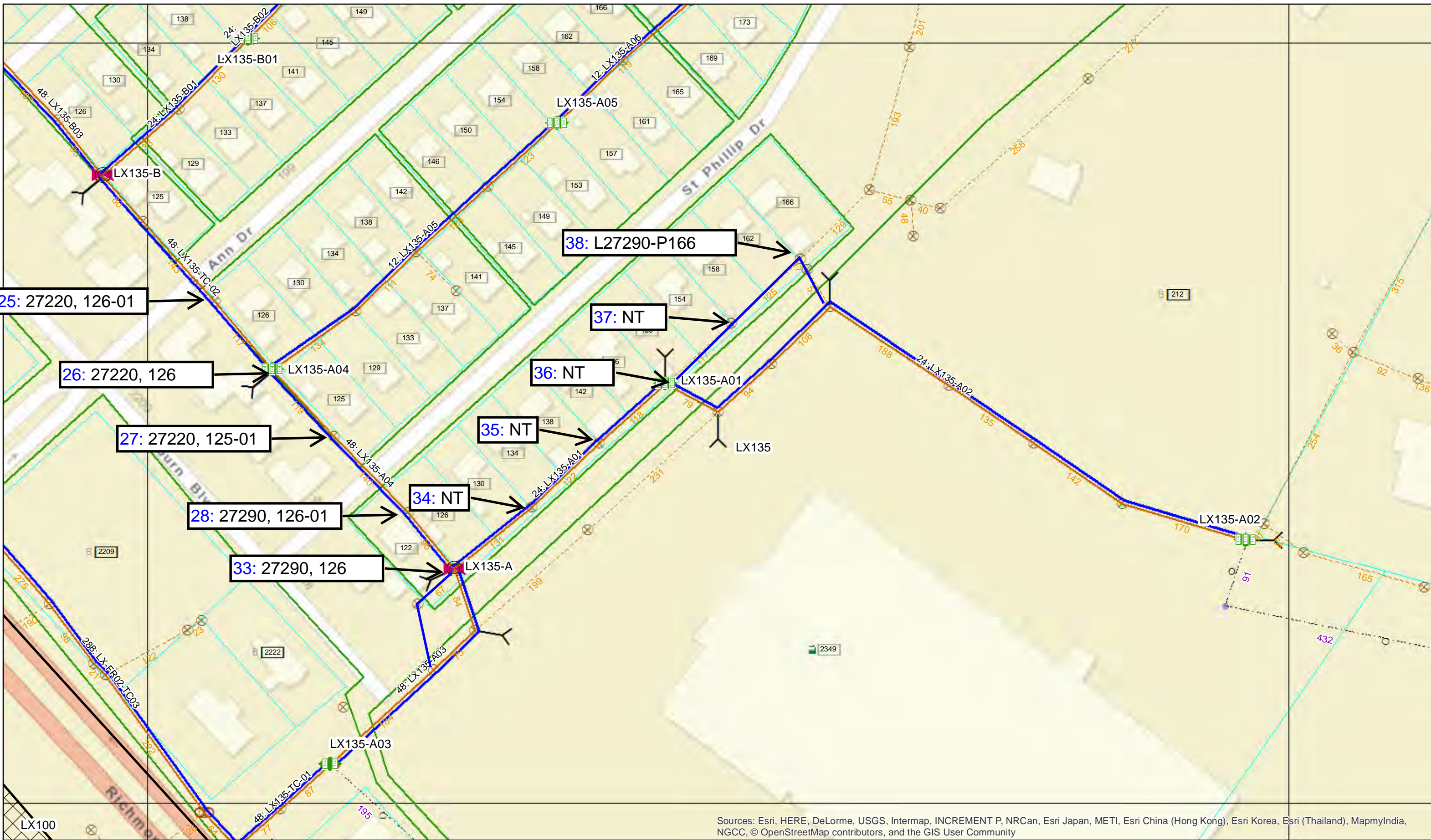
LXAV/33
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 LXTNXY.00457.CB
 DATE: 12/12/2017
 USER NAME: argris
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXA034
 PROJECT NUMBER:
 LXTNXY.00457.CB

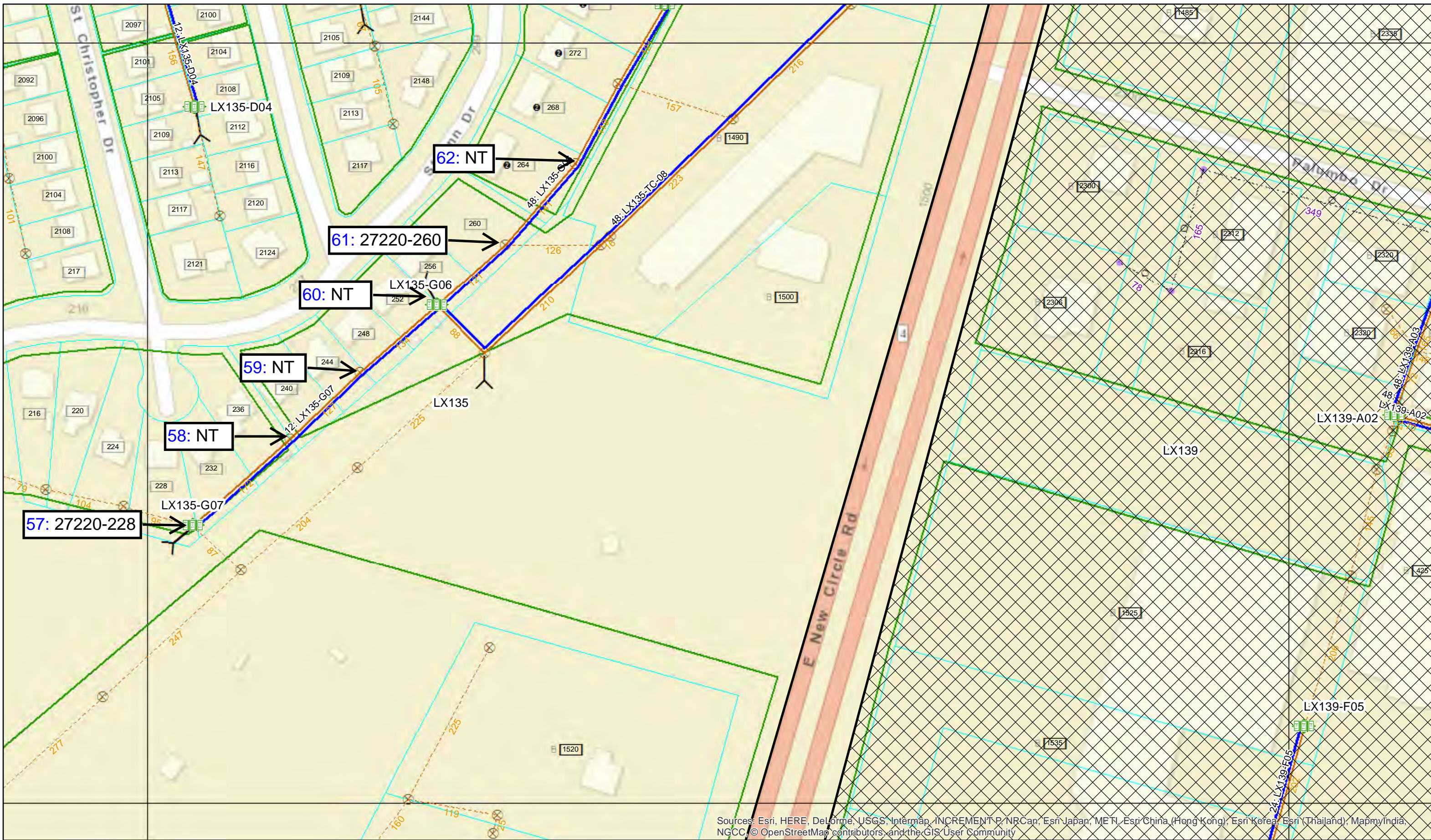
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

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LXAV/35
 PROJECT NUMBER:
 LXTNXY.00437.CB
 DATE: 12/12/2017
 USER NAME: argjis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Wednesday, March 14, 2018 9:36 AM
To: Windstream Jointuse
Cc: Hays, Sarah K
Subject: FW: LX135-01W
Attachments: Pole App Map.pdf; Map Key.pdf; LX135-01W Windstream Pole Inventory Report.pdf; O-Calcs.pdf; LX135-01W - METRONET POLE INVENTORY REPORT (1).xlsx

Good Morning,

Please see attached for proposal titled LX135-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

LX135-01W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		16W	NT	45/ 3	WS	2=Comms
KU	0	16W	NT		WS	
Windstream	25	16W	NT		WS	
Total Pole Count	25	16W	NT		WS	
Total Needing Make Ready	10	16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		17W	27310-125	40/ 3	WS	3=Elec
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		18W	27310-125-02	45/ 3	WS	1=None
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
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18W	27310-125-02		WS	
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19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
20W	27310-126	45/ 3	WS	3=Elec
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
21W	27310-126-02	40/ 3	WS	1=None
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
22W	27220-125-01	40/ 3	WS	1=None
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	

22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	
23W	27220-125	40/ 3	WS	1=None
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
24W	27220-127-02	40/ 2	WS	1=None
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
25W	27220-126-01	40/ 2	WS	2=Comms
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
26W	27220	40/ 3	WS	1=None
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	

27W	27220-125-02	40/ 3	WS	2=Comms
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
28W	27290-126-01	40/ 3	WS	2=Comms
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
33W	27290-126	45/ 3	WS	1=None
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
34W	NT	35/ 5	WS	2=Comms
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
35W	NT	40/ 3	WS	3=Elec
35W	NT		WS	

35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	
36W	NT	45/ 3	WS	1=None
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
36W	NT		WS	
37W	NT	45/ 3	WS	3=Elec
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
37W	NT		WS	
38W	L27290-P166-W	45/ 3	WS	1=None
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	

38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
38W	L27290-P166-WS		WS	
57W	27220-228	45/ 3	WS	1=None
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
57W	27220-228		WS	
58W	NT	40/ 3	WS	2=Comms
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
58W	NT		WS	
59W	NT	45/ 3	WS	1=None
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	
59W	NT		WS	

60W	NT	40/3	WS	1=None
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
60W	NT		WS	
61W	27220-260	40/2	WS	1=None
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
61W	27220-260		WS	
62W	NT	40/3	WS	1=None
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
62W	NT		WS	
END				

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
39.90	126 ST MARGARET DR	38.02139	-84.46603	KU		
		38.02139	-84.46603	KU		
		38.02139	-84.46603	KU		
		38.02139	-84.46603	KU		
		38.02139	-84.46603	KU		
		38.02139	-84.46603	KU		
		38.02139	-84.46603	Metronet		
Lower & Resag Charter		38.02139	-84.46603	Charter		
Lower Windstream		38.02139	-84.46603	Windstream		
24.60	2047 COBURN BLVD, 1	38.02117	-84.46575	KU		
		38.02117	-84.46575	KU		
		38.02117	-84.46575	KU		
Raise Neutral		38.02117	-84.46575	KU		
Raise Secondary		38.02117	-84.46575	KU		
Raise Secondary		38.02117	-84.46575	KU		
		38.02117	-84.46575	KU		
Raise streetligh drip loop		38.02117	-84.46575	KU		
		38.02117	-84.46575	Metronet		
		38.02117	-84.46575	Metronet		
		38.02117	-84.46575	Charter		
		38.02117	-84.46575	Charter		
		38.02117	-84.46575	Windstream		
		38.02117	-84.46575	Windstream		
		38.02117	-84.46575	Windstream		
		38.02117	-84.46575	Windstream		
		38.02117	-84.46575	Windstream		
		38.02117	-84.46575	Windstream		
41.90	125 ST WILLIAM DR	38.02091	-84.46549	KU		
		38.02091	-84.46549	KU		
		38.02091	-84.46549	KU		
		38.02091	-84.46549	KU		
		38.02091	-84.46549	KU		
		38.02091	-84.46549	KU		
		38.02091	-84.46549	KU		

		38.02091	-84.46549	Metronet	
		38.02091	-84.46549	Charter	
		38.02091	-84.46549	Windstream	
		38.02091	-84.46549	Windstream	
		38.02091	-84.46549	Windstream	
	41.60	126 ST WILLIAM DR	38.02064	-84.46514	KU
			38.02064	-84.46514	KU
			38.02064	-84.46514	KU
			38.02064	-84.46514	KU
			38.02064	-84.46514	KU
			38.02064	-84.46514	Metronet
			38.02064	-84.46514	Charter
			38.02064	-84.46514	Windstream
			38.02064	-84.46514	Windstream
			38.02064	-84.46514	Windstream
	58.30	2115 COBURN BLVD	38.02041	-84.46491	KU
			38.02041	-84.46491	KU
			38.02041	-84.46491	KU
Resag Neutral			38.02041	-84.46491	KU
Resag Secondary			38.02041	-84.46491	KU
Resag Secondary			38.02041	-84.46491	KU
			38.02041	-84.46491	Metronet
			38.02041	-84.46491	Metronet
			38.02041	-84.46491	Charter
			38.02041	-84.46491	Charter
			38.02041	-84.46491	Windstream
			38.02041	-84.46491	Windstream
			38.02041	-84.46491	Windstream
			38.02041	-84.46491	Windstream
			38.02041	-84.46491	Windstream
			38.02041	-84.46491	Windstream
			38.02041	-84.46491	Windstream
	41.80	125 ST JAMES DR	38.02012	-84.46461	KU
			38.02012	-84.46461	KU
			38.02012	-84.46461	KU
			38.02012	-84.46461	KU
			38.02012	-84.46461	KU
			38.02012	-84.46461	Metronet
			38.02012	-84.46461	Charter
			38.02012	-84.46461	Windstream
			38.02012	-84.46461	Windstream
	33.40	126 ST JAMES DR	38.01986	-84.46426	KU
			38.01986	-84.46426	KU
			38.01986	-84.46426	KU
			38.01986	-84.46426	KU

			38.01986	-84.46426	Metronet
			38.01986	-84.46426	Charter
			38.01986	-84.46426	Windstream
			38.01986	-84.46426	Windstream
Attach to new pole	41.80	2137 COBURN BLVD, 4	38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Charter
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole	24.70	125 ST ANN DR	38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	Metronet
Attach to new pole			38.01941	-84.46376	Charter
Attach to new pole			38.01941	-84.46376	Windstream
Attach to new pole			38.01941	-84.46376	Windstream
	25.80	126 ST ANN DR	38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	Metronet
Lower Charter			38.01912	-84.46343	Charter
			38.01912	-84.46343	Windstream
			38.01912	-84.46343	Windstream
Attach to new pole	27.20	2205 COBURN BLVD, 4	38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	Metronet
Attach to new pole			38.01890	-84.46321	Charter
Attach to new pole			38.01890	-84.46321	Windstream
Attach to new pole			38.01890	-84.46321	Windstream

	26.30	125 ST PHILLIP DR	38.01867	-84.46295	KU
			38.01867	-84.46295	KU
			38.01867	-84.46295	KU
			38.01867	-84.46295	KU
			38.01867	-84.46295	KU
			38.01867	-84.46295	KU
			38.01867	-84.46295	Metronet
Lower Charter			38.01867	-84.46295	Charter
Lower Windstream			38.01867	-84.46295	Windstream
Lower Windstream			38.01867	-84.46295	Windstream
Trees blocking midspan	23.70	126 ST PHILLIP DR	38.01841	-84.46261	KU
			38.01841	-84.46261	KU
			38.01841	-84.46261	KU
			38.01841	-84.46261	KU
			38.01841	-84.46261	KU
			38.01841	-84.46261	Metronet
			38.01841	-84.46261	Charter
			38.01841	-84.46261	Windstream
			38.01841	-84.46261	Windstream
Attach to new pole	43.00	122 ST PHILLIP DR	38.01820	-84.46238	KU
Attach to new pole			38.01820	-84.46238	KU
Attach to new pole			38.01820	-84.46238	KU
Attach to new pole			38.01820	-84.46238	KU
Attach to new pole			38.01820	-84.46238	KU
Attach to new pole			38.01820	-84.46238	KU
Attach to new pole			38.01820	-84.46238	Metronet
Attach to new pole			38.01820	-84.46238	Charter
Attach to new pole			38.01820	-84.46238	Windstream
Attach to new pole			38.01820	-84.46238	Windstream
Attach to new pole			38.01820	-84.46238	Windstream
Attach to new pole			38.01820	-84.46238	Windstream
	35.90	134 ST PHILLIP DR	38.01842	-84.46205	KU
			38.01842	-84.46205	KU
			38.01842	-84.46205	KU
			38.01842	-84.46205	KU
			38.01842	-84.46205	KU
			38.01842	-84.46205	Metronet
Lower Charter			38.01842	-84.46205	Charter
Lower Windstream			38.01842	-84.46205	Windstream
Lower Windstream			38.01842	-84.46205	Windstream
Lower Windstream			38.01842	-84.46205	Windstream
	29.10	142 ST PHILLIP DR	38.01867	-84.46175	KU
			38.01867	-84.46175	KU

	38.01867	-84.46175	KU
	38.01867	-84.46175	KU
	38.01867	-84.46175	KU
Extend secondary riser	38.01867	-84.46175	KU
	38.01867	-84.46175	Metronet
	38.01867	-84.46175	Charter
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
23.60 150 ST PHILLIP DR	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	Metronet
	38.01885	-84.46142	Charter
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
32.20 158 ST PHILLIP DR	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
Extend secondary riser	38.01905	-84.46110	KU
	38.01905	-84.46110	Metronet
	38.01905	-84.46110	Charter
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
45.10 166 ST PHILLIP DR	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Charter

	g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Power	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped
Primary	34'8"				N	Y		D: Pedestrian Only 9.5'			
Transformer	27'0"				N	Y					
Neutral	25'11"				N	Y					
Secondary	25'2"				N	Y					
Secondary	24'6"				N	Y					
Streetlight	23'5"				N	Y					
Communication		21'2"			N	Y					
Communication	20'6"	19'3"		23	N	Y					
Communication	19'3"	18'3"	16'5"		N	Y					
Primary	32'9"				Y	N		D: Pedestrian Only 9.5'			
Primary	30'5"				Y	N					
Transformer	25'6"				Y	N					
Neutral	23'11"	24'10"			Y	N					
Secondary	23'1"	24'2"			Y	N					
Secondary	22'4"	23'6"			Y	N					
Streetlight	21'4"				Y	N					
Streetlight Drip Loop	20'11"	21'4"			Y	N					
Communication		20'2"			Y	N					
Communication		19'10"			Y	N					
Communication	19'2"				Y	N					
Communication	18'11"			44	Y	N					
Communication	18'5"				Y	N					
Communication	18'2"				Y	N					
Communication	17'9"				Y	N					
Communication	17'5"				Y	N					
Communication	16'10"				Y	N					
Communication	16'4"		15'5"		Y	N					
Primary	39'8"				N	N		D: Pedestrian Only 9.5'			
Transformer	31'5"				N	N					
Neutral	30'3"				N	N					
Secondary	29'1"				N	N					
Secondary	28'4"				N	N					
Streetlight	26'3"				N	N					
Streetlight Drip Loop	25'7"				N	N					

Communication	21'6"		N	N	
Communication	20'6"	113	N	N	
Communication	19'4"		N	N	
Communication	18'3"		N	N	
Communication	17'3"	16'6"	N	N	
Primary	38'6"		N	N	D: Pedestrian Only 9.5'
Neutral	30'10"		N	N	
Secondary	29'11"		N	N	
Secondary	28'11"		N	N	
Streetlight	27'6"		N	N	
Communication	22'7"		N	N	
Communication	21'3"	72	N	N	
Communication	20'2"		N	N	
Communication	19'0"		N	N	
Communication	18'0"	15'2"	N	N	
Primary	38'0"		N	Y	D: Pedestrian Only 9.5'
Primary	33'6"		N	Y	
Transformer	27'4"		N	Y	
Neutral	26'9"		N	Y	
Secondary	25'6"		N	Y	
Secondary	24'3"		N	Y	
Communication	20'2"		N	Y	
Communication	19'10"		N	Y	
Communication	18'10"	22	N	Y	
Communication	17'10"		N	Y	
Communication	16'10"		N	Y	
Communication	16'2"		N	Y	
Communication	15'9"		N	Y	
Communication	15'1"		N	Y	
Communication	14'7"		N	Y	
Communication	14'1"	16'2"	N	Y	
Communication	13'7"		N	Y	
Primary	33'7'		N	N	B:Residential/Over Driveways
Neutral	26'2"		N	N	
Secondary Riser	25'6"		N	N	
Secondary	25'1'		N	N	
Secondary	24'3"		N	N	
Communication	20'11"		N	N	
Communication	19'11"	71	N	N	
Communication	19'0"		N	N	
Communication	18'0"	19'7"	N	N	
Primary	33'7"		N	N	D: Pedestrian Only 9.5'
Neutral	26'1"		N	N	
Secondary	25'1"		N	N	
Secondary	24'2"		N	N	

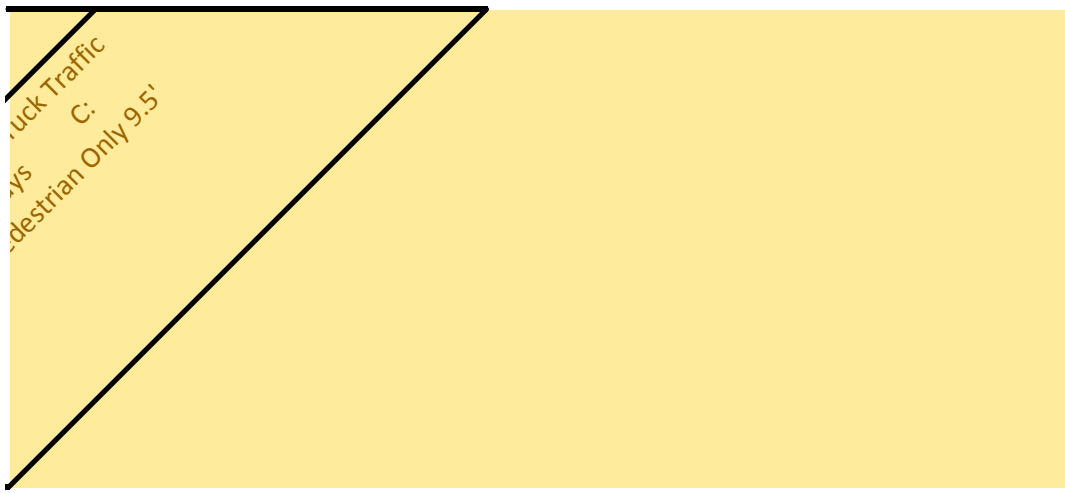
Communication	20'10"		N	N		
Communication	19'10"		49	N	N	
Communication	18'10"			N	N	
Communication	17'10"	13'6"		N	N	
Primary	32'8"			N	N	D: Pedestrian Only 9.5'
Transformer	25'10"			N	N	
Neutral	24'10"			N	N	
Secondary	24'2"			N	N	
Secondary	23'6"			N	N	
Streetlight	21'2"			N	N	
Communication	20'2"			N	N	
Communication	19'10"			N	N	
Communication	18'10"		71	N	N	
Communication	17'10"			N	N	
Communication	17'6"	15'1"		N	N	
Primary	33'2"			N	N	B:Residential/Over Driveways
Primary	32'10"			N	N	
Neutral	27'10"			N	N	
Secondary	26'10"			N	N	
Secondary	25'10"			N	N	
Communication	22'6"			N	N	
Communication	21'6"		74	N	N	
Communication	20'6"			N	N	
Communication	19'6"	17'6"		N	N	
Primary	33'11"			N	N	D: Pedestrian Only 9.5'
Neutral	26'3"			N	N	
Secondary	25'6"			N	N	
Secondary	24'9"			N	N	
Communication	21'4"			N	N	
Communication	21'4"	20'4"	35	N	N	
Communication	19'2"			N	N	
Communication	18'3"	16'5"		N	N	
Primary	34'0"			N	N	D: Pedestrian Only 9.5'
Transformer	27'8"			N	N	
Neutral	26'8"			N	N	
Secondary	25'8"			N	N	
Secondary	24'8"			N	N	
Streetlight	23'8"			N	N	
Communication	21'4"			N	N	
Communication	20'4"		41	N	N	
Communication	19'4"			N	N	
Communication	18'4"	16'0"		N	N	

Primary	32'10"			Y	N	D: Pedestrian Only 9.5'
Neutral	25'9"			Y	N	
Secondary	25'0"			Y	N	
Secondary Riser	24'8"			Y	N	
Secondary	24'4"			Y	N	
Secondary Drip Loop	23'10"			Y	N	
Communication		20'6"		Y	N	
Communication	20'9"	19'6"	42	Y	N	
Communication	19'9"	18'6"		Y	N	
Communication	18'10"	17'6"	17'5"	Y	N	
Primary	33'10"			N	N	D: Pedestrian Only 9.5'
Neutral	25'9"			N	N	
Secondary Riser	25'2"			N	N	
Secondary	24'5"			N	N	
Secondary	23'9"			N	N	
Communication		20'3"		N	N	
Communication	20'3"	19'3"	UNK	N	N	
Communication	19'2"	18'3"		N	N	
Communication	18'1"	17'3"	UNK	N	N	
Primary		37'8"		N	N	D: Pedestrian Only 9.5'
Primary		34'8"		N	N	
Neutral		28'8"		N	N	
Secondary		27'8"		N	N	
Secondary		26'8"		N	N	
Transformer		29'8"		N	N	
Communication		23'4"		N	N	
Communication		22'4"	40	N	N	
Communication		21'4"		N	N	
Communication		21'0"		N	N	
Communication		20'4"		N	N	
Communication		20'0"	12'10"	N	N	
Primary	29'0"			Y	N	D: Pedestrian Only 9.5'
Neutral	22'11"			Y	N	
Secondary	22'1"			Y	N	
Secondary	21'4"			Y	N	
Secondary Riser	20'9"			Y	N	
Communication		17'6"		Y	N	
Communication	18'3"	16'6"	40	Y	N	
Communication	17'6"	15'5"		Y	N	
Communication	16'9"	14'5"		Y	N	
Communication	15'5"	13'5"	12'2"	Y	N	
Primary	33'5"			Y	N	D: Pedestrian Only 9.5'
Transformer	26'7"			Y	N	

Neutral	26'2"			Y	N
Secondary	25'5"			Y	N
Secondary	24'9"			Y	N
Secondary Riser	20'7"	24'0"		Y	N
Communication		19'8"		Y	N
Communication	18'8"		76	Y	N
Communication	17'11"			Y	N
Communication	17'4"			Y	N
Communication	16'2"			Y	N
Communication	14'9"	12'7"		Y	N
Primary	36'1"			N	N D: Pedestrian Only 9.5'
Primary	35'8"			N	N
Neutral	28'10"			N	N
Secondary	28'1"			N	N
Secondary	27'5"			N	N
Communication		21'5"		N	N
Communication	20'5"		69	N	N
Communication	19'2"			N	N
Communication	18'1"			N	N
Communication	16'0"	12'6"		N	N
Primary	36'5"			N	N D: Pedestrian Only 9.5'
Primary	36'0"			N	N
Transformer	29'6"			N	N
Neutral	28'6"			N	N
Secondary	27'9"			N	N
Secondary	27'0"			N	N
Secondary Riser	25'3"	26'6"		N	N
Communication		22'5"		N	N
Communication	21'5"		58	N	N
Communication	20'8"			N	N
Communication	19'9"			N	N
Communication	18'3"	13'2"		N	N
Primary	36'5"			N	N D: Pedestrian Only 9.5'
Primary	35'10"			N	N
Primary	31'10"			N	N
Neutral	28'1"			N	N
Neutral	27'7"			N	N
Secondary	26'9"			N	N
Secondary	26'0"			N	N
Down Guy	24'11"			N	N
Communication		19'0"		N	N
Communication		18'8"		N	N
Down Guy	17'8"	16'10"	82	N	N
Communication	17'2"			N	N

Communication	17'0"		N	N	
Communication	16'5"		N	N	
Communication	15'6"		N	N	
Communication	13'7"		N	N	
Primary	39'0"		N	N	D: Pedestrian Only 9.5'
Primary	34'4"		N	N	
Neutral	29'2"		N	N	
Neutral	28'11"		N	N	
Secondary	28'7"		N	N	
Secondary	28'2"		N	N	
Secondary	27'11"		N	N	
Secondary	27'1"		N	N	
Communication	22'7"		N	N	
Communication	21'7"	61	N	N	
Communication	20'7"		N	N	
Communication	19'5"		N	N	
Communication	18'10"		N	N	
Communication	18'5"		N	N	
Communication	18'0"		N	N	
Communication	17'3"		N	N	
Communication	16'4"		N	N	
Communication	15'7"	10'8"	N	N	
Primary	31'10"		Y	N	D: Pedestrian Only 9.5'
Neutral	29'0"		Y	N	
Secondary	28'0"		Y	N	
Secondary	27'5"		Y	N	
Transformer	22'5"		Y	N	
Communication	19'1"		Y	N	
Communication	19'6"	18'2"	UNK	Y	N
Communication	18'2"	17'2"	Y	N	
Communication	16'9"	16'2"	Y	N	
Communication	15'8"	15'2"	Y	N	
Communication	14'6"	14'2"	UNK	Y	N
Primary	37'4"		N	N	D: Pedestrian Only 9.5'
Neutral	33'0"		N	N	
Secondary	32'3"		N	N	
Secondary	31'7"		N	N	
Communication	24'4"		N	N	
Communication	23'4"	84	N	N	
Communication	22'5"		N	N	
Communication	21'6"		N	N	
Communication	20'5"		N	N	
Communication	19'5"	17'0"	N	N	

Primary	32'3"		N	N	D: Pedestrian Only 9.5'
Neutral	28'10"		N	N	
Secondary	28'1"		N	N	
Secondary	27'6"		N	N	
Communication		21'10"	N	N	
Communication	20'10"		56	N	N
Communication	18'9"			N	N
Communication	17'7"			N	N
Communication	16'6"			N	N
Communication	15'5"	14'11"		N	N
Primary	34'2"		N	N	D: Pedestrian Only 9.5'
Neutral	27'0"		N	N	
Secondary	26'4"		N	N	
Secondary	25'8"		N	N	
Communication		22'4"		N	N
Communication	21'5"		16'11"	N	N
Communication	20'5"			N	N
Communication	19'3"			N	N
Communication	18'5"			N	N
Communication	17'5"	12'11"		N	N
Primary	33'11"		N	N	D: Pedestrian Only 9.5'
Transformer	27'3"		N	N	
Neutral	26'6"		N	N	
Secondary	25'11"		N	N	
Secondary	25'3"		N	N	
Communication		19'9"		N	N
Communication	18'9"		55	N	N
Communication	17'5"			N	N
Communication	16'3"			N	N
Communication	15'3"			N	N
Communication	14'0"	14'8"		N	N



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

**PROPOSAL #: LX135-01W
Submit in Duplicate**

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # Lauren Sandefur 812.213.13238
EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Lauren Sandefur

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	NT	16W	2029 Coburn Blvd, Lexington 40502	45, 3, WXM	19'3"	19'7"	24'6"	(1)Fiber/Strand			
2	27310-125	17W	2041 Coburn Blvd, Lexington 40502	40, 3, WXM	18'4"	N/A	22'4"	(1)Fiber/Strand			
3	27310-125-02	18W	2053 Coburn Blvd, Lexington 40502	45, 3, WXM	17'6"	19'5"	28'4"	(1)Fiber/Strand			
4	27310-126-01	19W	2101 Coburn Blvd, Lexington 40502	45, 1, WXM	19'0"	19'0"	28'11"	(1)Fiber/Strand			
5	27310-126	20W	2115 Coburn Blvd, Lexington 40502	45, 3, WXM	16'10"	N/A	24'3"	(1)Fiber/Strand			
6	27310-126-02	21W	2125 Coburn Blvd, Lexington 40502	40, 3, WXM	19'1"	19'1"	24'3"	(1)Fiber/Strand			
7	27220-125-01	22W	2129 Coburn Blvd, Lexington 40502	40, 3, WXM	18'10"	18'10"	24'2"	(1)Fiber/Strand			
8	27220-125	23W	2131 Coburn Blvd, Lexington 40502	40, 3, WXM	15'8"	N/A	23'6"	(1)Fiber/Strand			
9	27220-127-02	24W	2145 Coburn Blvd, Lexington 40502	40, 2, WXM	20'6"	N/A	25'10"	(1)Fiber/Strand			
10	27220-126-01	25W	2201 Coburn Blvd, Lexington 40502	40, 2, WXM	19'2"	N/A	24'9"	(1)Fiber/Strand			
11	27220	26W	2209 Coburn Blvd, Lexington 40502	40, 2, WXM	17'7"	N/A	24'9"	(1)Fiber/Strand			
12	27220-125-02	27W	2215 Coburn Blvd, Lexington 40502	40, 3, WXM	19'9"	N/A	24'4"	(1)Fiber/Strand			
13	27290-126-01	28W	126 St Phillip Dr, Lexington 40502	40, 3, WXM	19'3"	19'3"	23'9"	(1)Fiber/Strand			
14	27290-126	33W	126 St Phillip Dr, Lexington 40502	45, 3, WXM	21'4"	21'4"	26'8"	(1)Fiber/Strand			
15	NT	34W	134 St Phillip Dr, Lexington 40502	40, 3, WXM	17'0"	N/A	21'4"	(1)Fiber/Strand			
16	NT	35W	142 St Phillip Dr, Lexington 40502	40, 3, WXM	16'9"	N/A	24'9"	(1)Fiber/Strand			
17	NT	36W	150 St Phillip Dr, Lexington 40502	45, 3, WXM	19'2"	N/A	27'5"	(1)Fiber/Strand			
18	NT	37W	158 St Phillip Dr, Lexington 40502	45, 3, WXM	20'8"	N/A	27'0"	(1)Fiber/Strand			
19	L27290-P166-WS	38W	166 St Phillip Dr, Lexington 40502	45, 3, WXM	16'5"	N/A	26'0"	(2)Fiber/Strand			
20	27220-228	57W	228 St Ann Dr, Lexington 40502	45, 3, WXM	19'1"	19'9"	27'1"	(1)Fiber/Strand			

21	NT	58W	240 St Ann Dr, Lexington 40502	40, 3, WXM	18'4"	N/A	27'5"		(1)Fiber/Strand			
22	NT	59W	248 St Ann Dr, Lexington 40502	45, 3, WXM	22'7"	N/A	31'7"		(1)Fiber/Strand			
23	NT	60W	256 St Ann Dr, Lexington 40502	40, 3, WXM	18'10"	N/A	27'6"		(1)Fiber/Strand			
24	27220-260	61W	260 St Ann Dr, Lexington 40502	40, 2, WXM	20'7"	N/A	25'8"		(1)Fiber/Strand			
25	NT	62W	266 St Ann Dr, Lexington 40502	40, 3, WXM	17'6"	16'3"	25'3"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

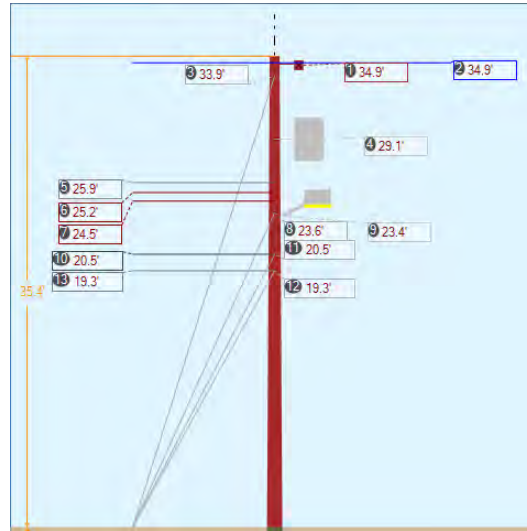
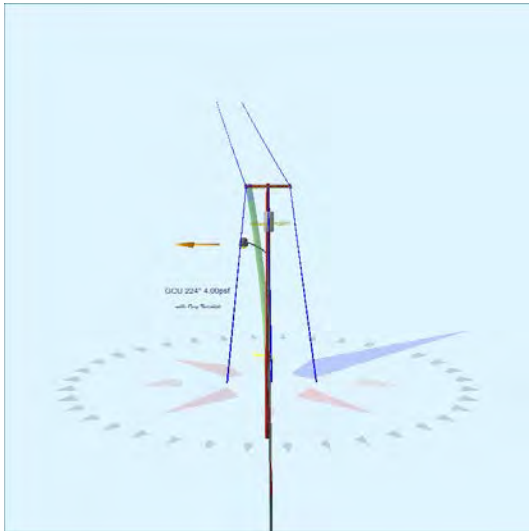
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX-00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN) Footage	ROADS
AERIAL (SLACK SPAN) Footage	WORK POINTS
NEW / PROPOSED TRENCH Footage	RAILROADS
EXISTING INHERITED TRENCH Footage	

Pole Num:	16W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.60	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.16	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021392 Deg	Longitude:	-84.466030 Deg	Elevation:	897.380271370154		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.9	0.0
Groundline	39.9	0.0
Vertical	20.7	26.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,956	209.7
Groundline	29,956	209.7
GL Allowable	84,844	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.4	315.0		83.3	224.1	85.1	140.0
? EHS 3/8 (Down)			33.9	55.2	224.1	62.5	140.0
? EHS 3/8 (Down)			23.7	65.4	224.1	73.0	140.0
? Single Helix Anchor	16.4	315.0		35.0	224.1	35.4	140.0
? EHS 1/4 (Down)			20.5	59.7	224.1	66.6	140.0
? EHS 1/4 (Down)			19.3	57.1	224.1	63.7	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 209.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,485	276.0	80,874	270.0	95.3	7,994	364	3	7,998	117.6
Comms	1,122	88.9	17,950	59.9	21.2	1,774	261	3	1,777	26.1
GuyBraces	-3,619	-286.6	-74,046	-247.2	-87.3	-7,319	28,803	277	-7,042	-103.6
PowerEquipments	40	3.2	1,131	3.8	1.3	112	694	7	118	1.7
Pole	188	14.9	2,750	9.2	3.2	272	1,984	19	291	4.3
Crossarms	2	0.2	60	0.2	0.1	6	190	2	8	0.1
Streetlights	19	1.5	555	1.9	0.7	55	86	1	56	0.8
Insulators	24	1.9	682	2.3	0.8	67	87	1	68	1.0
Pole Load	1,263	100.0	29,956	100.0	35.3	2,961	32,468	312	3,273	48.1
Pole Reserve Capacity			54,888		64.7	3,839			3,527	51.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 209.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,098	86.9	27,711	92.5	32.7	2,739	21,836	210	2,949	43.4
Unknown, COMMUNICATION	-26	-2.0	-564	-1.9	-0.7	-56	8,458	81	25	0.4
Pole	188	14.9	2,750	9.2	3.2	272	1,984	19	291	4.3
<Undefined>	2	0.2	60	0.2	0.1	6	190	2	8	0.1
Totals:	1,263	100.0	29,956	100.0	35.3	2,961	32,468	312	3,273	48.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	18.19	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	25,176	3	1,068	26,247
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.89	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	25,176	12	1,068	26,256
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.18	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	25,176	-10	1,068	26,234
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.89	0.3980	0.65	0.145	189.1	311.4	189.1	2,128	-19,604	16	1,691	-17,897
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.90	48.18	0.3980	0.65	0.145	189.1	311.4	189.1	2,128	-19,604	-19	1,691	-17,932
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.72	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	18,679	6	792	19,477
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.15	6.77	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	18,144	6	770	18,920
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.51	6.80	0.3980	0.27	0.145	121.0	134.8	121.0	2,128	17,683	6	750	18,439
Totals:											90,827	19	8,897	99,743	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.52	7.04	1.3300	1.65	0.337	121.0	134.8	121.0	925	6,434	15	1,279	7,728
Telco	TELE 1.5	Unknown, COMMUNICATION	19.28	7.11	1.5000	1.92	0.900	121.0	134.8	121.0	2,000	13,071	26	1,314	14,410
Totals:											19,505	40	2,593	22,138	

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-25KVA	KU, UTILITY	29.15	21.03	130.0	130.0	365.00	39.00	--	22.00	--	218	1,178	1,395
Totals:												218	1,178	1,395

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.90	5.44	133.1	133.1	50.00	4.50	3.50	96.00	0	74	74	
Totals:												0	74	74

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.38	4.37	220.0	220.0	45.00	24.00	20.00	3.00	36.00	235	449	685
Totals:												235	449	685

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	0.00	133.1	1.7	3.00	3.80	12.75	4	159	164	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	45.00	216.2	1.7	3.00	3.80	12.75	46	159	205	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	-45.00	50.0	1.7	3.00	3.80	12.75	-37	159	122	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	45.00	230.0	178.3	3.00	3.80	12.75	38	159	197	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.90	-45.00	36.2	178.3	3.00	3.80	12.75	-45	159	114	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.90	0.00	134.8	134.8	2.00	3.00	3.19	1	12	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.15	0.00	134.8	134.8	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.51	0.00	134.8	134.8	2.00	3.00	3.19	1	11	12	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.52	0.00	134.8	224.8	5.00	3.00	0.00	1	0	1	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.28	0.00	134.8	224.8	5.00	3.00	0.00	1	0	1	
Totals:											10	830	841

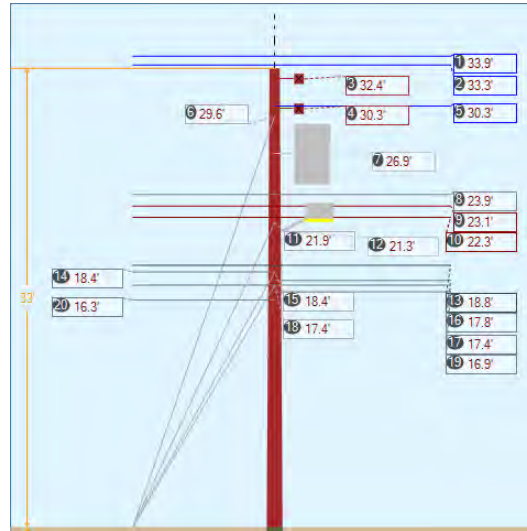
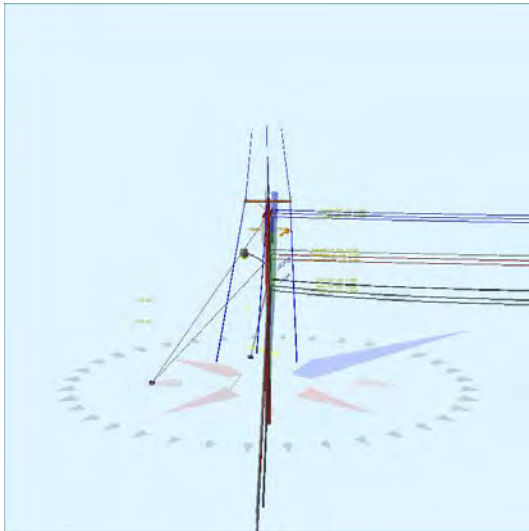
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	33.90	0.00	19.35	0.375	75.00	315.0	60.1	0.273	37.38	1.80
EHS 3/8	Down	KU, UTILITY	23.65	0.00	19.35	0.375	75.00	315.0	50.5	0.273	28.83	1.65
EHS 1/4	Down	Unknown, COMMUNICATION	20.52	0.00	16.40	0.25	75.00	315.0	51.2	0.121	24.54	1.24
EHS 1/4	Down	Unknown, COMMUNICATION	19.28	0.00	16.40	0.25	75.00	315.0	49.5	0.121	23.56	1.14

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,666	7,878	7,646	6,627	3,815	-1,007	-33,207
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,125	9,204	9,065	6,999	5,761	-1,522	-35,278
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,984	3,622	3,573	2,784	2,239	-591	-11,810
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,812	3,466	3,419	2,598	2,222	-587	-11,027
Totals:										19,007	14,037	-3,707	-91,322

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	19.35	315.0	20,000	1.00	20,000	17,023	16,653	85.1
Single Helix Anchor			18.00	16.40	315.0	20,000	1.00	20,000	7,087	6,991	35.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.37	34.07	10.45	27.40	7.32	11.52	1.60e+6	60.00	57.00	35.40	156,817	1568.50	4.83

Pole Num:	17W - 27310-125	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.99	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.62	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021172 Deg	Longitude:	-84.465745 Deg	Elevation:	893.642415227739		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.6	0.0
Groundline	24.6	19.3
Vertical	10.8	87.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,385	94.9
Groundline	15,385	94.9
GL Allowable	81,107	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.4	229.0		35.8	329.3	39.5	40.0
? EHS 3/8 (Down)			29.6	28.9	329.3	35.9	50.0
? EHS 3/8 (Down)			21.9	35.9	329.3	42.7	30.0
? Single Helix Anchor	19.2	305.1		23.3	329.3	35.2	140.0
? EHS 1/4 (Down)			18.4	37.6	329.3	65.2	140.0
? EHS 1/4 (Down)			17.4	40.1	329.3	64.2	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 94.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,010	167.1	48,464	315.0	59.8	6,732	688	7	6,738	99.1
Comms	5,808	322.5	61,392	399.0	75.7	8,527	1,214	12	8,539	125.6
GuyBraces	-6,835	-379.5	-90,568	-588.7	-111.7	-12,580	15,313	152	-12,428	-182.8
PowerEquipments	-38	-2.1	-2,088	-13.6	-2.6	-290	1,653	16	-274	-4.0
Pole	-105	-5.8	-1,063	-6.9	-1.3	-148	1,814	18	-130	-1.9
Crossarms	-18	-1.0	-349	-2.3	-0.4	-48	285	3	-46	-0.7
Streetlights	-12	-0.6	-259	-1.7	-0.3	-36	86	1	-35	-0.5
Insulators	-9	-0.5	-143	-0.9	-0.2	-20	142	1	-19	-0.3
Pole Load	1,801	100.0	15,385	100.0	19.0	2,137	21,196	210	2,347	34.5
Pole Reserve Capacity			65,722		81.0	4,663			4,453	65.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 94.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-969	-53.8	-13,175	-85.6	-16.2	-1,830	12,999	129	-1,701	-25.0
Unknown, COMMUNICATION	2,893	160.6	29,972	194.8	37.0	4,163	6,098	60	4,223	62.1
Pole	-105	-5.8	-1,063	-6.9	-1.3	-148	1,814	18	-130	-1.9
<Undefined>	-18	-1.0	-349	-2.3	-0.4	-48	285	3	-46	-0.7
Totals:	1,801	100.0	15,385	100.0	19.0	2,137	21,196	210	2,347	34.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.89	0.00	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	71,244	0	150	71,395
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.89	0.00	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-71,984	0	172	-71,812
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	69,915	-75	148	69,988
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-70,641	-83	169	-70,556
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	69,915	100	148	70,163
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	45.33	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-70,641	111	169	-70,361
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.30	18.33	0.3980	0.33	0.145	118.3	49.7	118.3	585	16,228	9	-657	15,580
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.30	48.59	0.3980	0.33	0.145	118.3	49.7	118.3	585	16,228	11	-657	15,582
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.30	48.59	0.3980	0.33	0.145	118.3	49.7	118.3	585	16,228	-5	-657	15,566
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.93	6.71	0.3980	0.33	0.145	118.3	49.7	118.3	585	12,819	-4	-519	12,296
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.93	6.71	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	50,291	-4	106	50,393
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.93	6.71	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-50,813	-4	122	-50,696
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.11	6.76	0.3980	0.33	0.145	118.3	49.7	118.3	585	12,379	-4	-501	11,874
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.11	6.76	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	48,566	-4	103	48,665
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.11	6.76	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-49,071	-5	118	-48,958
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.81	0.3980	0.33	0.145	118.3	49.7	118.3	585	11,944	-4	-484	11,456

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.81	0.3980	0.17	0.145	109.2	135.5	109.2	2,128	46,857	-4	99	46,952
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.81	0.3980	0.21	0.145	121.0	314.8	121.0	2,128	-47,344	-5	113	-47,235
Totals:											82,120	29	-1,858	80,291	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	7.02	1.3300	1.61	0.337	118.3	49.7	118.3	450	7,766	38	-833	6,972
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	7.02	1.3300	1.45	0.337	109.2	135.5	109.2	925	17,217	35	170	17,423
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	7.02	1.3300	1.63	0.337	121.0	314.8	121.0	925	-17,396	39	195	-17,162
Telco	TELE 1.5	Unknown, COMMUNICATION	18.36	7.05	1.5000	1.69	0.900	109.2	135.5	109.2	2,000	36,267	67	181	36,516
Telco	TELE 1.5	Unknown, COMMUNICATION	17.76	7.09	1.5000	2.18	0.900	118.3	49.7	118.4	850	13,822	67	-858	13,031
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.11	1.5000	1.91	0.900	121.0	314.8	121.0	2,000	-34,754	-98	197	-34,654
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.11	1.5000	1.69	0.900	109.2	135.5	109.2	2,000	34,396	67	172	34,636
Telco	TELE 1.5	Unknown, COMMUNICATION	16.94	7.14	1.5000	2.18	0.900	118.3	49.7	118.4	850	13,182	68	-818	12,432
Telco	TELE 1.5	Unknown, COMMUNICATION	16.35	7.17	1.5000	1.69	0.900	109.2	135.5	109.2	2,000	32,283	68	161	32,513
Totals:											102,785	353	-1,431	101,707	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-75KVA	KU, UTILITY	26.93	23.03	315.0	315.0	870.00	52.00	--	26.00	--	-2,428	-1,031	-3,459
Totals:											-2,428	-1,031	-3,459	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.44	5.45	135.5	135.5	50.00	4.50	3.50	96.00	33	-798	-765	
Normal	Crossarm	30.30	5.58	49.7	49.7	50.00	4.50	3.50	96.00	0	188	188	
Totals:											33	-610	-578

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	21.31	4.37	235.0	235.0	45.00	24.00	20.00	3.00	36.00	-183	-246	-430
Totals:												-183	-246	-430

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.01	0.00	0.0	0.0	13.00	9.00	10.50	0	-90	-90	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.63	45.00	218.6	0.0	6.00	3.50	7.50	-24	-24	-48	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.63	-45.00	52.4	0.0	6.00	3.50	7.50	32	-24	7	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.30	0.00	49.7	0.0	3.00	3.80	12.75	6	-42	-35	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.30	45.00	132.6	0.0	3.00	3.80	12.75	21	-42	-20	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.30	-45.00	326.7	0.0	3.00	3.80	12.75	-9	-42	-51	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.93	0.00	353.3	83.3	2.00	3.00	3.19	0	-6	-7	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.11	0.00	353.3	83.3	2.00	3.00	3.19	0	-6	-7	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.30	0.00	353.3	83.3	2.00	3.00	3.19	0	-6	-6	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.85	0.00	49.7	139.7	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.36	0.00	135.5	225.5	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.76	0.00	49.7	139.7	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.42	0.00	282.2	372.2	5.00	3.00	0.00	-6	0	-6	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.42	0.00	135.5	225.5	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	16.94	0.00	49.7	139.7	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt	Unknown, COMMUNICATION	16.35	0.00	135.5	225.5	5.00	3.00	0.00	4	0	4	
Totals:											44	-282	-238

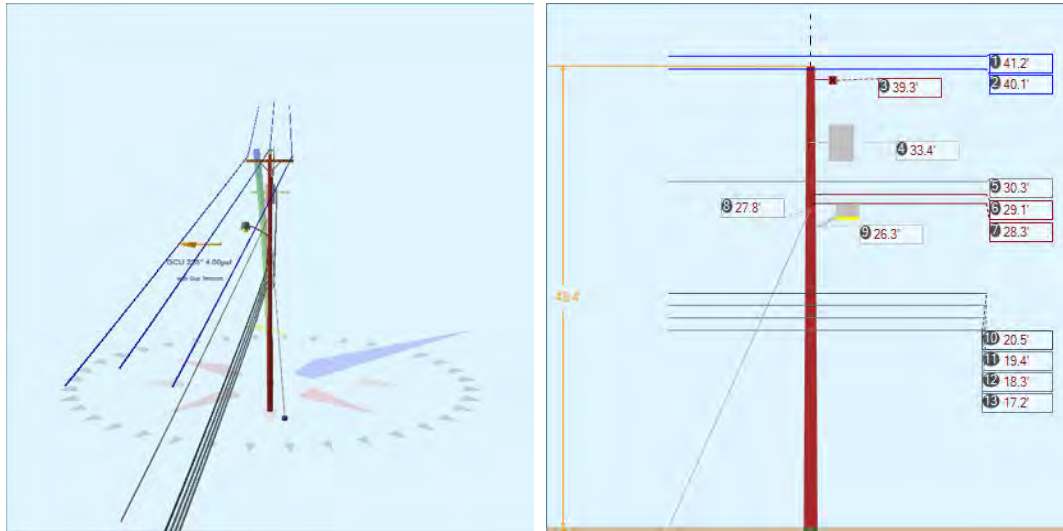
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.57	0.00	20.44	0.375	75.00	229.0	55.2	0.273	34.27	0.86
EHS 3/8	Down	KU, UTILITY	21.93	0.00	20.44	0.375	75.00	229.0	46.9	0.273	28.23	0.89
EHS 1/4	Down	Unknown, COMMUNICATION	18.36	0.00	19.17	0.25	75.00	305.1	43.6	0.121	24.77	0.79
EHS 1/4	Down	Unknown, COMMUNICATION	17.40	0.00	19.17	0.25	75.00	305.1	42.1	0.121	24.11	0.82

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,969	4,517	4,002	3,285	2,287	-1,591	-46,521
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,922	5,383	4,982	3,635	3,407	-2,370	-51,452
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,904	3,549	2,250	1,553	1,629	-1,409	-25,557
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,841	3,492	2,402	1,610	1,782	-1,541	-26,514
Totals:										10,083	9,105	-6,910	-150,044

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	20.44	229.0	25,000	1.00	25,000	9,874	8,961	39.5
Single Helix Anchor			18.00	19.17	305.1	20,000	1.00	20,000	7,040	4,652	35.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.24	33.74	10.38	20.82	7.32	11.34	1.60e+6	60.00	57.00	33.01	197,118	1962.59	9.26

Pole Num:	18W - 27310-125-02	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.65	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	38.00	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020912 Deg	Longitude:	-84.465494 Deg	Elevation:	897.384506760187		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.9	224.8
Groundline	41.9	224.8
Vertical	10.6	308.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,968	224.8
Groundline	37,968	224.8
GL Allowable	98,480	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.7	128.0		60.5	224.8	61.9	290.0
? EHS 3/8 (Down)			27.8	87.3	224.8	98.3	290.0
System Capacity Summary:				Adequate		At Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,413	93.9	46,264	121.9	47.0	3,423	392	3	3,427	50.4
Comms	1,153	76.6	20,328	53.5	20.6	1,504	1,231	11	1,515	22.3
GuyBraces	-1,360	-90.4	-35,345	-93.1	-35.9	-2,615	14,922	130	-2,486	-36.6
PowerEquipments	42	2.8	1,382	3.6	1.4	102	694	6	108	1.6
Pole	228	15.1	4,269	11.2	4.3	316	2,413	21	337	5.0
Crossarms	1	0.1	41	0.1	0.0	3	95	1	4	0.1
Streetlights	20	1.3	705	1.9	0.7	52	86	1	53	0.8
Insulators	9	0.6	325	0.9	0.3	24	129	1	25	0.4
Pole Load	1,505	100.0	37,968	100.0	38.6	2,809	19,960	174	2,983	43.9
Pole Reserve Capacity			60,512		61.4	3,991			3,817	56.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	123	8.2	13,324	35.1	13.5	986	16,155	141	1,126	16.6
Unknown, COMMUNICATION	1,153	76.6	20,333	53.6	20.7	1,505	1,297	11	1,516	22.3
Pole	228	15.1	4,269	11.2	4.3	316	2,413	21	337	5.0
<Undefined>	1	0.1	41	0.1	0.0	3	95	1	4	0.1
Totals:	1,505	100.0	37,968	100.0	38.6	2,809	19,960	174	2,983	43.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.23	0.00	0.3980	0.37	0.145	141.8	139.2	141.8	2,128	-505	0	1,528	1,022
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.23	0.00	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	7,868	0	1,177	9,044
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.37	0.145	141.8	139.2	141.8	2,128	-491	174	1,485	1,168
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	7,648	134	1,144	8,926

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.37	0.145	141.8	139.2	141.8	2,128	-491	-176	1,485	818
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.08	45.33	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	7,648	-135	1,144	8,657
Neutral	#4 COPPER SOLID	KU, UTILITY	30.25	6.76	0.2043	0.45	0.126	141.8	139.2	141.8	982	-171	0	879	708
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.25	6.76	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	5,771	1	863	6,635
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.83	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	5,553	1	830	6,385
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.33	6.87	0.3980	0.22	0.145	109.2	315.5	109.2	2,128	5,404	1	808	6,214
Totals:											38,233	1	11,343	49,577	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.47	7.34	1.3300	2.00	0.337	141.8	139.2	141.9	925	-109	68	1,545	1,504
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.47	7.34	1.3300	1.46	0.337	109.2	315.5	109.2	925	1,697	52	1,190	2,939
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.43	7.40	1.5000	1.70	0.900	109.2	315.5	109.2	2,000	3,483	-92	1,235	4,626
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.43	7.40	1.5000	2.35	0.900	141.8	139.2	141.9	2,000	-224	120	1,603	1,499
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.31	7.46	1.5000	1.70	0.900	109.2	315.5	109.2	2,000	3,283	-93	1,164	4,354
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.31	7.46	1.5000	2.35	0.900	141.8	139.2	141.9	2,000	-211	121	1,511	1,421
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.25	7.53	1.5000	1.70	0.900	109.2	315.5	109.2	2,000	3,092	-94	1,096	4,095
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.25	7.53	1.5000	2.35	0.900	141.8	139.2	141.9	2,000	-199	122	1,423	1,346
		COMMUNICATION													
Totals:											10,814	205	10,765	21,783	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	33.36	21.07	315.0	315.0	365.00	39.00	--	22.00	--	95	1,387	1,481
Totals:											95	1,387	1,481	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		39.27	5.47	137.4	137.4	50.00	4.50	3.50	96.00	-2	46	44
Totals:											-2	46	44

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.27	4.49	219.0	219.0	45.00	24.00	20.00	3.00	36.00	236	519	755
Totals:											236	519	755	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	40.35	0.00	0.0	0.0	13.00	9.00	10.50	0	187	187	
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.46	45.00	220.4	0.0	6.00	3.50	7.50	43	50	93	
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.46	-45.00	54.3	0.0	6.00	3.50	7.50	-43	50	7	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.25	0.00	139.2	139.2	2.00	3.00	3.19	0	14	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.25	0.00	315.5	315.5	2.00	3.00	3.19	0	14	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.11	0.00	315.5	315.5	2.00	3.00	3.19	0	13	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.33	0.00	315.5	315.5	2.00	3.00	3.19	0	13	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.47	0.00	227.4	137.4	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.43	0.00	45.5	405.5	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.43	0.00	229.2	139.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.31	0.00	45.5	405.5	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.31	0.00	229.2	139.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.25	0.00	45.5	405.5	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.25	0.00	229.2	139.2	5.00	3.00	0.00	6	0	6	
Totals:											6	342	348

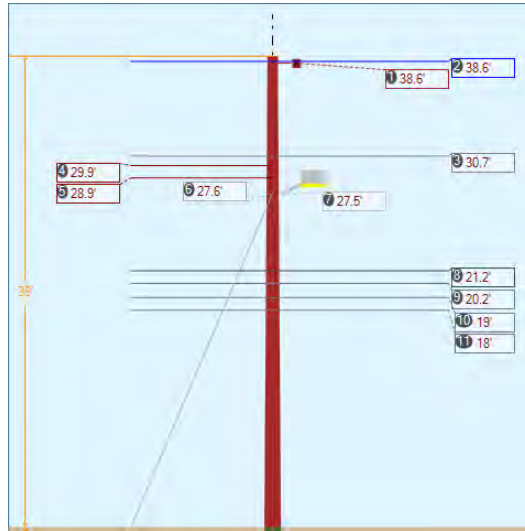
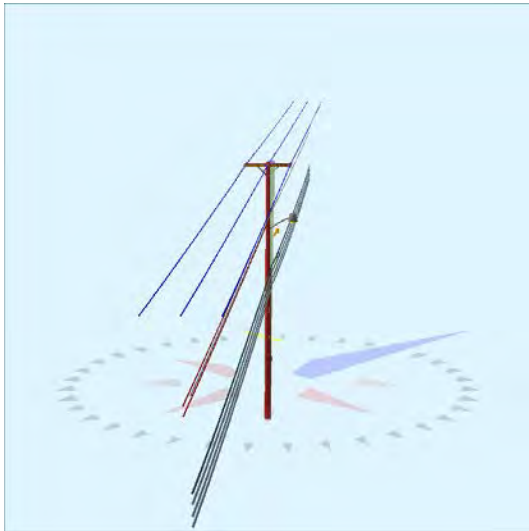
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	27.84	0.00	19.67	0.375	75.00	128.0	54.6	0.273	32.38	2.47

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	13,622	12,383	12,096	9,856	7,012	-1,392	-37,877
Totals:									9,856	7,012	-1,392	-37,877

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	19.67	128.0	20,000	1.00	20,000	12,383	12,096	61.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.78	33.93	11.02	21.74	7.32	12.10	1.60e+6	60.00	57.00	40.35	188,314	1883.03	9.43

Pole Num:	19W - 27310-126-01	Pole Length / Class:	45 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.01	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.00	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020640 Deg	Longitude:	-84.465140 Deg	Elevation:	896.153692020535		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.6	29.0
Groundline	24.9	0.0
Vertical	0.9	136.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,242	320.4
Groundline	24,048	331.8
GL Allowable	142,610	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.9	316.0		0.0	322.0	0.0	0.0
? EHS 3/8 (Down)			27.6	0.0	322.0	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 331.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-201	-120.4	14,904	62.0	10.5	712	381	3	715	10.5
Comms	17	10.1	512	2.1	0.4	25	1,246	8	33	0.5
GuyBraces	1	0.8	36	0.2	0.0	2	10	0	2	0.0
Pole	250	149.4	4,894	20.4	3.4	234	3,061	21	255	3.7
Crossarms	65	39.2	2,518	10.5	1.8	120	190	1	122	1.8
Streetlights	20	11.7	607	2.5	0.4	29	86	1	30	0.4
Insulators	15	9.2	578	2.4	0.4	28	84	1	28	0.4
Pole Load	167	100.0	24,048	100.0	16.9	1,149	5,057	34	1,183	17.4
Pole Reserve Capacity			118,562		83.1	5,651			5,617	82.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 331.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-165	-98.7	16,119	67.0	11.3	770	523	4	774	11.4
Unknown, COMMUNICATION	17	10.1	518	2.2	0.4	25	1,284	9	33	0.5
Pole	250	149.4	4,894	20.4	3.4	234	3,061	21	255	3.7
<Undefined>	65	39.2	2,518	10.5	1.8	120	190	1	122	1.8
Totals:	167	100.0	24,048	100.0	16.9	1,149	5,057	34	1,183	17.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.55	18.83	0.2922	0.28	0.205	112.3	138.9	112.3	1,530	-74,729	-14	12	-74,731
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.55	48.78	0.2922	0.28	0.205	112.3	138.9	112.3	1,530	-74,729	-8	12	-74,725
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.55	48.78	0.2922	0.28	0.205	112.3	138.9	112.3	1,530	-74,729	-2	12	-74,719
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	38.55	48.78	0.3980	0.28	0.145	141.8	319.2	141.8	2,128	104,060	3	15	104,078
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	38.55	18.83	0.3980	0.28	0.145	141.8	319.2	141.8	2,128	104,060	16	15	104,092

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.55	48.78	0.3980	0.28	0.145	141.8	319.2	141.8	2,128	104,060	10	15	104,085
Neutral	#4 COPPER SOLID	KU, UTILITY	30.71	7.34	0.2043	0.25	0.126	112.3	138.9	112.3	982	-38,208	4	8	-38,195
Neutral	#4 COPPER SOLID	KU, UTILITY	30.71	7.34	0.2043	0.40	0.126	141.8	319.2	141.8	982	38,253	5	9	38,267
Secondary	#4 COPPER SOLID	KU, UTILITY	29.93	7.39	0.2043	0.25	0.126	112.3	138.9	112.3	982	-37,241	-17	8	-37,250
Secondary	#4 COPPER SOLID	KU, UTILITY	28.90	7.46	0.2043	0.25	0.126	112.3	138.9	112.3	982	-35,958	-17	8	-35,967
Totals:											14,840	-21	115	14,934	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.22	7.96	1.3300	1.49	0.337	112.3	138.9	112.4	925	-24,868	13	15	-24,840
CATV	CATV 1.0	Unknown, COMMUNICATION	21.22	7.96	1.3300	1.98	0.337	141.8	319.2	141.9	925	24,898	16	17	24,931
Telco	TELE 1.5	Unknown, COMMUNICATION	20.19	8.02	1.5000	1.75	0.900	112.3	138.9	112.4	2,000	-51,152	23	16	-51,114
Telco	TELE 1.5	Unknown, COMMUNICATION	20.19	8.02	1.5000	2.33	0.900	141.8	319.2	141.9	2,000	51,213	29	18	51,260
Telco	TELE 1.5	Unknown, COMMUNICATION	19.01	8.10	1.5000	1.75	0.900	112.3	138.9	112.4	2,000	-48,162	23	15	-48,125
Telco	TELE 1.5	Unknown, COMMUNICATION	19.01	8.10	1.5000	2.33	0.900	141.8	319.2	141.9	2,000	48,220	29	17	48,265
Telco	TELE 1.5	Unknown, COMMUNICATION	17.97	8.17	1.5000	1.75	0.900	112.3	138.9	112.4	2,000	-45,544	23	14	-45,507
Telco	TELE 1.5	Unknown, COMMUNICATION	17.97	8.17	1.5000	2.33	0.900	141.8	319.2	141.9	2,000	45,598	29	16	45,643
Totals:											202	185	126	513	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.55	6.08	138.9	138.9	50.00	4.50	3.50	96.00	0	2,523	2,523	
Totals:											0	2,523	2,523

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 3 ft. Arm	KU, UTILITY	27.52	5.05	45.0	45.0	45.00	24.00	20.00	3.00	36.00	70	538	608
Totals:											70	538	608	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	38.55	0.00	138.9	0.0	3.00	3.80	12.75	-9	89	81	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	38.55	45.00	221.3	0.0	3.00	3.80	12.75	-13	89	76	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	38.55	-45.00	56.6	0.0	3.00	3.80	12.75	-4	89	86	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	38.55	45.00	236.6	180.0	3.00	3.80	12.75	4	89	93	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	38.55	0.00	318.9	180.0	3.00	3.80	12.75	9	89	98	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	38.55	-45.00	41.3	180.0	3.00	3.80	12.75	13	89	103	
Spool	Spool Insulator - 25 kV KU, UTILITY	30.71	0.00	49.1	319.1	2.00	3.00	3.19	1	14	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	29.93	0.00	138.9	138.9	2.00	3.00	3.19	-2	14	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.90	0.00	138.9	138.9	2.00	3.00	3.19	-2	13	11	
Bolt	Three Bolt Unknown, COMMUNICATION	21.22	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt Unknown, COMMUNICATION	20.19	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt Unknown, COMMUNICATION	19.01	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt Unknown, COMMUNICATION	17.97	0.00	49.1	319.1	5.00	3.00	0.00	1	0	1	
Totals:										2	578	579

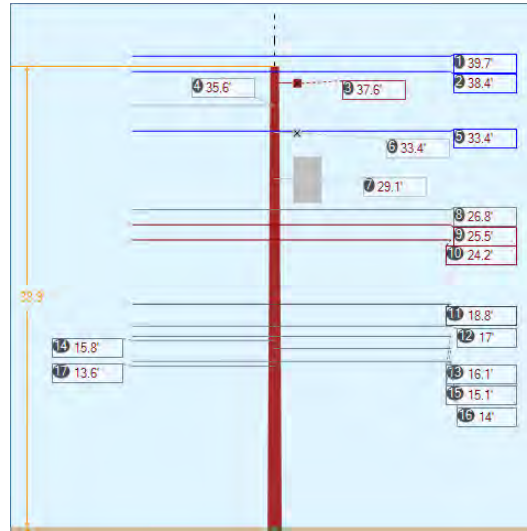
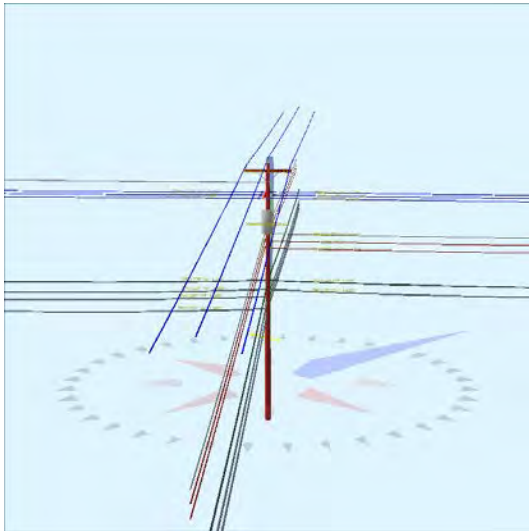
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down KU, UTILITY	27.62	0.00	17.87	0.375	75.00	316.0	56.9	0.273	31.17	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	36	
Totals:										0	0	0	36

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	17.87	316.0	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.04	33.01	12.78	10.16	8.60	13.69	1.60e+6	60.00	57.00	38.99	551,408	5619.39	111.11

Pole Num:	20W - 27310-126	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.13	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.45	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020410 Deg	Longitude:	-84.464914 Deg	Elevation:	894.452381504944		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	58.3	314.9
Groundline	58.3	314.9
Vertical	2.8	48.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	54,103	314.9
Groundline	54,103	314.9
GL Allowable	94,252	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	147.5	228.9		6.2	314.9	9.0	50.0
? EHS 3/8 (Span/Head)			35.6	9.0	314.9	14.3	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 302.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-1,012	-27.7	-25,527	-47.2	-27.1	-1,838	1,101	10	-1,828	-26.9
Comms	3,944	108.0	59,851	110.6	63.5	4,309	1,972	18	4,327	63.6
GuyBraces	397	10.9	14,149	26.2	15.0	1,019	34	0	1,019	15.0
PowerEquipments	54	1.5	-591	-1.1	-0.6	-43	1,216	11	-32	-0.5
Pole	213	5.8	4,160	7.7	4.4	300	2,280	20	320	4.7
Crossarms	34	0.9	1,251	2.3	1.3	90	190	2	92	1.3
Insulators	24	0.6	810	1.5	0.9	58	200	2	60	0.9
Pole Load	3,653	100.0	54,103	100.0	57.4	3,895	6,993	63	3,958	58.2
Pole Reserve Capacity			40,149		42.6	2,905			2,842	41.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 302.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	295	8.1	2,025	3.7	2.2	146	2,668	24	170	2.5
Unknown, COMMUNICATION	3,111	85.2	46,667	86.3	49.5	3,360	1,856	17	3,376	49.7
Pole	213	5.8	4,160	7.7	4.4	300	2,280	20	320	4.7
<Undefined>	34	0.9	1,251	2.3	1.3	90	190	2	92	1.3
Totals:	3,653	100.0	54,103	100.0	57.4	3,895	6,993	63	3,958	58.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	39.75	0.00	0.2922	0.36	0.205	126.2	137.6	126.2	1,530	-76,206	0	14	-76,192
Primary	#2 COPPER 7 STRAND KU, UTILITY	39.75	0.00	0.2922	0.28	0.205	112.3	318.9	112.3	1,530	75,707	0	21	75,728
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.43	45.33	0.2922	0.36	0.205	126.2	137.6	126.2	1,530	-73,686	25	14	-73,646
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.43	45.33	0.2922	0.28	0.205	112.3	318.9	112.3	1,530	73,203	22	20	73,246
Primary	#2 COPPER 7 STRAND KU, UTILITY	38.43	45.33	0.2922	0.36	0.205	126.2	137.6	126.2	1,530	-73,686	-65	14	-73,736

Primary	#2 COPPER 7 STRAND	KU, UTILITY	38.43	45.33	0.2922	0.28	0.205	112.3	318.9	112.3	1,530	73,203	-57	20	73,166
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	16.73	0.7200	0.25	0.462	117.3	49.3	117.3	6,210	-79,696	-8	1,328	-78,375
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	45.62	0.7200	0.25	0.462	117.3	49.3	117.3	6,210	-79,690	26	1,328	-78,336
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	45.47	0.7200	0.25	0.462	117.3	49.3	117.3	6,210	-79,690	-28	1,328	-78,390
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	18.48	0.7200	0.40	0.462	147.5	228.9	147.5	6,210	77,889	10	1,674	79,574
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	48.72	0.7200	0.40	0.462	147.5	228.9	147.5	6,210	77,889	35	1,674	79,599
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.41	48.58	0.7200	0.40	0.462	147.5	228.9	147.5	6,210	77,889	-28	1,674	79,536
Neutral	#4 COPPER SOLID	KU, UTILITY	26.78	6.88	0.2043	0.32	0.126	126.2	137.6	126.2	982	-32,951	6	9	-32,937
Neutral	#4 COPPER SOLID	KU, UTILITY	26.78	6.88	0.2043	0.25	0.126	112.3	318.9	112.3	982	32,736	5	12	32,753
Neutral	#4 COPPER SOLID	KU, UTILITY	26.78	6.88	0.2043	0.31	0.126	117.3	49.3	117.3	982	-10,102	-5	615	-9,492
Secondary	#4 COPPER SOLID	KU, UTILITY	25.51	6.95	0.2043	0.32	0.126	126.2	137.6	126.2	982	-31,387	6	8	-31,373
Secondary	#4 COPPER SOLID	KU, UTILITY	25.51	6.95	0.2043	0.25	0.126	112.3	318.9	112.3	982	31,181	5	12	31,198
Secondary	#4 COPPER SOLID	KU, UTILITY	25.51	6.95	0.2043	0.31	0.126	117.3	49.3	117.3	982	-9,623	-5	585	-9,042
Secondary	#4 COPPER SOLID	KU, UTILITY	24.23	7.03	0.2043	0.31	0.126	117.3	49.3	117.3	982	-9,140	-5	556	-8,588
Secondary	#4 COPPER SOLID	KU, UTILITY	24.23	7.03	0.2043	0.32	0.126	126.2	137.6	126.2	982	-29,809	6	8	-29,795
Secondary	#4 COPPER SOLID	KU, UTILITY	24.23	7.03	0.2043	0.25	0.126	112.3	318.9	112.3	982	29,614	5	11	29,630
											Totals:	-36,351	-49	10,927	-25,473

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.82	7.35	1.3300	1.59	0.337	117.3	49.3	117.3	925	-6,686	-54	1,122	-5,618
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	18.82	7.35	1.3300	1.71	0.337	126.2	137.6	126.2	925	-21,807	-58	16	-21,849
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	18.82	7.35	1.3300	2.10	0.337	147.5	228.9	147.5	925	6,535	-68	1,415	7,881
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	18.82	7.35	1.3300	1.49	0.337	112.3	318.9	112.4	925	21,664	52	23	21,738
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	16.96	7.46	1.5000	1.85	0.900	117.3	49.3	117.3	2,000	-13,027	96	1,105	-11,826
	COMMUNICATION														

Telco	TELE 1.5	Unknown, COMMUNICATION	16.96	7.46	1.5000	2.47	0.900	147.5	228.9	147.5	2,000	12,732	121	1,393	14,246
Telco	TELE 1.5	Unknown, COMMUNICATION	16.10	7.51	1.5000	2.01	0.900	126.2	137.6	126.2	2,000	-40,336	-104	15	-40,426
Telco	TELE 1.5	Unknown, COMMUNICATION	16.10	7.51	1.5000	1.75	0.900	112.3	318.9	112.4	2,000	40,072	92	21	40,186
Telco	TELE 1.5	KU, UTILITY	15.77	7.53	1.5000	2.47	0.900	147.5	228.9	147.5	2,000	11,838	37	1,295	13,170
Telco	TELE 1.5	Unknown, COMMUNICATION	15.08	7.57	1.5000	1.85	0.900	112.3	318.9	112.4	1,650	30,960	93	20	31,073
Telco	TELE 1.5	Unknown, COMMUNICATION	13.99	7.63	1.5000	2.01	0.900	126.2	137.6	126.2	2,000	-35,047	-106	13	-35,140
Telco	TELE 1.5	Unknown, COMMUNICATION	13.99	7.63	1.5000	1.75	0.900	112.3	318.9	112.4	2,000	34,818	94	18	34,930
Telco	TELE 1.5	Unknown, COMMUNICATION	13.59	7.66	1.5000	2.47	0.900	147.5	228.9	147.5	2,000	10,208	37	1,117	11,362
Totals:											51,924	230	7,572	59,726	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-50KVA	KU, UTILITY	29.08	22.24	140.0	140.0	640.00	47.00	--	24.00	--	-2,145	1,555	-590
Totals:											-2,145	1,555	-590

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		37.62	5.48	137.6	137.6	50.00	4.50	3.50	96.00	-42	1,217	1,176	
Normal Crossarm		33.41	5.73	228.6	228.6	50.00	4.50	3.50	96.00	13	60	72	
Totals:											-29	1,277	1,248

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	38.87	0.00	0.0	0.0	13.00	9.00	10.50	0	176	176
Pin	Pin Insulator - 5 kV	37.81	45.00	220.6	0.0	6.00	3.50	7.50	6	47	54
Pin	Pin Insulator - 5 kV	37.81	-45.00	54.5	0.0	6.00	3.50	7.50	-16	47	31
Deadend	Deadend Insulator - 15 kV	33.41	0.00	48.3	48.3	3.00	3.80	12.75	-2	77	75
Deadend	Deadend Insulator - 15 kV	33.41	45.00	311.3	-180.3	3.00	3.80	12.75	20	77	96

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	-45.00	145.9	-180.3	3.00	3.80	12.75	-21	77	55
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	0.00	228.6	0.3	3.00	3.80	12.75	3	77	79
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	45.00	311.3	0.3	3.00	3.80	12.75	23	77	100
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.41	-45.00	145.9	0.3	3.00	3.80	12.75	-18	77	59
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.78	0.00	230.0	140.0	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.78	0.00	48.3	48.3	2.00	3.00	3.19	-1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	230.0	140.0	2.00	3.00	3.19	1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	48.3	48.3	2.00	3.00	3.19	-1	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.23	0.00	48.3	48.3	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.23	0.00	230.0	140.0	2.00	3.00	3.19	1	11	12
Bolt	Single Bolt	Unknown, COMMUNICATION	18.82	0.00	138.3	138.3	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.82	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	16.96	0.00	318.6	318.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	16.10	0.00	137.6	227.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.10	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	KU, UTILITY	15.77	0.00	228.9	318.9	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	15.08	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	13.99	0.00	137.6	227.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	13.99	0.00	318.9	318.9	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	13.59	0.00	228.9	318.9	5.00	3.00	0.00	2	0	2
Totals:										8	800	809

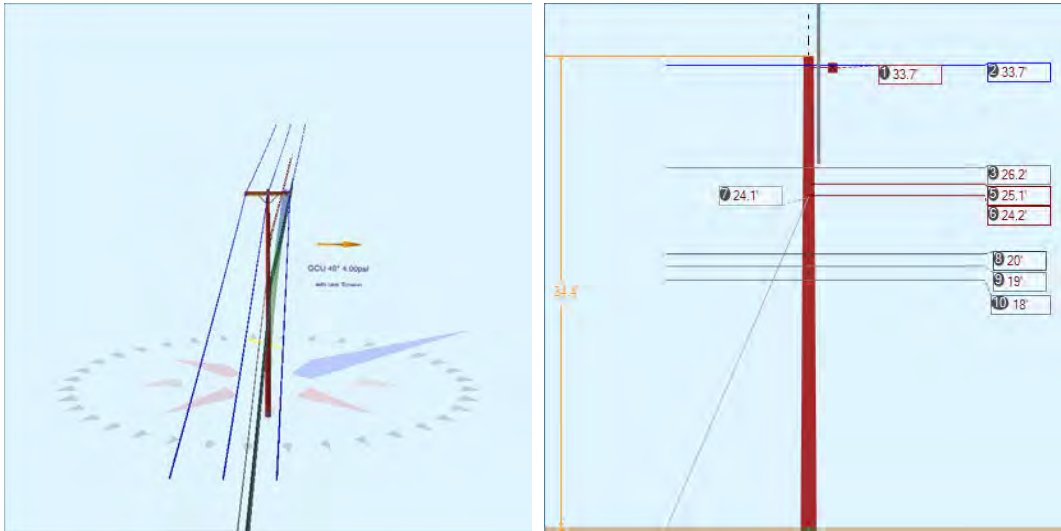
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	35.58	35.58	147.50	0.375	75.00	228.9	0.0	0.273	145.68	1.15

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	1,989	1,808	1,249	0	1,249	361	14,119
Totals:									0	1,249	361	14,119

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	147.50	228.9	20,000	1.00	20,000	1,808	1,249	9.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.29	33.47	11.00	12.21	7.32	11.93	1.60e+6	60.00	57.00	38.87	246,899	2497.55	35.71

Pole Num:	21W - 27310-126-02	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.15	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020120 Deg	Longitude:	-84.464611 Deg	Elevation:	886.155370315295		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.8	0.0 47.7
Groundline	41.8	0.0 47.7
Vertical	3.6	22.4 315.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,448	39.4 47.7
Groundline	34,448	39.4 47.7
GL Allowable	84,749	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.9	135.0		19.1	47.7	21.4	310.0
? EHS 3/8 (Down)			24.1	27.5	47.7	33.9	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 39.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	830	57.0	23,304	67.7	27.5	1,894	417	4	1,898	27.9
Comms	607	41.6	11,887	34.5	14.0	966	945	9	975	14.3
GuyBraces	-212	-14.5	-5,032	-14.6	-5.9	-409	4,631	45	-364	-5.4
Pole	187	12.8	3,227	9.4	3.8	262	1,926	19	281	4.1
Crossarms	2	0.2	74	0.2	0.1	6	190	2	8	0.1
Risers	27	1.9	469	1.4	0.6	38	49	0	39	0.6
Insulators	15	1.1	519	1.5	0.6	42	74	1	43	0.6
Pole Load	1,456	100.0	34,448	100.0	40.7	2,799	8,233	79	2,879	42.3
Pole Reserve Capacity			50,301		59.4	4,001			3,921	57.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 39.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	661	45.4	19,243	55.9	22.7	1,564	5,143	49	1,613	23.7
Unknown, COMMUNICATION	607	41.6	11,904	34.6	14.1	967	974	9	977	14.4
Pole	187	12.8	3,227	9.4	3.8	262	1,926	19	281	4.1
<Undefined>	2	0.2	74	0.2	0.1	6	190	2	8	0.1
Totals:	1,456	100.0	34,448	100.0	40.7	2,799	8,233	79	2,879	42.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	18.20	0.2922	0.49	0.205	141.6	136.2	141.6	1,530	-7,944	-2	1,095	-6,851
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	48.54	0.2922	0.49	0.205	141.6	136.2	141.6	1,530	-7,944	-15	1,095	-6,864
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	48.54	0.2922	0.49	0.205	141.6	136.2	141.6	1,530	-7,944	14	1,095	-6,836
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	48.54	0.2922	0.39	0.205	126.2	317.6	126.2	1,530	9,569	-12	973	10,530
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.72	18.20	0.2922	0.39	0.205	126.2	317.6	126.2	1,530	9,569	2	973	10,544

Primary	#2 COPPER 7 STRAND	KU, UTILITY	33.72	48.54	0.2922	0.39	0.205	126.2	317.6	126.2	1,530	9,569	13	973	10,556
Neutral	#4 COPPER SOLID	KU, UTILITY	26.23	6.66	0.2043	0.45	0.126	141.6	136.2	141.6	982	-3,966	20	757	-3,189
Neutral	#4 COPPER SOLID	KU, UTILITY	26.23	6.66	0.2043	0.36	0.126	126.2	317.6	126.2	982	4,777	18	673	5,468
Secondary	#4 COPPER SOLID	KU, UTILITY	25.06	6.73	0.2043	0.36	0.126	126.2	317.6	126.2	982	4,564	3	643	5,209
Secondary	#4 COPPER SOLID	KU, UTILITY	24.22	6.78	0.2043	0.36	0.126	126.2	317.6	126.2	982	4,410	3	621	5,034
Totals:											14,660	42	8,900	23,602	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.95	7.04	1.3300	1.74	0.337	126.2	317.6	126.2	925	3,422	58	1,330	4,810
CATV	CATV 1.0	Unknown, COMMUNICATION	19.95	7.04	1.3300	2.00	0.337	141.6	136.2	141.6	925	-2,841	65	1,496	-1,280
Telco	TELE 1.5	Unknown, COMMUNICATION	19.05	7.09	1.5000	2.03	0.900	126.2	317.6	126.2	2,000	7,065	101	1,388	8,554
Telco	TELE 1.5	Unknown, COMMUNICATION	19.05	7.09	1.5000	2.34	0.900	141.6	136.2	141.6	2,000	-5,865	114	1,561	-4,190
Telco	TELE 1.5	Unknown, COMMUNICATION	18.04	7.16	1.5000	2.03	0.900	126.2	317.6	126.2	2,000	6,690	102	1,314	8,106
Telco	TELE 1.5	Unknown, COMMUNICATION	18.04	7.16	1.5000	2.34	0.900	141.6	136.2	141.6	2,000	-5,554	115	1,478	-3,961
Totals:											2,917	554	8,569	12,040	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.72	5.45	136.2	136.2	50.00	4.50	3.50	96.00	0	75	75	
Totals:											0	75	75

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 0.0°	Riser	KU, UTILITY	25.58	5.85	0.0	0.0	25.58	306.95	2.50	2.50	306.95	9	466	475
Totals:											9	466	475	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	0.00	136.2	0.0	3.00	3.80	12.75	-1	79	78
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	45.00	219.3	0.0	3.00	3.80	12.75	-22	79	56
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	-45.00	53.1	0.0	3.00	3.80	12.75	20	79	99
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	45.00	233.1	180.0	3.00	3.80	12.75	-20	79	58
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	0.00	316.2	180.0	3.00	3.80	12.75	1	79	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.72	-45.00	39.3	180.0	3.00	3.80	12.75	22	79	101
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.23	0.00	46.9	316.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	317.6	317.6	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.22	0.00	317.6	317.6	2.00	3.00	3.19	0	11	11
Bolt	Single Bolt	Unknown, COMMUNICATION	19.95	0.00	47.6	407.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	19.05	0.00	47.6	407.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	18.04	0.00	47.6	407.6	5.00	3.00	0.00	6	0	6
Totals:										19	506	526

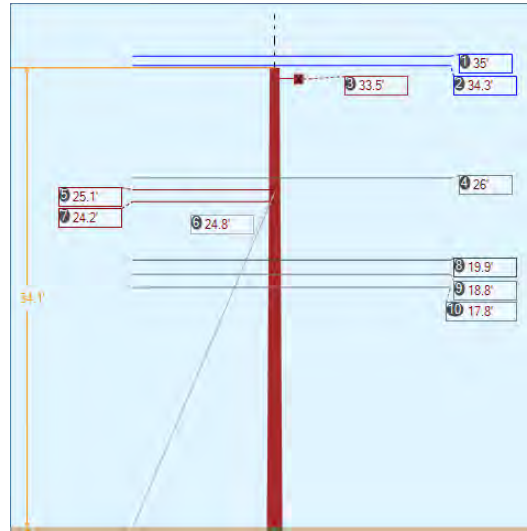
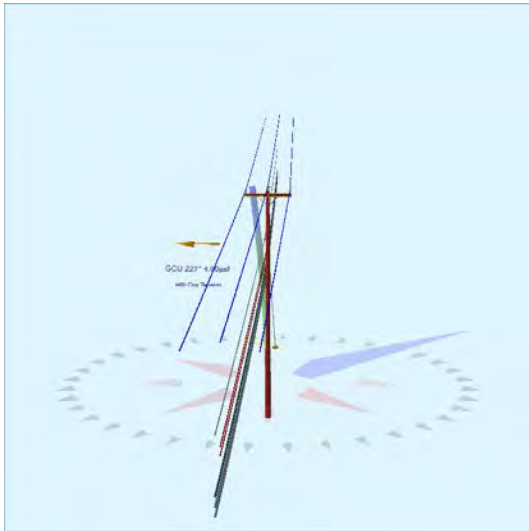
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.10	0.00	17.90	0.375	75.00	135.0	53.2	0.273	28.31	0.68

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,699	4,272	3,812	3,052	2,283	-223	-5,097
Totals:										3,052	2,283	-223	-5,097

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	17.90	135.0	20,000	1.00	20,000	4,272	3,812	21.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.42	33.56	10.59	12.88	7.32	11.51	1.60e+6	60.00	57.00	34.39	229,054	2286.83	27.78

Pole Num:	22W - 27220-125-01	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.86	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.05	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019859 Deg	Longitude:	-84.464264 Deg	Elevation:	888.793778546932		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.4	0.0
Groundline	33.4	0.0
Vertical	2.9	22.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,285	220.5
Groundline	27,285	220.5
GL Allowable	84,086	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	26.5	318.0		15.9	227.0	17.0	140.0
? EHS 3/8 (Down)			24.9	22.9	227.0	26.9	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 220.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	709	61.1	20,240	74.2	24.1	1,654	386	4	1,658	24.4
Comms	547	47.1	10,663	39.1	12.7	871	886	9	880	12.9
GuyBraces	-291	-25.1	-7,158	-26.2	-8.5	-585	3,296	32	-553	-8.1
Pole	186	16.0	3,198	11.7	3.8	261	1,906	18	280	4.1
Crossarms	1	0.1	46	0.2	0.1	4	95	1	5	0.1
Insulators	9	0.7	296	1.1	0.4	24	87	1	25	0.4
Pole Load	1,160	100.0	27,285	100.0	32.5	2,230	6,657	64	2,294	33.7
Pole Reserve Capacity			56,801		67.6	4,570			4,506	66.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 220.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	426	36.7	13,362	49.0	15.9	1,092	3,741	36	1,128	16.6
Unknown, COMMUNICATION	547	47.1	10,680	39.1	12.7	873	915	9	882	13.0
Pole	186	16.0	3,198	11.7	3.8	261	1,906	18	280	4.1
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	5	0.1
Totals:	1,160	100.0	27,285	100.0	32.5	2,230	6,657	64	2,294	33.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	35.02	0.00	0.2922	0.30	0.205	109.4	137.3	109.4	1,530	8,227	0	879	9,106
Primary	#2 COPPER 7 STRAND KU, UTILITY	35.02	0.00	0.2922	0.49	0.205	141.6	316.2	141.6	1,530	-6,897	0	1,140	-5,757
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.30	0.205	109.4	137.3	109.4	1,530	8,059	147	861	9,067
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.49	0.205	141.6	316.2	141.6	1,530	-6,757	190	1,117	-5,450
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.30	0.205	109.4	137.3	109.4	1,530	8,059	-142	861	8,778
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.30	45.33	0.2922	0.49	0.205	141.6	316.2	141.6	1,530	-6,757	-184	1,117	-5,824

Neutral	#4 COPPER SOLID	KU, UTILITY	25.96	6.66	0.2043	0.27	0.126	109.4	137.3	109.4	982	3,913	15	579	4,508
Neutral	#4 COPPER SOLID	KU, UTILITY	25.96	6.66	0.2043	0.45	0.126	141.6	316.2	141.6	982	-3,281	20	751	-2,510
Secondary	#4 COPPER SOLID	KU, UTILITY	25.08	6.71	0.2043	0.27	0.126	109.4	137.3	109.4	982	3,781	2	560	4,343
Secondary	#4 COPPER SOLID	KU, UTILITY	24.21	6.77	0.2043	0.27	0.126	109.4	137.3	109.4	982	3,649	2	540	4,191
Totals:											11,997	48	8,406	20,452	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.87	7.03	1.3300	1.47	0.337	109.4	137.3	109.4	925	2,821	50	1,152	4,024
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.87	7.03	1.3300	2.00	0.337	141.6	316.2	141.6	925	-2,365	65	1,494	-807
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.80	7.09	1.5000	1.70	0.900	109.4	137.3	109.4	2,000	5,773	88	1,192	7,053
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.80	7.09	1.5000	2.34	0.900	141.6	316.2	141.6	2,000	-4,840	114	1,545	-3,181
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.84	7.15	1.5000	1.70	0.900	109.4	137.3	109.4	2,000	5,477	89	1,131	6,696
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.84	7.15	1.5000	2.34	0.900	141.6	316.2	141.6	2,000	-4,591	115	1,466	-3,011
		COMMUNICATION													
Totals:											2,274	521	7,979	10,775	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.49	5.45	137.3	137.3	50.00	4.50	3.50	96.00	5	41	47	
Totals:											5	41	47

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.14	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	45.00	220.4	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	-45.00	54.2	0.0	6.00	3.50	7.50	-42	43	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.96	0.00	226.8	136.8	2.00	3.00	3.19	2	12	14

Spool	Spool Insulator - 25 kV	KU, UTILITY	25.08	0.00	137.3	137.3	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.21	0.00	137.3	137.3	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	19.87	0.00	226.8	136.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.80	0.00	226.8	136.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.84	0.00	226.8	136.8	5.00	3.00	0.00	6	0	6
Totals:										21	278	299

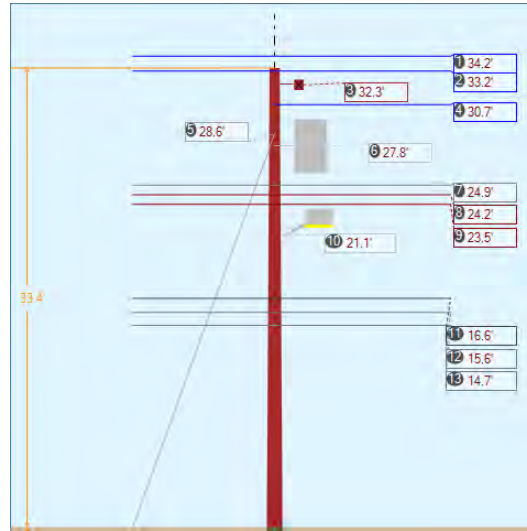
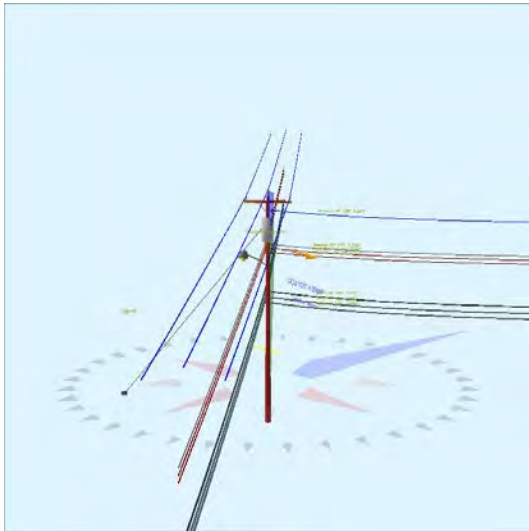
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.85	0.00	26.50	0.375	75.00	318.0	43.0	0.273	34.57	0.69

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,731	3,392	3,179	2,169	2,324	-303	-7,233
Totals:										2,169	2,324	-303	-7,233

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	26.50	318.0	20,000	1.00	20,000	3,392	3,179	17.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.35	33.56	10.56	11.61	7.32	11.48	1.60e+6	60.00	57.00	34.14	228,123	2295.44	34.48

Pole Num:	23W - 27220-125	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.64	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.76	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019641 Deg	Longitude:	-84.464028 Deg	Elevation:	883.908316191857		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.8	104.8
Groundline	41.8	104.8
Vertical	3.6	33.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,484	104.8
Groundline	33,484	104.8
GL Allowable	82,029	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	25.1	213.0		8.3	104.8	10.7	40.0
? EHS 3/8 (Down)			28.6	12.0	104.8	16.9	40.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 88.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	592	26.9	14,570	43.5	17.8	1,239	538	5	1,245	18.3
Comms	1,941	88.2	29,026	86.7	35.4	2,469	1,238	12	2,481	36.5
GuyBraces	-609	-27.7	-16,984	-50.7	-20.7	-1,445	1,891	19	-1,426	-21.0
PowerEquipments	53	2.4	2,772	8.3	3.4	236	1,216	12	248	3.6
Pole	175	7.9	2,893	8.6	3.5	246	1,843	18	264	3.9
Crossarms	19	0.9	617	1.8	0.8	53	95	1	53	0.8
Streetlights	19	0.9	222	0.7	0.3	19	86	1	20	0.3
Insulators	12	0.5	366	1.1	0.5	31	133	1	32	0.5
Pole Load	2,201	100.0	33,484	100.0	40.8	2,848	7,039	69	2,917	42.9
Pole Reserve Capacity			48,545		59.2	3,952			3,883	57.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 88.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	66	3.0	947	2.8	1.2	81	3,807	37	118	1.7
Unknown, COMMUNICATION	1,941	88.2	29,027	86.7	35.4	2,469	1,295	13	2,482	36.5
Pole	175	7.9	2,893	8.6	3.5	246	1,843	18	264	3.9
<Undefined>	19	0.9	617	1.8	0.8	53	95	1	53	0.8
Totals:	2,201	100.0	33,484	100.0	40.8	2,848	7,039	69	2,917	42.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.24	0.00	0.2922	0.30	0.205	115.4	138.7	115.4	1,530	43,492	0	393	43,884
Primary	#2 COPPER 7 STRAND KU, UTILITY	34.24	0.00	0.2922	0.27	0.205	109.4	317.3	109.4	1,530	-44,760	0	351	-44,409
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.16	45.33	0.2922	0.30	0.205	115.4	138.7	115.4	1,530	42,118	-105	380	42,394
Primary	#2 COPPER 7 STRAND KU, UTILITY	33.16	45.33	0.2922	0.27	0.205	109.4	317.3	109.4	1,530	-43,347	-99	340	-43,106

Primary	#2 COPPER 7 STRAND	KU, UTILITY	33.16	45.33	0.2922	0.30	0.205	115.4	138.7	115.4	1,530	42,118	129	380	42,628
Primary	#2 COPPER 7 STRAND	KU, UTILITY	33.16	45.33	0.2922	0.27	0.205	109.4	317.3	109.4	1,530	-43,347	122	340	-42,884
Primary	#4 COPPER SOLID	KU, UTILITY	30.70	16.57	0.2043	0.33	0.126	125.7	48.1	125.8	150	4,568	8	428	5,004
Neutral	#4 COPPER SOLID	KU, UTILITY	24.86	6.68	0.2043	0.33	0.126	125.7	48.1	125.8	150	3,699	11	347	4,056
Neutral	#4 COPPER SOLID	KU, UTILITY	24.86	6.68	0.2043	0.27	0.126	115.4	138.7	115.4	982	20,260	-11	253	20,503
Neutral	#4 COPPER SOLID	KU, UTILITY	24.86	6.68	0.2043	0.24	0.126	109.4	317.3	109.4	982	-20,851	-10	227	-20,635
Secondary	#4 COPPER SOLID	KU, UTILITY	24.16	6.72	0.2043	0.33	0.126	125.7	48.1	125.8	150	3,595	11	337	3,942
Secondary	#4 COPPER SOLID	KU, UTILITY	24.16	6.72	0.2043	0.27	0.126	115.4	138.7	115.4	982	19,689	-11	246	19,924
Secondary	#4 COPPER SOLID	KU, UTILITY	24.16	6.72	0.2043	0.24	0.126	109.4	317.3	109.4	982	-20,263	-10	220	-20,053
Secondary	#4 COPPER SOLID	KU, UTILITY	23.46	6.76	0.2043	0.27	0.126	115.4	138.7	115.4	982	19,120	-11	239	19,348
Secondary	#4 COPPER SOLID	KU, UTILITY	23.46	6.76	0.2043	0.24	0.126	109.4	317.3	109.4	982	-19,677	-10	214	-19,474
Secondary	#4 COPPER SOLID	KU, UTILITY	23.46	6.76	0.2043	0.33	0.126	125.7	48.1	125.8	150	3,490	11	327	3,828
											Totals:	9,905	23	5,022	14,950

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.64	7.18	1.3300	1.55	0.337	115.4	138.7	115.4	925	12,771	-41	440	13,170
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.64	7.18	1.3300	1.45	0.337	109.4	317.3	109.4	925	-13,143	-39	394	-12,788
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.64	7.18	1.3300	1.72	0.337	125.7	48.1	125.8	300	4,950	45	603	5,598
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.63	7.24	1.5000	1.80	0.900	115.4	138.7	115.4	2,000	25,936	-73	452	26,315
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.63	7.24	1.5000	1.69	0.900	109.4	317.3	109.4	2,000	-26,692	-69	404	-26,357
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.63	7.24	1.5000	2.01	0.900	125.7	48.1	125.9	750	11,624	79	619	12,322
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.67	7.30	1.5000	1.80	0.900	115.4	138.7	115.4	2,000	24,349	-73	424	24,700
		COMMUNICATION													

Telco	TELE 1.5	Unknown,	14.67	7.30	1.5000	1.69	0.900	109.4	317.3	109.4	2,000	-25,059	-70	380	-24,749
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.67	7.30	1.5000	2.01	0.900	125.7	48.1	125.9	750	10,911	80	581	11,572
		COMMUNICATION													
Totals:											25,647	-161	4,297	29,783	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA KU, UTILITY	27.77	22.00	140.0	140.0	640.00	47.00	--	24.00	--	1,384	1,461	2,845
Totals:											1,384	1,461	2,845

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.35	5.47	138.0	138.0	50.00	4.50	3.50	96.00	28	605	633	
Totals:											28	605	633

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm KU, UTILITY	21.14	4.40	225.0	225.0	45.00	24.00	20.00	3.00	36.00	-174	402	228
Totals:											-174	402	228

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV KU, UTILITY	33.37	0.00	0.0	0.0	13.00	9.00	10.50	0	149	149
Pin	Pin Insulator - 5 kV KU, UTILITY	32.53	45.00	221.1	0.0	6.00	3.50	7.50	-29	40	11
Pin	Pin Insulator - 5 kV KU, UTILITY	32.53	-45.00	54.9	0.0	6.00	3.50	7.50	36	40	76
Deadend	Deadend Insulator - 15 kV KU, UTILITY	30.70	0.00	48.1	48.1	3.00	3.80	12.75	6	69	75
Spool	Spool Insulator - 25 kV KU, UTILITY	24.86	0.00	35.0	35.0	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV KU, UTILITY	24.86	0.00	220.0	130.0	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV KU, UTILITY	24.16	0.00	35.0	35.0	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV KU, UTILITY	24.16	0.00	220.0	130.0	2.00	3.00	3.19	-1	11	9
Spool	Spool Insulator - 25 kV KU, UTILITY	23.46	0.00	220.0	130.0	2.00	3.00	3.19	-1	10	9
Spool	Spool Insulator - 25 kV KU, UTILITY	23.46	0.00	35.0	35.0	2.00	3.00	3.19	1	10	12

Bolt	Three Bolt	Unknown, COMMUNICATION	16.64	0.00	228.0	138.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	16.64	0.00	48.1	138.1	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	15.63	0.00	228.0	138.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	15.63	0.00	48.1	138.1	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	14.67	0.00	228.0	138.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	14.67	0.00	48.1	138.1	5.00	3.00	0.00	4	0	4
Totals:										12	363	375

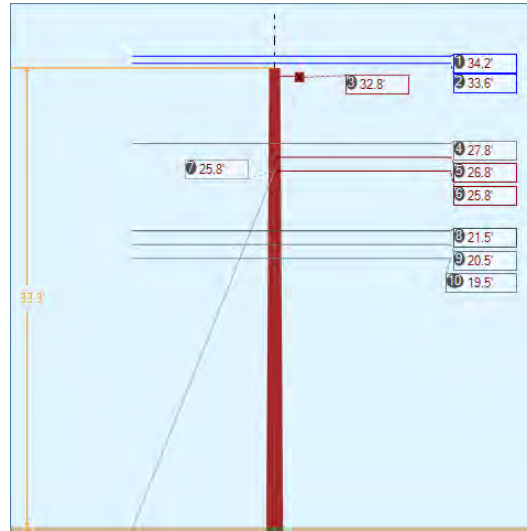
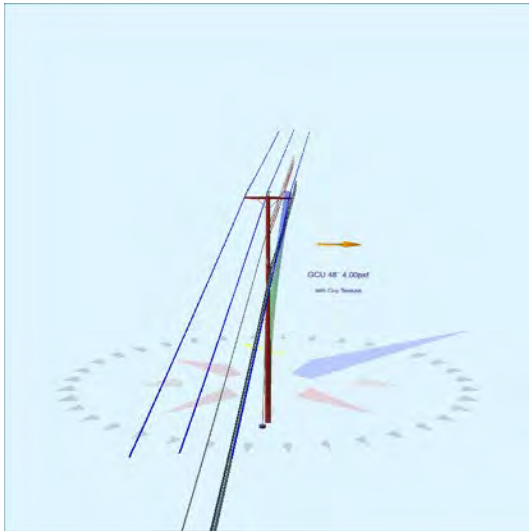
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	28.60	0.00	25.08	0.375	75.00	213.0	48.6	0.273	36.33	0.38

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,346	2,133	1,657	1,243	1,096	-623	-17,426
Totals:										1,243	1,096	-623	-17,426

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	25.08	213.0	20,000	1.00	20,000	2,133	1,657	10.7

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.35	33.74	10.42	12.15	7.32	11.39	1.60e+6	60.00	57.00	33.37	198,141	1955.39	27.78

Pole Num:	24W - 27220 & 127-02	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	38.22	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019413 Deg	Longitude:	-84.463760 Deg	Elevation:	884.691559594252		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.7	0.0
Groundline	24.7	0.0
Vertical	2.7	23.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,766	38.4
Groundline	23,766	38.4
GL Allowable	100,189	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	24.1	137.0		18.7	47.7	19.9	310.0
? EHS 3/8 (Down)			25.8	27.0	47.7	31.6	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 38.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	752	75.2	20,785	87.5	20.8	1,439	253	2	1,441	21.2
Comms	414	41.4	8,749	36.8	8.7	606	648	6	611	9.0
GuyBraces	-369	-36.8	-9,332	-39.3	-9.3	-646	4,146	36	-610	-9.0
Pole	193	19.3	3,217	13.5	3.2	223	2,127	18	241	3.5
Crossarms	1	0.1	47	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	300	1.3	0.3	21	91	1	22	0.3
Pole Load	1,001	100.0	23,766	100.0	23.7	1,645	7,360	63	1,709	25.1
Pole Reserve Capacity			76,423		76.3	5,155			5,091	74.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 38.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	392	39.2	11,736	49.4	11.7	813	4,462	38	851	12.5
Unknown, COMMUNICATION	414	41.4	8,766	36.9	8.8	607	676	6	613	9.0
Pole	193	19.3	3,217	13.5	3.2	223	2,127	18	241	3.5
<Undefined>	1	0.1	47	0.2	0.1	3	95	1	4	0.1
Totals:	1,001	100.0	23,766	100.0	23.7	1,645	7,360	63	1,709	25.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#6 COPPER SOLID KU, UTILITY	34.18	0.00	0.1620	0.42	0.079	138.9	137.6	138.9	668	-4,738	0	905	-3,833
Primary	#6 COPPER SOLID KU, UTILITY	34.18	0.00	0.1620	0.26	0.079	109.5	318.3	109.5	668	5,096	0	712	5,808
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.42	0.079	138.9	137.6	138.9	668	-4,665	103	891	-3,670
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.26	0.079	109.5	318.3	109.5	668	5,017	81	701	5,799
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.42	0.079	138.9	137.6	138.9	668	-4,665	-99	891	-3,872
Primary	#6 COPPER SOLID KU, UTILITY	33.65	45.37	0.1620	0.26	0.079	109.5	318.3	109.5	668	5,017	-78	701	5,640

Neutral	#6 COPPER SOLID	KU, UTILITY	27.83	6.82	0.1620	0.42	0.079	138.9	137.6	138.9	668	-3,858	-2	737	-3,123
Neutral	#6 COPPER SOLID	KU, UTILITY	27.83	6.82	0.1620	0.26	0.079	109.5	318.3	109.5	668	4,149	2	580	4,730
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	26.83	6.89	0.2316	0.27	0.129	109.5	318.3	109.5	1,064	6,372	3	618	6,992
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.83	6.95	0.2316	0.27	0.129	109.5	318.3	109.5	1,064	6,134	3	595	6,732
Totals:											13,858	13	7,330	21,202	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.50	7.22	1.3300	1.95	0.337	138.9	137.6	139.0	925	-4,127	65	1,574	-2,488
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.50	7.22	1.3300	1.47	0.337	109.5	318.3	109.5	925	4,438	51	1,238	5,727
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.50	7.29	1.5000	2.29	0.900	138.9	137.6	139.0	2,000	-8,508	114	1,640	-6,753
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.50	7.29	1.5000	1.70	0.900	109.5	318.3	109.5	2,000	9,150	90	1,290	10,530
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.50	7.35	0.6570	1.94	0.190	138.9	137.6	138.9	750	-3,035	38	903	-2,095
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.50	7.35	0.6570	1.46	0.190	109.5	318.3	109.5	750	3,264	30	710	4,003
		COMMUNICATION													
Totals:											1,183	387	7,354	8,925	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.83	5.76	317.9	317.9	50.00	4.50	3.50	96.00	8	40	48	
Totals:											8	40	48

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.30	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.02	45.00	40.7	0.0	6.00	3.50	7.50	43	42	85
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.02	-45.00	235.2	0.0	6.00	3.50	7.50	-41	42	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.83	0.00	137.6	137.6	2.00	3.00	3.19	0	13	12

Spool	Spool Insulator - 25 kV	KU, UTILITY	27.83	0.00	318.3	318.3	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.83	0.00	318.3	318.3	2.00	3.00	3.19	0	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.83	0.00	318.3	318.3	2.00	3.00	3.19	0	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.50	0.00	47.9	317.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.50	0.00	47.9	317.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.50	0.00	47.9	317.9	5.00	3.00	0.00	6	0	6
Totals:										20	286	306

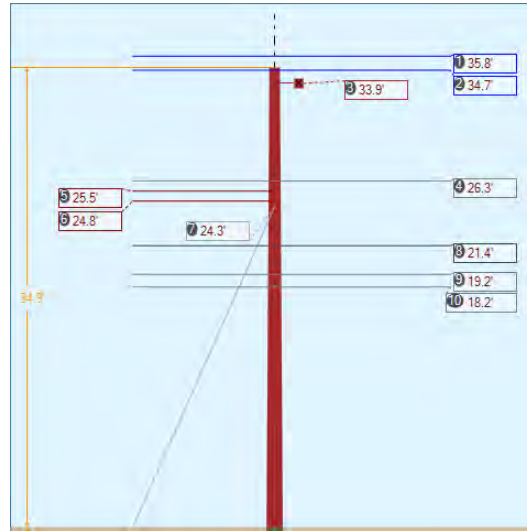
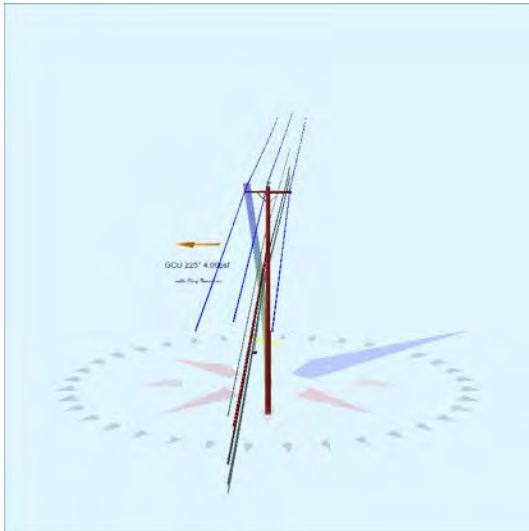
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Down	KU, UTILITY	25.83	0.00	24.05	0.375	75.00	137.0	46.9	0.273	33.54	0.79

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	4,381	3,983	3,739	2,730	2,556	-381	-9,519	
Totals:										2,730	2,556	-381	-9,519

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	24.05	137.0	20,000	1.00	20,000	3,983	3,739	19.9

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.04	33.59	11.19	12.37	7.96	12.17	1.60e+6	60.00	57.00	33.30	270,213	2725.90	37.04

Pole Num:	25W - 27220-126-01	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.12	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	38.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019123 Deg	Longitude:	-84.463429 Deg	Elevation:	882.454943563127		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.8	224.8
Groundline	25.8	224.8
Vertical	2.3	128.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	26,188	224.8
Groundline	26,188	224.8
GL Allowable	105,198	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.6	308.3		18.0	224.8	20.3	110.0
? EHS 3/8 (Down)			24.3	26.0	224.8	32.2	110.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 210.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	952	85.9	24,507	93.6	23.3	1,610	296	2	1,612	23.7
Comms	274	24.7	5,712	21.8	5.4	375	633	5	380	5.6
GuyBraces	-328	-29.6	-7,863	-30.0	-7.5	-516	4,000	33	-483	-7.1
Pole	200	18.1	3,503	13.4	3.3	230	2,275	19	249	3.7
Crossarms	2	0.1	40	0.2	0.0	3	95	1	3	0.1
Insulators	8	0.7	289	1.1	0.3	19	87	1	20	0.3
Pole Load	1,108	100.0	26,188	100.0	24.9	1,720	7,387	62	1,782	26.2
Pole Reserve Capacity			79,010		75.1	5,080			5,018	73.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 210.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	632	57.1	16,916	64.6	16.1	1,111	4,355	36	1,147	16.9
Unknown, COMMUNICATION	274	24.7	5,729	21.9	5.5	376	662	6	382	5.6
Pole	200	18.1	3,503	13.4	3.3	230	2,275	19	249	3.7
<Undefined>	2	0.1	40	0.2	0.0	3	95	1	3	0.1
Totals:	1,108	100.0	26,188	100.0	24.9	1,720	7,387	62	1,782	26.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.75	0.00	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	14,001	0	761	14,762
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.75	0.00	0.2316	0.44	0.129	138.9	317.6	138.9	1,064	-14,662	0	1,011	-13,650
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	13,579	-103	738	14,214
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.44	0.129	138.9	317.6	138.9	1,064	-14,220	-137	981	-13,376
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	13,579	95	738	14,412
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	45.37	0.2316	0.44	0.129	138.9	317.6	138.9	1,064	-14,220	127	981	-13,112

Neutral	#6 COPPER SOLID	KU, UTILITY	26.27	7.02	0.1620	0.23	0.079	104.0	136.8	104.0	668	6,457	11	506	6,975
Neutral	#6 COPPER SOLID	KU, UTILITY	26.27	7.02	0.1620	0.42	0.079	138.9	317.6	138.9	668	-6,762	15	672	-6,075
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.51	7.07	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	9,985	5	543	10,532
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	24.75	7.12	0.2316	0.25	0.129	104.0	136.8	104.0	1,064	9,690	5	527	10,221
Totals:											17,426	18	7,458	24,902	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.36	7.33	1.3300	1.38	0.337	104.0	136.8	104.0	925	7,271	48	1,137	8,456
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.36	7.33	1.3300	1.95	0.337	138.9	317.6	139.0	925	-7,614	64	1,511	-6,039
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.18	7.47	1.5000	1.60	0.900	104.0	136.8	104.1	2,000	14,116	85	1,116	15,317
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.18	7.47	1.5000	2.29	0.900	138.9	317.6	139.0	2,000	-14,782	114	1,483	-13,186
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.23	7.53	0.6570	1.37	0.190	104.0	136.8	104.0	750	5,030	28	613	5,672
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.23	7.53	0.6570	1.94	0.190	138.9	317.6	138.9	750	-5,268	37	815	-4,415
		COMMUNICATION													
Totals:											-1,247	376	6,676	5,805	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.86	5.79	317.2	317.2	50.00	4.50	3.50	96.00	-13	54	40	
Totals:											-13	54	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.88	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.05	45.00	39.9	0.0	6.00	3.50	7.50	-43	42	0
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.05	-45.00	234.5	0.0	6.00	3.50	7.50	39	42	82
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.27	0.00	227.2	317.2	2.00	3.00	3.19	2	12	14

Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	136.8	136.8	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.75	0.00	136.8	136.8	2.00	3.00	3.19	1	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.36	0.00	227.2	317.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.18	0.00	227.2	317.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.23	0.00	227.2	317.2	5.00	3.00	0.00	6	0	6
Totals:										17	276	293

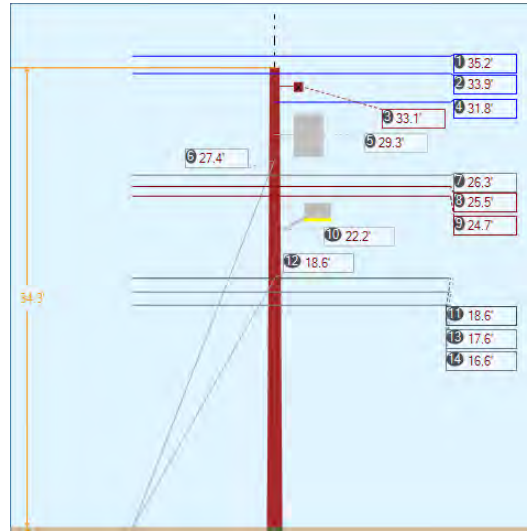
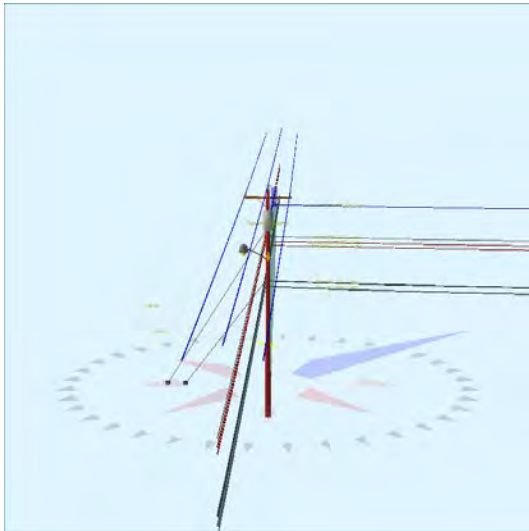
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.34	0.00	22.61	0.375	75.00	308.3	47.0	0.273	31.46	0.71

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,462	4,056	3,602	2,632	2,459	-341	-7,989
Totals:										2,632	2,459	-341	-7,989

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.61	308.3	20,000	1.00	20,000	4,056	3,602	20.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.12	33.39	11.43	12.20	7.96	12.37	1.60e+6	60.00	57.00	34.88	319,450	3211.55	43.48

Pole Num:	26W - 27220	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.12	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018899 Deg	Longitude:	-84.463208 Deg	Elevation:	878.83327047166		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.2	0.0
Groundline	27.2	0.0
Vertical	10.3	24.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,641	89.5
Groundline	20,641	89.5
GL Allowable	84,555	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.7	230.0		40.8	134.8	44.7	50.0
? EHS 3/8 (Down)			27.4	58.8	134.8	71.0	50.0
? Single Helix Anchor	14.5	230.0		21.5	134.8	23.1	50.0
? EHS 1/4 (Down)			18.6	71.9	134.8	85.0	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 89.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,746	234.2	66,613	322.7	78.8	8,196	450	4	8,201	120.6
Comms	3,011	188.3	35,162	170.4	41.6	4,327	846	8	4,335	63.7
GuyBraces	-5,365	-335.4	-84,573	-409.7	-100.0	-10,406	15,495	149	-10,257	-150.8
PowerEquipments	29	1.8	1,116	5.4	1.3	137	694	7	144	2.1
Pole	133	8.3	1,512	7.3	1.8	186	1,920	18	204	3.0
Crossarms	23	1.4	510	2.5	0.6	63	95	1	64	0.9
Streetlights	14	0.9	101	0.5	0.1	12	86	1	13	0.2
Insulators	9	0.6	200	1.0	0.2	25	123	1	26	0.4
Pole Load	1,600	100.0	20,641	100.0	24.4	2,540	19,709	190	2,730	40.1
Pole Reserve Capacity			63,914		75.6	4,260			4,070	59.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 89.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	439	27.5	7,811	37.8	9.2	961	11,656	112	1,073	15.8
Unknown, COMMUNICATION	1,003	62.7	10,755	52.1	12.7	1,323	6,032	58	1,381	20.3
Pole	133	8.3	1,512	7.3	1.8	186	1,920	18	204	3.0
<Undefined>	25	1.6	563	2.7	0.7	69	101	1	70	1.0
Totals:	1,600	100.0	20,641	100.0	24.4	2,540	19,709	190	2,730	40.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.19	0.00	0.2316	0.24	0.129	111.1	137.1	111.1	1,064	32,807	0	25	32,833
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.19	0.00	0.2316	0.21	0.129	104.0	316.8	104.0	1,064	-32,995	0	20	-32,975
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.88	45.33	0.2316	0.24	0.129	111.1	137.1	111.1	1,064	31,588	-72	24	31,540
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.88	45.33	0.2316	0.21	0.129	104.0	316.8	104.0	1,064	-31,769	-68	20	-31,817

Primary	#4 COPPER 7 STRAND	KU, UTILITY	33.88	45.33	0.2316	0.24	0.129	111.1	137.1	111.1	1,064	31,588	90	24	31,703
Primary	#4 COPPER 7 STRAND	KU, UTILITY	33.88	45.33	0.2316	0.21	0.129	104.0	316.8	104.0	1,064	-31,769	85	20	-31,665
Primary	#4 COPPER 7 STRAND	KU, UTILITY	31.75	20.95	0.2316	0.40	0.129	132.0	49.8	132.0	1,064	33,807	9	569	34,385
Neutral	#6 COPPER SOLID	KU, UTILITY	26.29	6.65	0.1620	0.22	0.079	111.1	137.1	111.1	668	15,384	-9	17	15,392
Neutral	#6 COPPER SOLID	KU, UTILITY	26.29	6.65	0.1620	0.19	0.079	104.0	316.8	104.0	668	-15,472	-8	14	-15,466
Neutral	#6 COPPER SOLID	KU, UTILITY	26.29	6.65	0.1620	0.38	0.079	132.0	49.8	132.0	668	17,575	11	426	18,011
Secondary	#4 COPPER SOLID	KU, UTILITY	25.45	6.70	0.2043	0.24	0.126	111.1	137.1	111.1	982	21,894	-12	17	21,900
Secondary	#4 COPPER SOLID	KU, UTILITY	25.45	6.70	0.2043	0.21	0.126	104.0	316.8	104.0	982	-22,019	-11	14	-22,016
Secondary	#4 COPPER SOLID	KU, UTILITY	25.45	6.70	0.2043	0.39	0.126	132.0	49.8	132.0	982	25,011	14	439	25,463
Secondary	#4 COPPER SOLID	KU, UTILITY	24.73	6.74	0.2043	0.24	0.126	111.1	137.1	111.1	982	21,276	-12	17	21,281
Secondary	#4 COPPER SOLID	KU, UTILITY	24.73	6.74	0.2043	0.21	0.126	104.0	316.8	104.0	982	-21,398	-11	14	-21,395
Secondary	#4 COPPER SOLID	KU, UTILITY	24.73	6.74	0.2043	0.39	0.126	132.0	49.8	132.0	982	24,303	14	426	24,743
Totals:											99,811	20	2,086	101,916	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.59	7.12	1.3300	1.48	0.337	111.1	137.1	111.1	925	15,064	-38	33	15,059
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.59	7.12	1.3300	1.37	0.337	104.0	316.8	104.0	925	-15,151	-36	27	-15,160
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.59	7.12	1.3300	1.83	0.337	132.0	49.8	132.0	925	17,209	45	833	18,087
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.58	7.18	1.5000	1.72	0.900	111.1	137.1	111.1	2,000	30,805	-67	34	30,772
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.58	7.18	1.5000	1.59	0.900	104.0	316.8	104.1	2,000	-30,982	-63	28	-31,017
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.58	7.18	1.5000	2.14	0.900	132.0	49.8	132.0	2,000	35,186	80	861	36,127
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.58	7.24	0.6570	1.42	0.190	111.1	137.1	111.1	750	10,895	-22	19	10,891
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.58	7.24	0.6570	1.31	0.190	104.0	316.8	104.0	750	-10,957	-21	15	-10,963
Totals:												52,070	-122	1,850	53,798

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA KU, UTILITY	29.28	20.97	135.0	135.0	365.00	39.00	--	22.00	--	849	859	1,708	
Totals:												849	859	1,708

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	33.07	5.49	136.9	136.9	50.00	4.50	3.50	96.00	29	752	781		
Totals:												29	752	781

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm KU, UTILITY	22.22	4.40	220.0	220.0	45.00	24.00	20.00	3.00	36.00	-156	310	154	
Totals:												-156	310	154

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV KU, UTILITY	34.32	0.00	0.0	0.0	13.00	9.00	10.50	0	112	112
Pin	Pin Insulator - 5 kV KU, UTILITY	33.26	45.00	220.0	0.0	6.00	3.50	7.50	-28	30	2
Pin	Pin Insulator - 5 kV KU, UTILITY	33.26	-45.00	53.9	0.0	6.00	3.50	7.50	35	30	65
Deadend	Deadend 17.13"	31.75	0.00	49.8	49.8	3.00	3.90	17.13	8	73	80
Spool	Spool Insulator - 25 kV KU, UTILITY	26.29	0.00	226.9	136.9	2.00	3.00	3.19	-2	9	7
Spool	Spool Insulator - 25 kV KU, UTILITY	26.29	0.00	46.9	136.9	2.00	3.00	3.19	2	9	10
Spool	Spool Insulator - 25 kV KU, UTILITY	25.45	0.00	226.9	136.9	2.00	3.00	3.19	-2	8	7
Spool	Spool Insulator - 25 kV KU, UTILITY	25.45	0.00	46.9	136.9	2.00	3.00	3.19	2	8	10
Spool	Spool Insulator - 25 kV KU, UTILITY	24.73	0.00	226.9	136.9	2.00	3.00	3.19	-2	8	7
Spool	Spool Insulator - 25 kV KU, UTILITY	24.73	0.00	46.9	136.9	2.00	3.00	3.19	2	8	10
Bolt	Three Bolt Unknown, COMMUNICATION	18.59	0.00	226.9	136.9	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt Unknown, COMMUNICATION	18.59	0.00	46.9	136.9	5.00	3.00	0.00	4	0	4

Bolt	Three Bolt	Unknown, COMMUNICATION	17.58	0.00	226.9	136.9	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	17.58	0.00	46.9	136.9	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	16.58	0.00	226.9	136.9	5.00	3.00	0.00	-4	0	-4
Totals:										10	295	305

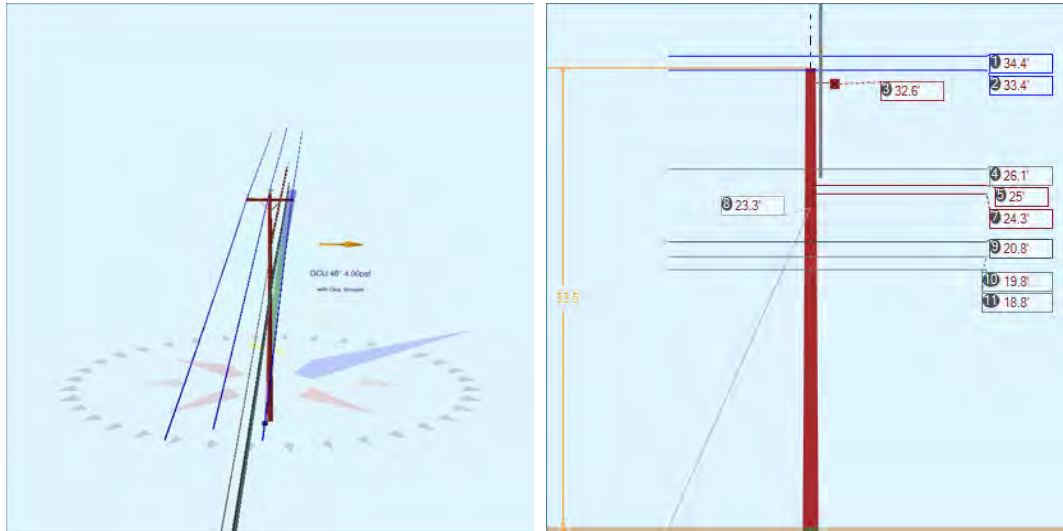
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	27.42	0.00	17.65	0.375	75.00	230.0	57.0	0.273	30.93	1.59
EHS 1/4	Down	Unknown, COMMUNICATION	18.59	0.00	14.53	0.25	75.00	230.0	51.8	0.121	21.86	1.33

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,840	8,945	8,157	6,843	4,439	-3,427	-92,057
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,090	4,627	4,301	3,381	2,659	-2,053	-37,338
Totals:										10,224	7,098	-5,480	-129,395

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	17.65	230.0	20,000	1.00	20,000	8,945	8,157	44.7
Single Helix Anchor			18.00	14.53	230.0	20,000	1.00	20,000	4,627	4,301	23.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.13	33.83	10.50	20.47	7.32	11.50	1.60e+6	60.00	57.00	34.32	191,405	1913.48	9.71

Pole Num:	27W - 27220-125-02	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.47	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018674 Deg	Longitude:	-84.462946 Deg	Elevation:	879.80496510437		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.3	0.0
Groundline	26.3	0.0
Vertical	2.9	21.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,883	42.7
Groundline	20,883	42.7
GL Allowable	82,455	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.4	137.0		18.1	47.7	19.4	310.0
? EHS 3/8 (Down)			23.3	26.1	47.7	30.8	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 42.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	470	52.3	13,160	63.0	16.0	1,097	299	3	1,100	16.2
Comms	380	42.3	7,860	37.6	9.5	655	638	6	662	9.7
GuyBraces	-177	-19.7	-4,082	-19.6	-5.0	-340	3,956	39	-302	-4.4
Pole	182	20.3	3,081	14.8	3.7	257	1,856	18	275	4.0
Crossarms	1	0.1	41	0.2	0.1	4	95	1	4	0.1
Risers	33	3.7	532	2.6	0.7	44	47	0	45	0.7
Insulators	9	0.9	290	1.4	0.4	24	87	1	25	0.4
Pole Load	898	100.0	20,883	100.0	25.3	1,741	6,978	68	1,810	26.6
Pole Reserve Capacity			61,572		74.7	5,059			4,990	73.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 42.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	335	37.3	9,884	47.3	12.0	824	4,361	43	867	12.7
Unknown, COMMUNICATION	380	42.3	7,877	37.7	9.6	657	667	7	663	9.8
Pole	182	20.3	3,081	14.8	3.7	257	1,856	18	275	4.0
<Undefined>	1	0.1	41	0.2	0.1	4	95	1	4	0.1
Totals:	898	100.0	20,883	100.0	25.3	1,741	6,978	68	1,810	26.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.40	0.00	0.2316	0.41	0.129	133.8	136.8	133.8	1,064	-3,382	0	980	-2,402
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.40	0.00	0.2316	0.28	0.129	111.1	317.1	111.1	1,064	3,630	0	813	4,443
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.37	45.33	0.2316	0.41	0.129	133.8	136.8	133.8	1,064	-3,280	134	950	-2,196
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.37	45.33	0.2316	0.28	0.129	111.1	317.1	111.1	1,064	3,521	111	789	4,421
Primary	#4 COPPER 7 STRAND KU, UTILITY	33.37	45.33	0.2316	0.41	0.129	133.8	136.8	133.8	1,064	-3,280	-131	950	-2,461

Primary	#4 COPPER 7 STRAND	KU, UTILITY	33.37	45.33	0.2316	0.28	0.129	111.1	317.1	111.1	1,064	3,521	-109	789	4,201
Neutral	#6 COPPER SOLID	KU, UTILITY	26.15	6.61	0.1620	0.39	0.079	133.8	136.8	133.8	668	-1,613	14	673	-925
Neutral	#6 COPPER SOLID	KU, UTILITY	26.15	6.61	0.1620	0.27	0.079	111.1	317.1	111.1	668	1,732	12	559	2,303
Secondary	#4 COPPER SOLID	KU, UTILITY	24.96	6.68	0.2043	0.28	0.126	111.1	317.1	111.1	982	2,430	1	568	2,999
Secondary	#4 COPPER SOLID	KU, UTILITY	24.33	6.72	0.2043	0.28	0.126	111.1	317.1	111.1	982	2,369	1	554	2,924
Totals:											5,648	33	7,625	13,306	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.85	6.93	1.3300	1.86	0.337	133.8	136.8	133.8	925	-1,781	61	1,485	-236
CATV	CATV 1.0	Unknown, COMMUNICATION	20.85	6.93	1.3300	1.49	0.337	111.1	317.1	111.1	925	1,912	50	1,233	3,195
Telco	TELE 1.5	Unknown, COMMUNICATION	19.76	7.00	1.5000	2.18	0.900	133.8	136.8	133.8	2,000	-3,649	107	1,537	-2,005
Telco	TELE 1.5	Unknown, COMMUNICATION	19.76	7.00	1.5000	1.73	0.900	111.1	317.1	111.1	2,000	3,917	89	1,276	5,283
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.82	7.06	0.6570	1.85	0.190	133.8	136.8	133.8	750	-1,303	35	847	-421
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.82	7.06	0.6570	1.48	0.190	111.1	317.1	111.1	750	1,399	29	703	2,132
Totals:											495	371	7,081	7,947	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.55	5.47	316.9	316.9	50.00	4.50	3.50	96.00	3	39	42	
Totals:											3	39	42

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 160.0°	Riser	KU, UTILITY	24.62	5.85	160.0	160.0	24.62	295.48	2.50	2.50	295.48	-5	543	538
Totals:											-5	543	538	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	33.53	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.74	45.00	40.0	0.0	6.00	3.50	7.50	43	42	85
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.74	-45.00	233.9	0.0	6.00	3.50	7.50	-42	42	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.15	0.00	46.9	316.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.96	0.00	317.1	317.1	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.33	0.00	317.1	317.1	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.85	0.00	46.9	316.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.76	0.00	46.9	316.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.82	0.00	46.9	316.9	5.00	3.00	0.00	6	0	6
Totals:										20	274	294

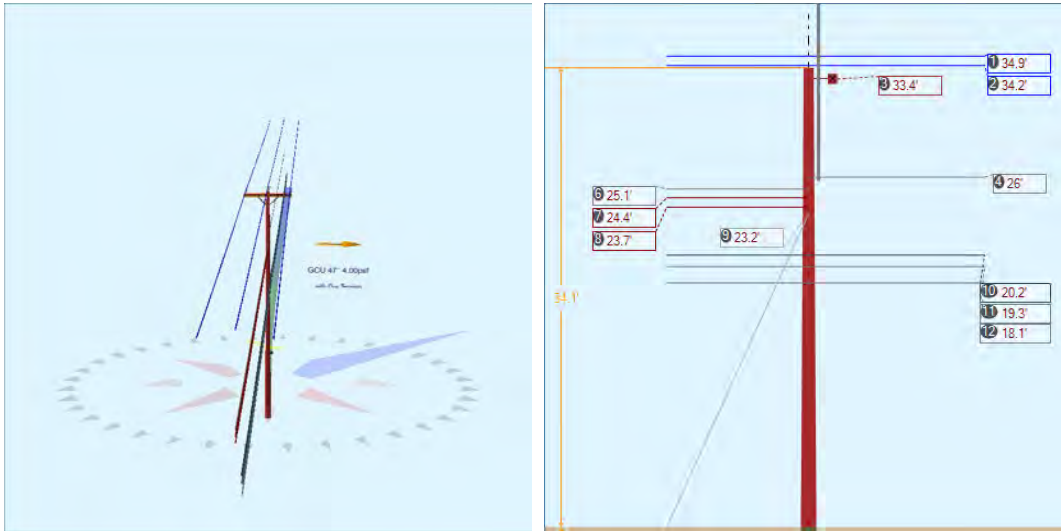
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	23.34	0.00	22.37	0.375	75.00	137.0	46.1	0.273	30.58	0.70

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,269	3,881	3,616	2,604	2,509	-187	-4,127
Totals:										2,604	2,509	-187	-4,127

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	22.37	137.0	20,000	1.00	20,000	3,881	3,616	19.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.63	33.46	10.52	11.68	7.32	11.41	1.60e+6	60.00	57.00	33.53	239,617	2406.36	34.48

Pole Num:	28W- 27290-126-01	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018412 Deg	Longitude:	-84.462610 Deg	Elevation:	876.446676002687		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.7	0.0
Groundline	23.7	0.0
Vertical	3.0	22.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,067	54.8
Groundline	19,067	54.8
GL Allowable	83,849	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.3	316.0		17.2	47.0	19.3	130.0
? EHS 3/8 (Down)			23.2	24.8	47.0	30.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 54.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	605	72.1	15,846	83.1	18.9	1,312	289	3	1,315	19.3
Comms	351	41.8	7,006	36.8	8.4	580	620	6	586	8.6
GuyBraces	-351	-41.8	-7,976	-41.8	-9.5	-660	3,755	36	-624	-9.2
Pole	185	22.0	3,139	16.5	3.7	260	1,898	18	278	4.1
Crossarms	4	0.4	116	0.6	0.1	10	285	3	12	0.2
Risers	34	4.0	553	2.9	0.7	46	48	0	46	0.7
Insulators	12	1.4	383	2.0	0.5	32	114	1	33	0.5
Pole Load	839	100.0	19,067	100.0	22.7	1,579	7,009	68	1,647	24.2
Pole Reserve Capacity			64,782		77.3	5,221			5,153	75.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 54.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	300	35.7	8,790	46.1	10.5	728	4,177	40	768	11.3
Unknown, COMMUNICATION	351	41.8	7,023	36.8	8.4	582	649	6	588	8.6
Pole	185	22.0	3,139	16.5	3.7	260	1,898	18	278	4.1
<Undefined>	4	0.4	116	0.6	0.1	10	285	3	12	0.2
Totals:	839	100.0	19,067	100.0	22.7	1,579	7,009	68	1,647	24.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.93	0.00	0.2316	0.25	0.129	104.1	136.7	104.1	1,064	6,775	0	769	7,543
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.93	0.00	0.2316	0.41	0.129	133.8	316.8	133.8	1,064	-6,691	0	988	-5,703
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.23	45.33	0.2316	0.25	0.129	104.1	136.7	104.1	1,064	6,639	-101	753	7,292
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.23	45.33	0.2316	0.25	0.129	104.1	136.7	104.1	1,064	6,639	104	753	7,497
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.23	45.33	0.2316	0.41	0.129	133.8	316.8	133.8	1,064	-6,558	129	968	-5,460

Primary	#4 COPPER 7 STRAND	KU, UTILITY	34.23	45.33	0.2316	0.41	0.129	133.8	316.8	133.8	1,064	-6,558	-134	968	-5,723
Neutral	#6 COPPER SOLID	KU, UTILITY	25.96	6.65	0.1620	0.39	0.079	133.8	316.8	133.8	668	-3,121	-2	664	-2,459
Neutral	#6 COPPER SOLID	KU, UTILITY	25.08	6.71	0.1620	0.24	0.079	104.1	136.7	104.1	668	3,053	2	499	3,554
Secondary	#4 COPPER SOLID	KU, UTILITY	24.42	6.75	0.2043	0.24	0.126	104.1	136.7	104.1	982	4,370	2	517	4,889
Secondary	#4 COPPER SOLID	KU, UTILITY	23.72	6.79	0.2043	0.24	0.126	104.1	136.7	104.1	982	4,245	2	502	4,750
Totals:											8,795	3	7,381	16,178	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.19	7.00	1.3300	1.39	0.337	104.1	136.7	104.1	925	3,403	47	1,111	4,561
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.19	7.00	1.3300	1.86	0.337	133.8	316.8	133.8	925	-3,361	61	1,427	-1,873
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.32	7.06	1.5000	1.61	0.900	104.1	136.7	104.1	2,000	7,043	83	1,162	8,288
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.32	7.06	1.5000	2.18	0.900	133.8	316.8	133.8	2,000	-6,956	107	1,493	-5,356
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.11	7.13	0.6570	1.37	0.190	104.1	136.7	104.1	750	2,475	27	630	3,132
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.11	7.13	0.6570	1.85	0.190	133.8	316.8	133.8	750	-2,444	35	809	-1,600
		COMMUNICATION													
Totals:											159	361	6,633	7,153	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.42	5.45	136.7	136.7	50.00	4.50	3.50	96.00	0	83	83	
Normal	Crossarm	33.42	5.45	316.8	316.8	50.00	4.50	3.50	96.00	-6	41	35	
Totals:											-6	124	118

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 340.0°	Riser	25.17	5.85	340.0	340.0	25.17	301.98	2.50	2.50	301.98	3	562	565
Totals:											3	562	565

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.05	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	45.00	219.8	0.0	6.00	3.50	7.50	-42	43	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	-45.00	53.6	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	45.00	39.9	0.0	6.00	3.50	7.50	42	43	84
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.61	-45.00	233.7	0.0	6.00	3.50	7.50	-43	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.96	0.00	316.8	316.8	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.08	0.00	136.7	136.7	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.42	0.00	136.7	136.7	2.00	3.00	3.19	0	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.72	0.00	136.7	136.7	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.19	0.00	46.7	316.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.32	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.11	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Totals:										17	373	391

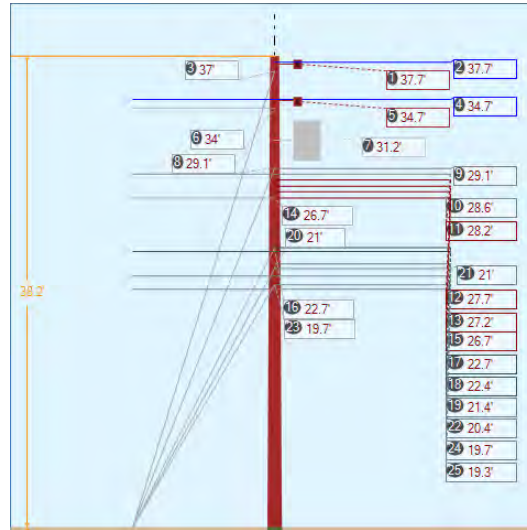
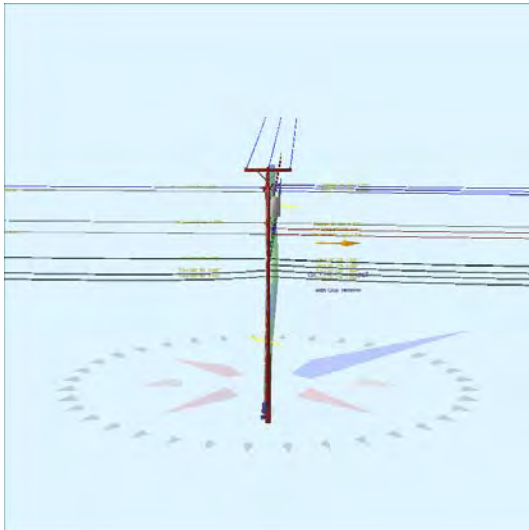
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	23.23	0.00	22.26	0.375	75.00	316.0	46.1	0.273	30.43	0.66

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,234	3,849	3,431	2,471	2,381	-362	-8,143
Totals:										2,471	2,381	-362	-8,143

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.26	316.0	20,000	1.00	20,000	3,849	3,431	19.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.96	33.50	10.57	11.80	7.32	11.47	1.60e+6	60.00	57.00	34.05	236,815	2336.41	33.33

Pole Num:	33W - 27290-126	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.80	Construction Grade:	B	Pole Strength Factor:	0.65
Aux Data 3	Unset	G/L Circumference (in):	37.20	Loading District:	Medium	Transverse Wind LF:	2.50
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.65
Aux Data 5	Unset	Allowable Stress (psi):	5,200	Wind Speed (mph):	39.53	Vertical LF:	1.50
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018200 Deg	Longitude:	-84.462379 Deg	Elevation:	877.241137897575		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.0	43.4
Groundline	43.0	11.2
Vertical	38.1	331.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,774	43.4
Groundline	19,774	11.2
GL Allowable	70,654	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.0	137.0		71.6	43.4	75.8	320.0
? EHS 3/8 (Down)			37.0	69.8	43.4	120.7	320.0
? EHS 3/8 (Down)			29.1	59.6	43.4	105.3	320.0
? Single Helix Anchor	65.9	228.0		26.6	43.4	26.6	45.9
? EHS 3/8 (Span/Head)			34.0	14.3	43.4	23.6	46.9
? EHS 3/8 (Span/Head)			26.7	24.1	43.4	39.7	44.8
? Single Helix Anchor	16.0	137.0		16.9	43.4	18.4	320.0
? EHS 1/4 (Down)			22.7	56.5	43.4	101.6	320.0
? Single Helix Anchor	14.0	137.0		16.2	43.4	17.7	320.0
? EHS 1/4 (Down)			21.0	54.0	43.4	97.8	320.0
? Single Helix Anchor	12.0	137.0		15.3	43.4	16.9	320.0
? EHS 1/4 (Down)			19.7	51.1	43.4	92.9	320.0
System Capacity Summary:				Adequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 15.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	7,209	367.8	127,810	646.4	180.9	17,302	311	3	17,304	332.8
Comms	6,027	307.5	69,746	352.7	98.7	9,441	901	8	9,450	181.7
GuyBraces	-11,717	-597.8	-184,275	-931.9	-260.8	-24,945	35,645	324	-24,622	-473.5
PowerEquipments	53	2.7	1,401	7.1	2.0	190	548	5	195	3.7
Pole	271	13.8	2,827	14.3	4.0	383	1,754	16	399	7.7
Crossarms	86	4.4	1,636	8.3	2.3	222	300	3	224	4.3
Insulators	32	1.6	630	3.2	0.9	85	128	1	86	1.7
Pole Load	1,960	100.0	19,774	100.0	28.0	2,677	39,586	359	3,036	58.4
Pole Reserve Capacity			50,880		72.0	2,523			2,164	41.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 15.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-1,742	-88.9	-23,513	-118.9	-33.3	-3,183	24,346	221	-2,962	-57.0
Unknown, COMMUNICATION	3,345	170.6	38,824	196.3	55.0	5,256	13,186	120	5,375	103.4
Pole	271	13.8	2,827	14.3	4.0	383	1,754	16	399	7.7
<Undefined>	86	4.4	1,636	8.3	2.3	222	300	3	224	4.3
Totals:	1,960	100.0	19,774	100.0	28.0	2,677	39,586	359	3,036	58.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	37.70	50.34	0.2316	0.25	0.129	104.1	316.7	104.1	1,064	33,855	7	1,027	34,888
Primary	#4 COPPER 7 STRAND KU, UTILITY	37.70	50.34	0.2316	0.25	0.129	104.1	316.7	104.1	1,064	33,855	-4	1,027	34,878
Primary	#4 COPPER 7 STRAND KU, UTILITY	37.70	22.57	0.2316	0.25	0.129	104.1	316.7	104.1	1,064	33,855	3	1,027	34,885
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.68	16.62	0.3980	0.06	0.145	65.9	228.0	65.9	2,128	-103,192	-5	37	-103,160
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	22.75	0.2316	0.33	0.129	130.0	48.8	130.0	1,064	51,136	7	71	51,214
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	50.42	0.2316	0.33	0.129	130.0	48.8	130.0	1,064	51,136	-1	71	51,206
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.68	50.42	0.2316	0.33	0.129	130.0	48.8	130.0	1,064	51,136	8	71	51,215
Neutral	#6 COPPER SOLID KU, UTILITY	28.64	6.73	0.1620	0.30	0.079	130.0	48.8	130.0	668	26,516	10	53	26,578
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.64	6.73	0.3980	0.06	0.145	65.9	228.0	65.9	2,128	-85,223	-8	30	-85,200
Neutral	#6 COPPER SOLID KU, UTILITY	29.08	6.70	0.1620	0.24	0.079	104.1	316.7	104.1	668	16,395	4	716	17,116
Secondary	#4 COPPER SOLID KU, UTILITY	27.66	6.78	0.2043	0.33	0.126	130.0	48.8	130.0	982	37,646	13	54	37,713
Secondary	#4 COPPER SOLID KU, UTILITY	28.16	6.75	0.2043	0.24	0.126	104.1	316.7	104.1	982	23,339	6	738	24,083
Secondary	#4 COPPER SOLID KU, UTILITY	26.70	6.84	0.2043	0.33	0.126	130.0	48.8	130.0	982	36,337	13	52	36,402
Secondary	#4 COPPER SOLID KU, UTILITY	27.20	6.81	0.2043	0.24	0.126	104.1	316.7	104.1	982	22,544	6	713	23,262
Totals:										229,335	59	5,686	235,080	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.67	7.08	1.3300	1.39	0.337	104.1	316.7	104.1	925	17,696	20	1,543	19,259
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.36	7.10	1.3300	1.78	0.337	130.0	48.8	130.0	925	28,670	40	114	28,825
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.36	7.10	1.3300	0.83	0.337	65.9	228.0	65.9	925	-28,926	-21	48	-28,898
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.36	7.16	1.5000	2.09	0.900	130.0	48.8	130.0	2,000	59,200	71	119	59,389
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.97	7.18	1.5000	1.61	0.900	104.1	316.7	104.1	2,000	35,393	34	1,561	36,988
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.36	7.22	1.5000	2.09	0.900	130.0	48.8	130.0	2,000	56,444	71	113	56,629
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.36	7.22	1.5000	0.95	0.900	65.9	228.0	65.9	2,000	-56,938	-36	48	-56,926
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.67	7.26	0.6570	1.37	0.190	104.1	316.7	104.1	750	12,449	11	847	13,307
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.31	7.28	1.5000	2.09	0.900	130.0	48.8	130.0	2,000	53,524	72	108	53,704
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.31	7.28	1.5000	0.95	0.900	65.9	228.0	65.9	2,000	-54,002	-36	46	-53,993
		COMMUNICATION													
Totals:											123,510	226	4,547	128,283	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	31.24	21.07	360.0	360.0	365.00	39.00	--	22.00	--	925	1,652	2,576
Totals:											925	1,652	2,576	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	37.70	5.44	316.7	316.7	50.00	4.50	3.50	96.00	0	220	220	
Normal	Crossarm	34.68	5.62	48.8	48.8	50.00	4.50	3.50	96.00	0	2,790	2,790	
Totals:											0	3,009	3,009

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend 17.13"	KU, UTILITY	37.70	45.00	39.8	0.0	3.00	3.90	17.13	19	155	174
Deadend	Deadend 17.13"	KU, UTILITY	37.70	-45.00	233.6	0.0	3.00	3.90	17.13	-10	155	145
Deadend	Deadend 17.13"	KU, UTILITY	37.70	0.00	316.7	0.0	3.00	3.90	17.13	4	155	160
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.68	0.00	228.0	228.0	3.00	3.80	12.75	-5	104	98
Deadend	Deadend 17.13"	KU, UTILITY	34.68	0.00	48.8	0.0	3.00	3.90	17.13	7	143	150
Deadend	Deadend 17.13"	KU, UTILITY	34.68	45.00	131.7	0.0	3.00	3.90	17.13	-2	143	141
Deadend	Deadend 17.13"	KU, UTILITY	34.68	-45.00	325.9	0.0	3.00	3.90	17.13	16	143	159
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.64	0.00	45.8	45.8	2.00	3.00	3.19	1	17	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.64	0.00	228.0	228.0	2.00	3.00	3.19	-1	17	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.08	0.00	315.8	45.8	2.00	3.00	3.19	1	17	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.66	0.00	45.8	45.8	2.00	3.00	3.19	1	16	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.16	0.00	315.8	45.8	2.00	3.00	3.19	1	17	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.70	0.00	45.8	45.8	2.00	3.00	3.19	1	16	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.20	0.00	315.8	45.8	2.00	3.00	3.19	1	16	17
Bolt	Single Bolt	Unknown, COMMUNICATION	22.67	0.00	316.7	316.7	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	22.36	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	22.36	0.00	228.0	318.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	21.36	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	20.97	0.00	316.7	316.7	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	20.36	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.36	0.00	228.8	138.8	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	19.67	0.00	316.7	316.7	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	19.31	0.00	48.8	138.8	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	19.31	0.00	228.8	138.8	5.00	3.00	0.00	-4	0	-4
Totals:										45	1,113	1,159

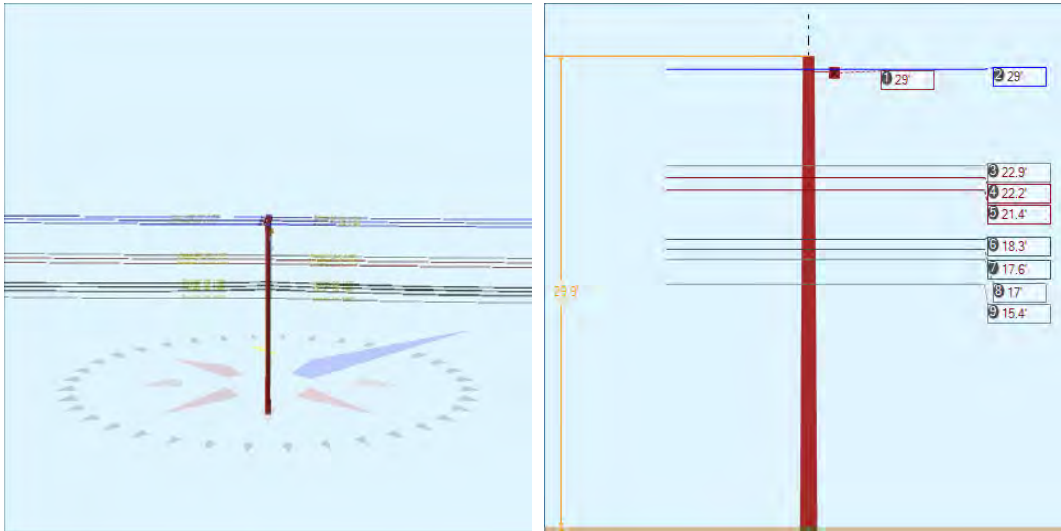
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	36.96	0.00	19.00	0.375	75.00	137.0	62.6	0.273	39.92	2.43
EHS 3/8	Down	KU, UTILITY	29.14	0.00	19.00	0.375	75.00	137.0	56.7	0.273	33.10	1.72
EHS 3/8	Span/Head	KU, UTILITY	34.00	34.00	65.88	0.375	75.00	228.0	0.0	0.273	64.05	0.80
EHS 3/8	Span/Head	KU, UTILITY	26.70	26.70	65.88	0.375	75.00	228.0	0.0	0.273	64.02	1.35
EHS 1/4	Down	Unknown, COMMUNICATION	22.67	0.00	16.00	0.25	75.00	137.0	54.6	0.121	26.03	1.25
EHS 1/4	Down	Unknown, COMMUNICATION	20.97	0.00	14.00	0.25	75.00	137.0	56.1	0.121	23.50	1.08
EHS 1/4	Down	Unknown, COMMUNICATION	19.67	0.00	12.00	0.25	75.00	137.0	58.4	0.121	21.34	0.93

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	16,732	10,141	9,674	8,586	4,456	-2,299	-82,807
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	14,590	8,843	8,257	6,901	4,534	-2,340	-66,636
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	3,269	1,981	1,981	0	1,981	-1,679	-57,087
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,507	3,337	3,337	0	3,337	-2,828	-75,522
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	6,083	3,687	3,380	2,755	1,958	-1,010	-22,287
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,852	3,547	3,233	2,683	1,804	-931	-18,924
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,563	3,372	3,059	2,606	1,603	-827	-15,674
Totals:									23,531	19,674	-11,914	-338,937	

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	19.00	137.0	25,000	1.00	25,000	18,958	17,907	75.8
Single Helix Anchor		18.00	65.88	228.0	20,000	1.00	20,000	5,319	5,318	26.6
Single Helix Anchor		18.00	16.00	137.0	20,000	1.00	20,000	3,687	3,380	18.4
Single Helix Anchor		18.00	14.00	137.0	20,000	1.00	20,000	3,547	3,233	17.7
Single Helix Anchor		18.00	12.00	137.0	20,000	1.00	20,000	3,372	3,059	16.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.42	34.41	10.64	34.13	7.32	11.85	1.60e+6	60.00	57.00	38.20	103,792	1039.01	2.62

Pole Num:	34W - NT	Pole Length / Class:	35 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.14	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.33	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018418 Deg	Longitude:	-84.462053 Deg	Elevation:	877.215079571299		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.9	0.0
Groundline	35.9	0.0
Vertical	7.7	17.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,730	317.8
Groundline	25,730	317.8
GL Allowable	72,572	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 317.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	429	34.3	10,962	42.6	15.1	1,029	328	3	1,032	15.2
Comms	631	50.5	11,339	44.1	15.6	1,064	859	9	1,073	15.8
Pole	159	12.7	2,478	9.6	3.4	233	1,566	17	249	3.7
Crossarms	3	0.2	71	0.3	0.1	7	190	2	9	0.1
Insulators	30	2.4	879	3.4	1.2	83	118	1	84	1.2
Pole Load	1,251	100.0	25,730	100.0	35.5	2,415	3,060	33	2,447	36.0
Pole Reserve Capacity			46,842		64.5	4,386			4,353	64.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 317.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	458	36.6	11,820	45.9	16.3	1,109	407	4	1,113	16.4
Unknown, COMMUNICATION	631	50.5	11,361	44.2	15.7	1,066	897	10	1,076	15.8
Pole	159	12.7	2,478	9.6	3.4	233	1,566	17	249	3.7
<Undefined>	3	0.2	71	0.3	0.1	7	190	2	9	0.1
Totals:	1,251	100.0	25,730	100.0	35.5	2,415	3,060	33	2,447	36.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#6 COPPER SOLID KU, UTILITY	29.02	7.29	0.1620	0.33	0.079	124.1	47.2	124.1	668	189	0	695	885
Primary	#6 COPPER SOLID KU, UTILITY	29.02	45.76	0.1620	0.33	0.079	124.1	47.2	124.1	668	189	7	695	892
Primary	#6 COPPER SOLID KU, UTILITY	29.02	45.41	0.1620	0.33	0.079	124.1	47.2	124.1	668	189	-7	695	877
Primary	#6 COPPER SOLID KU, UTILITY	29.02	18.21	0.1620	0.36	0.079	129.0	228.8	129.0	668	352	0	723	1,075
Primary	#6 COPPER SOLID KU, UTILITY	29.02	48.71	0.1620	0.36	0.079	129.0	228.8	129.0	668	352	7	723	1,082
Primary	#6 COPPER SOLID KU, UTILITY	29.02	48.38	0.1620	0.36	0.079	129.0	228.8	129.0	668	352	-7	723	1,067
Neutral	#6 COPPER SOLID KU, UTILITY	22.91	6.58	0.1620	0.33	0.079	124.1	47.2	124.1	668	150	13	549	712

Neutral	#6 COPPER SOLID	KU, UTILITY	22.91	6.58	0.1620	0.36	0.079	129.0	228.8	129.0	668	278	14	570	862
Secondary	#4 COPPER SOLID	KU, UTILITY	22.16	6.63	0.2043	0.35	0.126	124.1	47.2	124.1	982	213	17	565	795
Secondary	#4 COPPER SOLID	KU, UTILITY	22.16	6.63	0.2043	0.37	0.126	129.0	228.8	129.0	982	395	18	587	1,000
Secondary	#4 COPPER SOLID	KU, UTILITY	21.37	6.67	0.2043	0.35	0.126	124.1	47.2	124.1	982	205	18	545	767
Secondary	#4 COPPER SOLID	KU, UTILITY	21.37	6.67	0.2043	0.37	0.126	129.0	228.8	129.0	982	381	18	566	965
Totals:											3,245	99	7,634	10,978	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.25	6.86	1.3300	1.70	0.337	124.1	47.2	124.1	925	165	56	1,208	1,429
CATV	CATV 1.0	Unknown, COMMUNICATION	18.25	6.86	1.3300	1.78	0.337	129.0	228.8	129.0	925	306	58	1,256	1,621
CATV	CATV 1.0	Unknown, COMMUNICATION	17.62	6.90	1.3300	1.70	0.337	124.1	47.2	124.1	925	159	56	1,167	1,382
CATV	CATV 1.0	Unknown, COMMUNICATION	17.62	6.90	1.3300	1.78	0.337	129.0	228.8	129.0	925	296	58	1,213	1,567
Telco	TELE 1.5	Unknown, COMMUNICATION	16.98	6.94	1.5000	1.98	0.900	124.1	47.2	124.1	2,000	332	98	1,228	1,658
Telco	TELE 1.5	Unknown, COMMUNICATION	16.98	6.94	1.5000	2.08	0.900	129.0	228.8	129.0	2,000	616	102	1,277	1,995
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.40	7.03	0.6570	1.69	0.190	124.1	47.2	124.1	750	113	33	644	790
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.40	7.03	0.6570	1.77	0.190	129.0	228.8	129.0	750	210	34	670	913
Totals:											2,197	495	8,663	11,356	

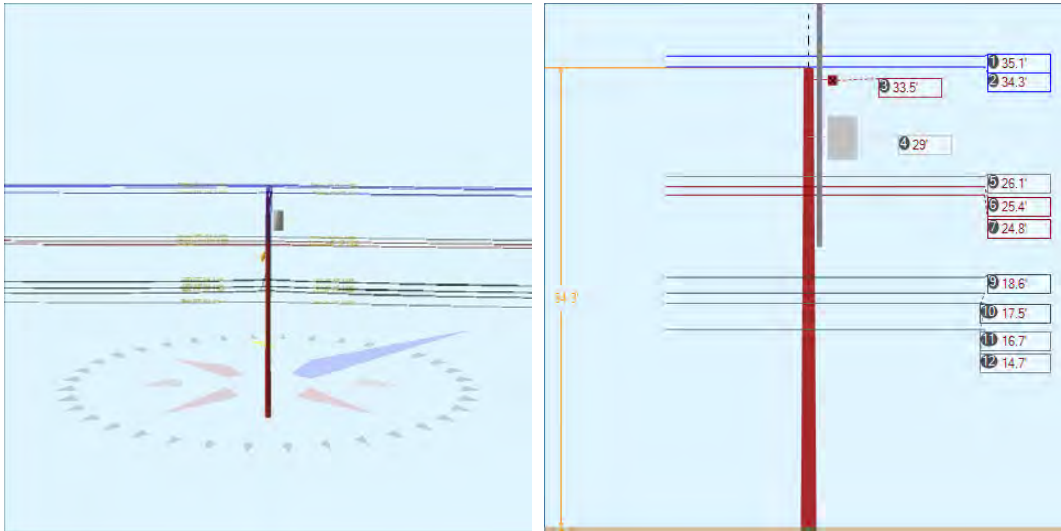
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	29.02	5.46	228.0	228.0	50.00	4.50	3.50	96.00	0	71	71	
Totals:											0	71	71

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	0.00	228.0	-180.8	3.00	3.80	12.75	0	137	137
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	45.00	311.1	-180.8	3.00	3.80	12.75	43	137	180
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	-45.00	144.9	-180.8	3.00	3.80	12.75	-43	137	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	0.00	228.0	0.8	3.00	3.80	12.75	0	137	137
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	45.00	311.1	0.8	3.00	3.80	12.75	43	137	180
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.02	-45.00	144.9	0.8	3.00	3.80	12.75	-43	137	94
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.91	0.00	318.0	228.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.16	0.00	318.0	228.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.37	0.00	318.0	228.0	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	18.25	0.00	318.0	228.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	318.0	228.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.98	0.00	318.0	228.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	15.40	0.00	318.0	228.0	5.00	3.00	0.00	6	0	6
Totals:										29	851	881

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.77	32.95	10.22	12.09	7.32	10.93	1.60e+6	60.00	57.00	29.86	39,505	397.38	12.99

Pole Num:	35W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.74	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018674 Deg	Longitude:	-84.461753 Deg	Elevation:	881.369422155292		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.1	0.0
Groundline	29.1	0.0
Vertical	11.6	20.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,121	134.7
Groundline	24,121	134.7
GL Allowable	84,398	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 134.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	350	30.5	10,383	43.1	12.3	834	313	3	837	12.3
Comms	544	47.4	8,829	36.6	10.5	709	820	8	717	10.5
PowerEquipments	42	3.6	1,112	4.6	1.3	89	694	7	96	1.4
Pole	188	16.3	3,280	13.6	3.9	263	1,915	18	282	4.1
Crossarms	1	0.1	43	0.2	0.1	4	95	1	4	0.1
Risers	15	1.3	221	0.9	0.3	18	39	0	18	0.3
Insulators	9	0.7	253	1.1	0.3	20	97	1	21	0.3
Pole Load	1,148	100.0	24,121	100.0	28.6	1,937	3,973	38	1,975	29.0
Pole Reserve Capacity			60,277		71.4	4,863			4,825	71.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 134.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	416	36.2	11,992	49.7	14.2	963	1,104	11	973	14.3
Unknown, COMMUNICATION	544	47.4	8,806	36.5	10.4	707	858	8	715	10.5
Pole	188	16.3	3,280	13.6	3.9	263	1,915	18	282	4.1
<Undefined>	1	0.1	43	0.2	0.1	4	95	1	4	0.1
Totals:	1,148	100.0	24,121	100.0	28.6	1,937	3,973	38	1,975	29.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	#6 COPPER SOLID	KU, UTILITY	35.13	0.00	0.1620	0.30	0.079	117.6	48.0	117.6	668	1,337	0	797	2,133
Primary	#6 COPPER SOLID	KU, UTILITY	35.13	0.00	0.1620	0.33	0.079	124.1	227.2	124.1	668	-1,009	0	841	-169
Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.30	0.079	117.6	48.0	117.6	668	1,306	87	778	2,171
Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.33	0.079	124.1	227.2	124.1	668	-986	92	821	-73
Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.30	0.079	117.6	48.0	117.6	668	1,306	-86	778	1,998

Primary	#6 COPPER SOLID	KU, UTILITY	34.32	45.33	0.1620	0.33	0.079	124.1	227.2	124.1	668	-986	-91	821	-256
Neutral	#6 COPPER SOLID	KU, UTILITY	26.14	6.65	0.1620	0.30	0.079	117.6	48.0	117.6	668	994	-13	593	1,574
Neutral	#6 COPPER SOLID	KU, UTILITY	26.14	6.65	0.1620	0.33	0.079	124.1	227.2	124.1	668	-751	-14	625	-139
Secondary	#4 COPPER SOLID	KU, UTILITY	25.40	6.70	0.2043	0.31	0.126	117.6	48.0	117.6	982	1,420	-17	613	2,016
Secondary	#4 COPPER SOLID	KU, UTILITY	25.40	6.70	0.2043	0.35	0.126	124.1	227.2	124.1	982	-1,072	-18	646	-444
Secondary	#4 COPPER SOLID	KU, UTILITY	24.78	6.74	0.2043	0.31	0.126	117.6	48.0	117.6	982	1,386	-17	598	1,967
Secondary	#4 COPPER SOLID	KU, UTILITY	24.78	6.74	0.2043	0.35	0.126	124.1	227.2	124.1	982	-1,046	-18	631	-433
Totals:											1,898	-92	8,542	10,347	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 18.63	7.11	1.3300	1.60	0.337	117.6	48.0	117.6	925	982	-55	1,168	2,095
	COMMUNICATION													
CATV	CATV 1.0	Unknown, 18.63	7.11	1.3300	1.70	0.337	124.1	227.2	124.1	925	-741	-58	1,232	433
	COMMUNICATION													
CATV	CATV 1.0	Unknown, 17.47	7.18	1.3300	1.60	0.337	117.6	48.0	117.6	925	920	-55	1,095	1,960
	COMMUNICATION													
CATV	CATV 1.0	Unknown, 17.47	7.18	1.3300	1.70	0.337	124.1	227.2	124.1	925	-695	-58	1,155	402
	COMMUNICATION													
Telco	TELE 1.5	Unknown, 16.71	7.23	1.5000	1.86	0.900	117.6	48.0	117.6	2,000	1,903	-97	1,145	2,951
	COMMUNICATION													
Telco	TELE 1.5	Unknown, 16.71	7.23	1.5000	1.98	0.900	124.1	227.2	124.1	2,000	-1,437	-102	1,208	-332
	COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 14.75	7.35	0.6570	1.58	0.190	117.6	48.0	117.6	750	630	-32	584	1,182
	COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 14.75	7.35	0.6570	1.69	0.190	124.1	227.2	124.1	750	-476	-34	617	107
	COMMUNICATION													
Totals:											1,086	-492	8,204	8,798

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.04	20.98	40.0	40.0	365.00	39.00	--	22.00	--	-100	1,209	1,108
Totals:											-100	1,209	1,108	

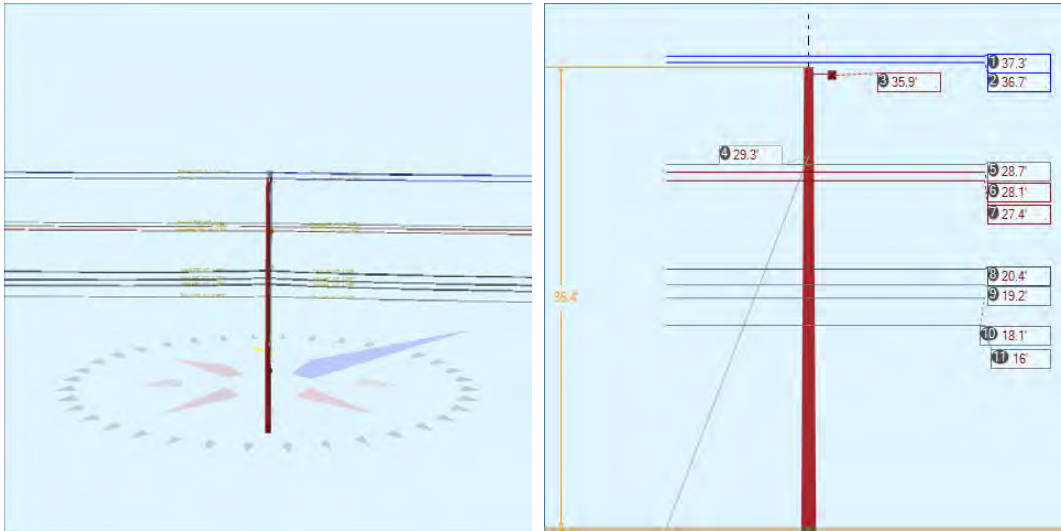
Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		33.51	5.46	48.0	48.0	50.00	4.50	3.50	96.00	2	40	43
Totals:											2	40	43

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 120.0°	Riser	KU, UTILITY	20.62	5.85	120.0	120.0	20.62	247.38	4.00	4.00	247.38	10	210	220
Totals:											10	210	220	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.26	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.70	45.00	131.1	0.0	6.00	3.50	7.50	43	43	86	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.70	-45.00	324.9	0.0	6.00	3.50	7.50	-42	43	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.14	0.00	317.6	47.6	2.00	3.00	3.19	-2	12	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.40	0.00	317.6	47.6	2.00	3.00	3.19	-2	12	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.78	0.00	317.6	47.6	2.00	3.00	3.19	-2	12	9	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.63	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.47	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.71	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.75	0.00	317.6	47.6	5.00	3.00	0.00	-6	0	-6	
Totals:											-29	281	252

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.71	33.29	10.65	14.77	7.32	11.50	1.60e+6	60.00	57.00	34.26	34,321	342.49	8.62

Pole Num:	36W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.018852 Deg	Longitude:	-84.461421 Deg	Elevation:	902.030420084675		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.6	0.0
Groundline	23.6	0.0
Vertical	1.1	19.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,252	318.3
Groundline	20,252	318.3
GL Allowable	87,439	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	9.3	317.0		0.0	317.9	9.4	140.0
? EHS 3/8 (Down)			29.3	0.0	317.9	15.0	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	257	27.9	8,276	40.9	9.5	642	305	3	645	9.5
Comms	454	49.2	7,930	39.2	9.1	615	936	9	624	9.2
GuyBraces	1	0.1	32	0.2	0.0	3	10	0	3	0.0
Pole	201	21.8	3,697	18.3	4.2	287	2,065	19	306	4.5
Crossarms	1	0.1	44	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	272	1.3	0.3	21	97	1	22	0.3
Pole Load	923	100.0	20,252	100.0	23.2	1,571	3,507	33	1,604	23.6
Pole Reserve Capacity			67,187		76.8	5,229			5,196	76.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	267	28.9	8,603	42.5	9.8	667	373	4	671	9.9
Unknown, COMMUNICATION	454	49.2	7,907	39.0	9.0	613	974	9	622	9.2
Pole	201	21.8	3,697	18.3	4.2	287	2,065	19	306	4.5
<Undefined>	1	0.1	44	0.2	0.1	3	95	1	4	0.1
Totals:	923	100.0	20,252	100.0	23.2	1,571	3,507	33	1,604	23.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#6 COPPER SOLID KU, UTILITY	37.26	0.00	0.1620	0.30	0.079	117.6	48.2	117.6	668	71	0	846	917
Primary	#6 COPPER SOLID KU, UTILITY	37.26	0.00	0.1620	0.30	0.079	117.6	228.0	117.6	668	-184	0	846	662
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	48.2	117.6	668	70	-87	834	818
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	228.0	117.6	668	-182	-87	834	566
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	48.2	117.6	668	70	87	834	991
Primary	#6 COPPER SOLID KU, UTILITY	36.74	45.33	0.1620	0.30	0.079	117.6	228.0	117.6	668	-182	87	834	740

Neutral	#6 COPPER SOLID	KU, UTILITY	28.68	6.62	0.1620	0.30	0.079	117.6	48.2	117.6	668	55	-13	651	693
Neutral	#6 COPPER SOLID	KU, UTILITY	28.68	6.62	0.1620	0.30	0.079	117.6	228.0	117.6	668	-142	-13	651	497
Secondary	#4 COPPER SOLID	KU, UTILITY	28.08	6.65	0.2043	0.31	0.126	117.6	48.2	117.6	982	79	-17	678	741
Secondary	#4 COPPER SOLID	KU, UTILITY	28.08	6.65	0.2043	0.31	0.126	117.6	228.0	117.6	982	-204	-17	678	458
Secondary	#4 COPPER SOLID	KU, UTILITY	27.41	6.69	0.2043	0.31	0.126	117.6	48.2	117.6	982	77	-17	662	722
Secondary	#4 COPPER SOLID	KU, UTILITY	27.41	6.69	0.2043	0.31	0.126	117.6	228.0	117.6	982	-199	-17	662	446
Totals:											-670	-92	9,014	8,253	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.42	7.11	1.3300	1.60	0.337	117.6	48.2	117.6	925	54	-55	1,282	1,281
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.42	7.11	1.3300	1.60	0.337	117.6	228.0	117.6	925	-140	-55	1,282	1,087
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.16	7.18	1.5000	1.86	0.900	117.6	48.2	117.6	2,000	110	-97	1,315	1,328
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.16	7.18	1.5000	1.86	0.900	117.6	228.0	117.6	2,000	-284	-97	1,315	935
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.13	7.24	1.5000	1.86	0.900	117.6	48.2	117.6	2,000	104	-97	1,244	1,250
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.13	7.24	1.5000	1.86	0.900	117.6	228.0	117.6	2,000	-268	-97	1,244	878
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.96	7.37	0.6570	1.58	0.190	117.6	48.2	117.6	750	34	-32	634	635
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.96	7.37	0.6570	1.58	0.190	117.6	228.0	117.6	750	-89	-32	634	513
	COMMUNICATION														
Totals:											-478	-562	8,948	7,908	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.92	5.44	48.1	48.1	50.00	4.50	3.50	96.00	0	44	44	
Totals:											0	44	44

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.38	0.00	0.0	0.0	13.00	9.00	10.50	0	169	169
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.11	45.00	131.2	0.0	6.00	3.50	7.50	-43	46	4
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.11	-45.00	325.0	0.0	6.00	3.50	7.50	43	46	89
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.68	0.00	138.1	48.1	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.08	0.00	138.1	48.1	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.41	0.00	138.1	48.1	2.00	3.00	3.19	-2	13	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.42	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.16	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.13	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.96	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Totals:										-29	301	272

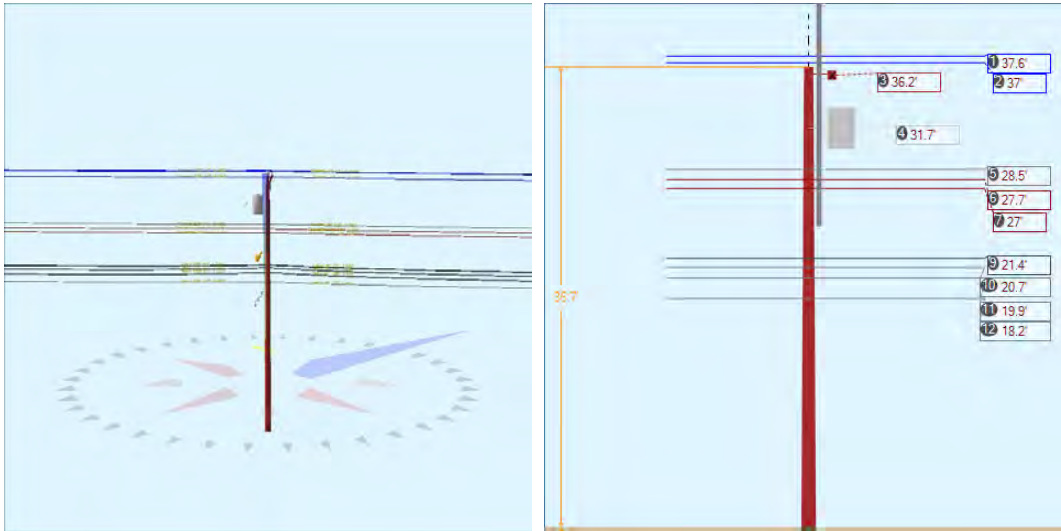
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	29.34	0.00	9.27	0.375	75.00	317.0	72.2	0.273	29.17	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,078	1,889	0	0	0	0	32
Totals:										0	0	0	32

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	9.27	317.0	20,000	1.00	20,000	1,889	0	9.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.69	33.01	10.86	8.17	7.32	11.63	1.60e+6	60.00	57.00	36.38	328,230	3188.47	90.91

Pole Num:	37W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.32	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.64	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019050 Deg	Longitude:	-84.461103 Deg	Elevation:	909.767420196178		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.2	0.0
Groundline	32.2	0.0
Vertical	14.4	22.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,913	141.6
Groundline	27,913	141.6
GL Allowable	88,242	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 141.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	345	29.8	11,491	41.2	13.0	882	354	3	886	13.0
Comms	545	47.1	10,719	38.4	12.2	823	970	9	832	12.2
PowerEquipments	42	3.6	1,361	4.9	1.5	105	694	6	111	1.6
Pole	203	17.6	3,767	13.5	4.3	289	2,091	20	309	4.5
Crossarms	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Risers	12	1.1	231	0.8	0.3	18	48	0	18	0.3
Insulators	9	0.7	298	1.1	0.3	23	97	1	24	0.3
Pole Load	1,156	100.0	27,913	100.0	31.6	2,143	4,348	41	2,184	32.1
Pole Reserve Capacity			60,329		68.4	4,657			4,616	67.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 141.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	407	35.2	13,392	48.0	15.2	1,028	1,155	11	1,039	15.3
Unknown, COMMUNICATION	545	47.1	10,708	38.4	12.1	822	1,008	9	832	12.2
Pole	203	17.6	3,767	13.5	4.3	289	2,091	20	309	4.5
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Totals:	1,156	100.0	27,913	100.0	31.6	2,143	4,348	41	2,184	32.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	#6 COPPER SOLID	KU, UTILITY	37.56	0.00	0.1620	0.34	0.079	126.2	48.7	126.2	668	-1,256	0	913	-343
Primary	#6 COPPER SOLID	KU, UTILITY	37.56	0.00	0.1620	0.30	0.079	117.6	228.2	117.6	668	1,474	0	850	2,324
Primary	#6 COPPER SOLID	KU, UTILITY	37.02	45.33	0.1620	0.34	0.079	126.2	48.7	126.2	668	-1,238	-94	900	-432
Primary	#6 COPPER SOLID	KU, UTILITY	37.02	45.33	0.1620	0.30	0.079	117.6	228.2	117.6	668	1,454	-87	838	2,204
Primary	#2 COPPER 7 STRAND	KU, UTILITY	37.02	45.33	0.2922	0.39	0.205	126.2	48.7	126.2	1,530	-2,836	167	1,077	-1,592

Primary	#2 COPPER 7 STRAND	KU, UTILITY	37.02	45.33	0.2922	0.34	0.205	117.6	228.2	117.6	1,530	3,330	155	1,003	4,488
Neutral	#6 COPPER SOLID	KU, UTILITY	28.52	6.64	0.1620	0.34	0.079	126.2	48.7	126.2	668	-953	14	693	-247
Neutral	#6 COPPER SOLID	KU, UTILITY	28.52	6.64	0.1620	0.30	0.079	117.6	228.2	117.6	668	1,119	13	645	1,777
Secondary	#4 COPPER SOLID	KU, UTILITY	27.72	6.69	0.2043	0.36	0.126	126.2	48.7	126.2	982	-1,362	18	717	-628
Secondary	#4 COPPER SOLID	KU, UTILITY	27.72	6.69	0.2043	0.31	0.126	117.6	228.2	117.6	982	1,599	17	667	2,283
Secondary	#4 COPPER SOLID	KU, UTILITY	27.02	6.73	0.2043	0.36	0.126	126.2	48.7	126.2	982	-1,328	18	698	-611
Secondary	#4 COPPER SOLID	KU, UTILITY	27.02	6.73	0.2043	0.31	0.126	117.6	228.2	117.6	982	1,559	17	650	2,226
Totals:											1,562	237	9,650	11,449	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.44	7.06	1.3300	1.74	0.337	126.2	48.7	126.2	925	-993	58	1,440	506
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.44	7.06	1.3300	1.60	0.337	117.6	228.2	117.6	925	1,166	54	1,341	2,561
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.70	7.11	1.5000	2.03	0.900	126.2	48.7	126.2	2,000	-2,072	-102	1,520	-655
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.70	7.11	1.5000	1.86	0.900	117.6	228.2	117.6	2,000	2,432	-95	1,415	3,752
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.88	7.15	1.5000	2.03	0.900	126.2	48.7	126.2	2,000	-1,990	-103	1,460	-634
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.88	7.15	1.5000	1.86	0.900	117.6	228.2	117.6	2,000	2,337	-96	1,359	3,600
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.25	7.25	0.6570	1.73	0.190	126.2	48.7	126.2	750	-685	-34	775	56
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.25	7.25	0.6570	1.59	0.190	117.6	228.2	117.6	750	804	-32	721	1,494
		COMMUNICATION													
Totals:											999	-350	10,031	10,680	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	31.71	20.95	230.0	230.0	365.00	39.00	--	22.00	--	33	1,323	1,356
Totals:											33	1,323	1,356	

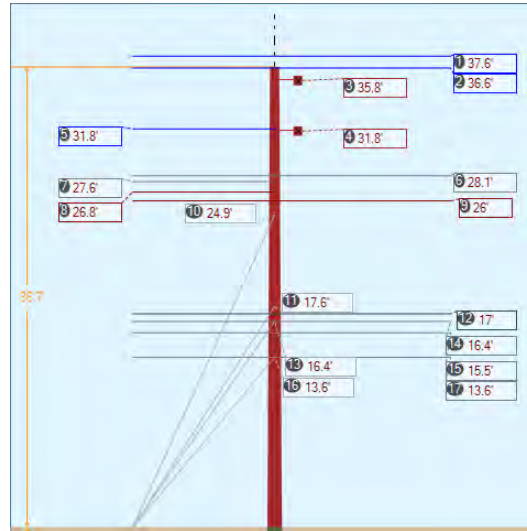
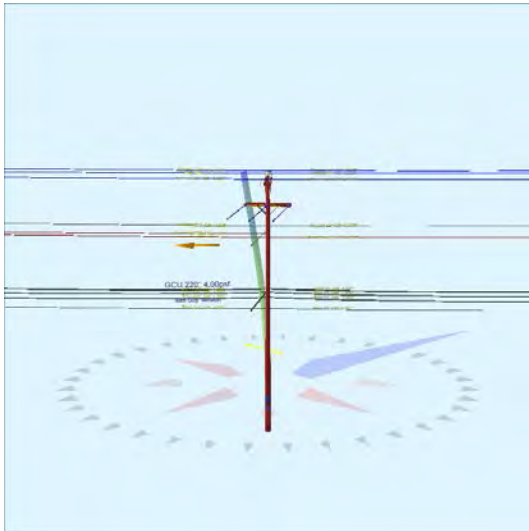
Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		36.21	5.44	48.4	48.4	50.00	4.50	3.50	96.00	-2	48	46
Totals:											-2	48	46

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 130.0°	Riser	KU, UTILITY	25.27	6.09	130.0	130.0	25.27	303.20	4.00	4.00	303.20	24	206	230
Totals:											24	206	230	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.68	0.00	0.0	0.0	13.00	9.00	10.50	0	171	171	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.40	-45.00	325.3	0.0	6.00	3.50	7.50	-43	47	4	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.40	45.00	131.5	0.0	6.00	3.50	7.50	42	47	89	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.52	0.00	138.4	48.4	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.72	0.00	138.4	48.4	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.02	0.00	138.4	48.4	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.44	0.00	138.4	48.4	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.70	0.00	318.4	48.4	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.88	0.00	318.4	48.4	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.25	0.00	318.4	48.4	5.00	3.00	0.00	-6	0	-6	
Totals:											-6	302	297

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.58	33.44	10.77	16.10	7.32	11.67	1.60e+6	60.00	57.00	36.68	30,179	301.97	6.94

Pole Num:	38W - L27290-P166-WS	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.28	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.65	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019311 Deg	Longitude:	-84.460813 Deg	Elevation:	894.87566514917		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.1	0.0
Groundline	45.1	0.0
Vertical	2.1	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	39,114	225.0
Groundline	39,114	225.0
GL Allowable	88,349	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	14.0	135.0		4.6	220.0	12.6	320.0
? EHS 3/8 (Down)			24.9	6.7	220.0	19.9	320.0
? Single Helix Anchor	10.0	135.0		1.3	220.0	4.2	320.0
? EHS 1/4 (Down)			17.6	2.3	220.0	8.1	320.0
? EHS 1/4 (Down)			16.4	2.0	220.0	7.3	320.0
? Single Helix Anchor	8.0	135.0		0.4	220.0	1.5	320.0
? EHS 1/4 (Down)			13.6	1.3	220.0	5.3	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 225.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,155	77.4	31,383	80.2	35.5	2,412	400	4	2,415	35.5
Comms	25	1.6	417	1.1	0.5	32	1,033	10	42	0.6
GuyBraces	19	1.3	368	0.9	0.4	28	1,675	16	44	0.6
Pole	203	13.6	3,754	9.6	4.3	289	2,094	20	308	4.5
Crossarms	72	4.8	2,556	6.5	2.9	196	380	4	200	2.9
Insulators	19	1.2	636	1.6	0.7	49	150	1	50	0.7
Pole Load	1,492	100.0	39,114	100.0	44.3	3,006	5,732	54	3,059	45.0
Pole Reserve Capacity			49,235		55.7	3,794			3,741	55.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 225.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,181	79.2	32,196	82.3	36.4	2,474	1,730	16	2,490	36.6
Unknown, COMMUNICATION	36	2.4	607	1.6	0.7	47	1,528	14	61	0.9
Pole	203	13.6	3,754	9.6	4.3	289	2,094	20	308	4.5
<Undefined>	72	4.8	2,556	6.5	2.9	196	380	4	200	2.9
Totals:	1,492	100.0	39,114	100.0	44.3	3,006	5,732	54	3,059	45.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.60	0.00	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-82,326	0	-1	-82,327
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.60	0.00	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	82,117	0	13	82,130
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.63	45.00	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-80,217	-4	-1	-80,222
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.63	45.00	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	80,013	-4	13	80,023
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.63	45.00	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-80,217	4	-1	-80,215
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.63	45.00	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	80,013	4	13	80,030
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	31.79	18.45	0.3250	0.03	0.107	16.6	144.5	16.6	150	1,022	0	121	1,143
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	31.79	48.64	0.3250	0.03	0.107	16.6	144.5	16.6	150	1,022	1	121	1,144
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	31.79	48.64	0.3250	0.03	0.107	16.6	144.5	16.6	150	1,022	-1	121	1,142
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.06	6.67	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-61,410	-1	-1	-61,412
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.06	6.67	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	61,254	-1	10	61,264
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	27.58	6.70	0.3250	0.03	0.107	16.6	144.5	16.6	150	886	0	105	992
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.75	6.75	0.3250	0.65	0.107	126.1	229.2	126.1	800	27,749	19	9	27,778
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.04	6.79	0.3250	0.20	0.107	130.4	44.1	130.4	1,684	-56,999	-1	-1	-57,001
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.04	6.79	0.3250	0.19	0.107	126.1	229.2	126.1	1,684	56,855	-1	9	56,863
Totals:										30,783	18	531	31,332	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.04	7.33	1.3300	0.20	0.337	16.6	144.5	16.6	150	547	1	144	693
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.04	7.33	1.3300	1.71	0.337	126.1	229.2	126.1	925	20,434	-4	13	20,443
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.04	7.33	1.3300	1.78	0.337	130.4	44.1	130.4	925	-20,486	-5	-1	-20,492
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.43	7.36	1.5000	2.10	0.900	130.4	44.1	130.4	2,000	-42,704	-3	-1	-42,708
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.43	7.36	1.5000	2.01	0.900	126.1	229.2	126.1	2,000	42,595	-3	14	42,607
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.52	7.42	1.5000	2.10	0.900	130.4	44.1	130.4	2,000	-40,347	-3	-1	-40,351
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.52	7.42	1.5000	2.01	0.900	126.1	229.2	126.1	2,000	40,244	-3	13	40,255
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	13.57	7.53	0.6570	1.71	0.190	130.4	44.1	130.4	750	-13,226	-1	-1	-13,228
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	13.57	7.53	0.6570	1.64	0.190	126.1	229.2	126.1	750	13,192	-1	7	13,198
		COMMUNICATION													
Totals:											251	-22	187	416	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.82	5.46	226.6	226.6	50.00	4.50	3.50	96.00	0	2,390	2,390	
Normal	Crossarm	31.79	5.70	144.5	144.5	50.00	4.50	3.50	96.00	0	162	162	
Totals:											0	2,552	2,552

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.72	0.00	0.0	0.0	13.00	9.00	10.50	0	170	170
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.01	45.00	309.7	0.0	6.00	3.50	7.50	-2	92	89
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.01	-45.00	143.6	0.0	6.00	3.50	7.50	2	92	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.79	0.00	144.5	0.0	3.00	3.80	12.75	1	75	76

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.79	45.00	227.2	0.0	3.00	3.80	12.75	23	75	97
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.79	-45.00	61.7	0.0	3.00	3.80	12.75	-20	75	55
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.06	0.00	316.6	226.6	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.58	0.00	144.5	144.5	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.75	0.00	229.2	229.2	2.00	3.00	3.19	2	12	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.04	0.00	316.6	226.6	2.00	3.00	3.19	0	12	12
Bolt	Single Bolt	Unknown, COMMUNICATION	17.04	0.00	144.5	234.5	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	17.04	0.00	319.2	229.2	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	16.43	0.00	316.6	226.6	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	15.52	0.00	316.6	226.6	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	13.57	0.00	316.6	226.6	5.00	3.00	0.00	0	0	0
Totals:										7	628	634

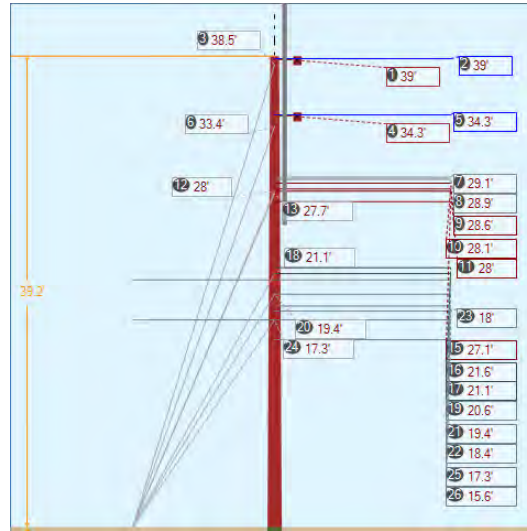
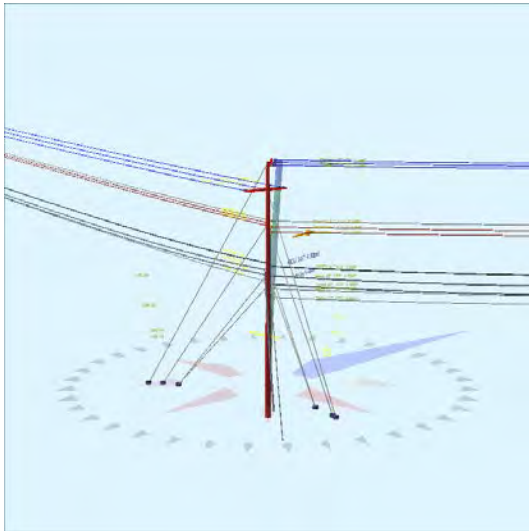
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	24.92	0.00	14.00	0.375	75.00	135.0	60.5	0.273	26.91	0.16
EHS 1/4	Down	Unknown, COMMUNICATION	17.64	0.00	10.00	0.25	75.00	135.0	60.2	0.121	18.58	0.04
EHS 1/4	Down	Unknown, COMMUNICATION	16.43	0.00	10.00	0.25	75.00	135.0	58.5	0.121	17.52	0.03
EHS 1/4	Down	Unknown, COMMUNICATION	13.57	0.00	8.00	0.25	75.00	135.0	59.3	0.121	14.04	0.02

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,761	2,510	926	806	457	0	177
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	487	443	138	120	69	0	77
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	438	398	120	102	63	0	68
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	320	291	76	65	39	0	46
Totals:										1,094	627	0	368

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	14.00	135.0	20,000	1.00	20,000	2,510	926	12.5
Single Helix Anchor		18.00	10.00	135.0	20,000	1.00	20,000	841	258	4.2
Single Helix Anchor		18.00	8.00	135.0	20,000	1.00	20,000	291	76	1.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.52	33.27	10.82	10.67	7.32	11.67	1.60e+6	60.00	57.00	36.72	270,899	2729.55	47.62

Pole Num:	57W - 27220-228	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.81	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.57	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021068 Deg	Longitude:	-84.458375 Deg	Elevation:	869.539565109081		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.0	347.0
Groundline	32.0	347.0
Vertical	45.9	346.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,140	347.0
Groundline	22,140	347.0
GL Allowable	95,144	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.0	229.0	38.5	47.0	347.0	47.1	0.0
? Single Helix Anchor ? EHS 3/8 (Down)	21.0	105.0	27.7	39.7	347.0	39.8	330.0
? Single Helix Anchor ? EHS 3/8 (Down)	18.5	229.0	28.0	46.9	347.0	47.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)	15.7	105.0	21.1	24.2	347.0	24.4	330.0
? Single Helix Anchor ? EHS 1/4 (Down)			19.4	42.1	347.0	46.6	330.0
? Single Helix Anchor ? EHS 1/4 (Down)			19.4	38.9	347.0	43.1	330.0
? Single Helix Anchor ? EHS 1/4 (Down)	15.7	227.0	17.3	41.7	347.0	41.8	10.0
? Single Helix Anchor ? EHS 1/4 (Down)			19.4	70.8	347.0	78.2	10.0
? Single Helix Anchor ? EHS 1/4 (Down)			17.3	68.4	347.0	75.6	10.0
? Single Helix Anchor ? EHS 3/8 (Down)	21.9	105.0	33.4	48.0	347.0	48.1	330.0
				69.2	347.0	76.3	330.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 2.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	9,131	471.6	135,835	613.5	142.8	21,548	736	7	21,555	317.0
Comms	5,664	292.5	47,396	214.1	49.8	7,519	1,711	15	7,534	110.8
GuyBraces	-13,117	-677.4	-163,661	-739.2	-172.0	-25,962	61,341	546	-25,416	-373.8
Pole	212	11.0	1,867	8.4	2.0	296	2,308	21	317	4.7
Crossarms	17	0.9	302	1.4	0.3	48	190	2	50	0.7
Risers	14	0.7	122	0.6	0.1	19	53	0	20	0.3
Insulators	16	0.8	279	1.3	0.3	44	133	1	45	0.7
Pole Load	1,936	100.0	22,140	100.0	23.3	3,512	66,471	592	4,104	60.4
Pole Reserve Capacity			73,004		76.7	3,288			2,696	39.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 2.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	465	24.0	9,574	43.2	10.1	1,519	46,760	416	1,935	28.5
Unknown, COMMUNICATION	1,242	64.2	10,397	47.0	10.9	1,649	17,213	153	1,803	26.5
Pole	212	11.0	1,867	8.4	2.0	296	2,308	21	317	4.7
<Undefined>	17	0.9	302	1.4	0.3	48	190	2	50	0.7
Totals:	1,936	100.0	22,140	100.0	23.3	3,512	66,471	592	4,104	60.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.97	18.17	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	44,389	12	1,069	45,470
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.97	48.53	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	44,389	-7	1,069	45,451
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.97	48.53	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	44,389	16	1,069	45,474
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.29	18.45	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	10,608	4	1,572	12,184
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.29	48.64	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	10,608	21	1,572	12,202
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.29	48.64	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	10,608	-18	1,572	12,162
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.13	6.76	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	9,011	7	1,335	10,353
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.94	6.77	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	32,966	23	794	33,783
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.61	6.79	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	8,851	7	1,312	10,170
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.13	6.81	0.3980	1.42	0.145	200.0	283.9	200.0	1,228	8,701	7	1,290	9,998
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.95	6.83	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	31,840	23	767	32,630
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.08	6.88	0.3980	1.11	0.145	172.4	47.2	172.4	1,228	30,853	23	743	31,620
										Totals:	287,212	120	14,165	301,496	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	21.59	7.20	1.3300	3.11	0.337	200.0	283.9	200.1	925	5,031	18	2,017	7,067
CATV	CATV 1.0	Unknown, COMMUNICATION	21.10	7.23	1.3300	2.55	0.337	172.4	47.2	172.4	925	18,103	58	1,180	19,341
Telco	TELE 1.5	Unknown, COMMUNICATION	20.57	7.26	1.5000	1.23	0.900	83.6	134.1	83.6	2,000	-35,352	-62	409	-35,005
Telco	TELE 1.5	Unknown, COMMUNICATION	20.57	7.26	1.5000	3.71	0.900	200.0	283.9	200.1	2,000	10,364	-149	2,100	12,315
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.33	1.5000	3.02	0.900	172.4	47.2	172.4	2,000	35,975	138	1,185	37,298
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.33	1.5000	3.71	0.900	200.0	283.9	200.1	2,000	9,768	160	1,980	11,908
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.40	7.39	0.6570	3.01	0.190	200.0	283.9	200.0	750	3,476	11	1,087	4,573
Telco	TELE 1.5	Unknown, COMMUNICATION	17.98	7.42	1.5000	3.02	0.900	172.4	47.2	172.4	2,000	33,359	104	1,099	34,562
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.26	7.46	0.6570	2.48	0.190	172.4	47.2	172.4	750	12,011	2	610	12,624
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.26	7.46	0.6570	1.03	0.190	83.6	134.1	83.6	750	-11,126	1	199	-10,926
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.61	7.56	0.6570	2.48	0.190	172.4	47.2	172.4	750	10,857	35	552	11,444
Totals:											92,467	316	12,417	105,200	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	38.97	5.42	47.2	47.2	50.00	4.50	3.50	96.00	31	493	524
Normal	Crossarm	34.29	5.70	283.9	283.9	50.00	4.50	3.50	96.00	9	138	146
Totals:										39	631	670

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	KU, UTILITY	27.66	6.09	360.0	360.0	27.66	331.88	4.00	4.00	331.88	14	257	271
Totals:										14	257	271	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.97	0.00	47.2	0.0	3.00	3.80	12.75	6	88	95
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.97	45.00	130.4	0.0	3.00	3.80	12.75	-9	88	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.97	-45.00	324.1	0.0	3.00	3.80	12.75	21	88	109
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.29	0.00	283.9	0.0	3.00	3.80	12.75	2	78	79
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.29	45.00	6.7	0.0	3.00	3.80	12.75	23	78	100
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.29	-45.00	201.1	0.0	3.00	3.80	12.75	-19	78	58
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.13	0.00	283.9	283.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.94	0.00	47.2	47.2	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.61	0.00	283.9	283.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.13	0.00	283.9	283.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.95	0.00	47.2	47.2	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.08	0.00	47.2	47.2	2.00	3.00	3.19	2	12	14
Bolt	Single Bolt	Unknown, COMMUNICATION	21.59	0.00	283.9	373.9	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	21.10	0.00	47.2	137.2	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.57	0.00	209.0	209.0	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	19.39	0.00	345.6	345.6	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	18.40	0.00	283.9	373.9	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	17.98	0.00	47.2	137.2	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	17.26	0.00	90.7	90.7	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	15.61	0.00	47.2	137.2	5.00	3.00	0.00	4	0	4
Totals:										45	574	619

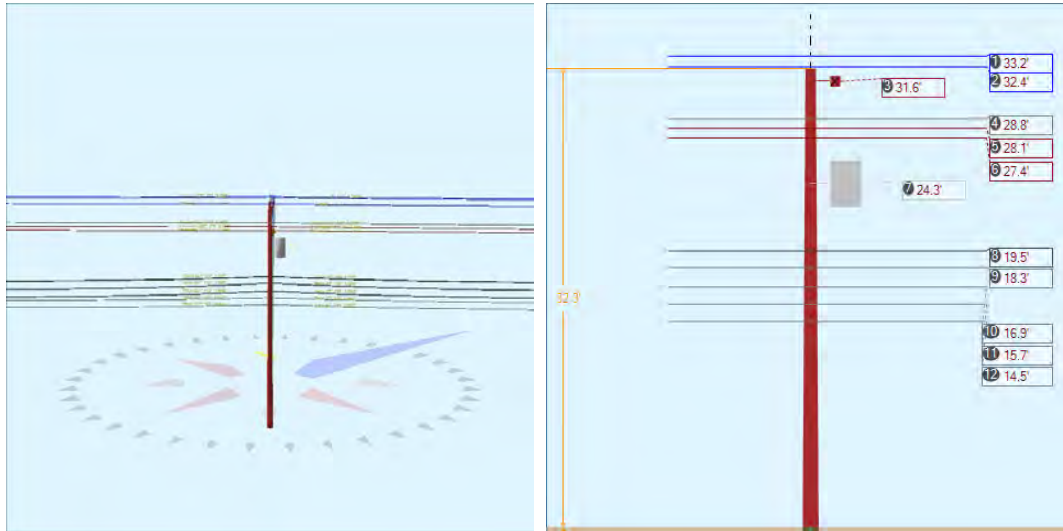
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	38.48	0.00	21.00	0.375	75.00	229.0	61.2	0.273	42.19	2.50
EHS 3/8	Down	KU, UTILITY	27.74	0.00	21.00	0.375	75.00	105.0	52.7	0.273	33.07	1.65
EHS 3/8	Down	KU, UTILITY	27.95	0.00	18.48	0.375	75.00	229.0	56.3	0.273	31.81	1.88
EHS 1/4	Down	Unknown, COMMUNICATION	21.10	0.00	15.65	0.25	75.00	105.0	53.3	0.121	24.54	0.88
EHS 1/4	Down	Unknown, COMMUNICATION	19.39	0.00	15.65	0.25	75.00	105.0	50.9	0.121	23.17	0.76
EHS 1/4	Down	Unknown, COMMUNICATION	19.39	0.00	15.65	0.25	75.00	227.0	50.9	0.121	23.17	1.39
EHS 1/4	Down	Unknown, COMMUNICATION	17.26	0.00	15.65	0.25	75.00	227.0	47.7	0.121	21.53	1.25
EHS 3/8	Down	KU, UTILITY	33.36	0.00	21.90	0.375	75.00	105.0	56.5	0.273	38.23	2.31

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,360	9,418	9,398	8,233	4,534	-3,135	-118,188
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,749	7,954	7,936	6,312	4,810	-1,022	-27,728
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,346	9,405	9,386	7,812	5,204	-3,598	-98,550
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,786	2,533	2,518	2,018	1,507	-320	-6,518
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,581	2,346	2,328	1,807	1,468	-312	-5,846
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,678	4,252	4,237	3,289	2,671	-1,912	-36,311
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,527	4,115	4,096	3,027	2,759	-1,976	-33,464
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,582	9,620	9,595	8,003	5,293	-1,125	-36,655
Totals:										40,501	28,244	-13,401	-363,260

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.00	229.0	20,000	1.00	20,000	9,418	9,398	47.1
Single Helix Anchor		18.00	21.00	105.0	20,000	1.00	20,000	7,954	7,936	39.8
Single Helix Anchor		18.00	18.48	229.0	20,000	1.00	20,000	9,405	9,386	47.0
Single Helix Anchor		18.00	15.65	105.0	20,000	1.00	20,000	4,878	4,845	24.4
Single Helix Anchor		18.00	15.65	227.0	20,000	1.00	20,000	8,364	8,329	41.8
Single Helix Anchor		18.00	21.90	105.0	20,000	1.00	20,000	9,620	9,595	48.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.17	34.33	10.77	41.17	7.32	11.96	1.60e+6	60.00	57.00	39.19	144,923	1448.17	2.18

Pole Num:	58W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.35	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021384 Deg	Longitude:	-84.457920 Deg	Elevation:	878.133070172119		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.1	0.0
Groundline	40.1	0.0
Vertical	13.9	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	31,266	319.7
Groundline	31,266	319.7
GL Allowable	79,274	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 319.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	498	34.2	14,988	47.9	18.9	1,284	598	6	1,290	19.0
Comms	730	50.2	11,863	37.9	15.0	1,016	1,341	13	1,030	15.1
PowerEquipments	42	2.9	1,222	3.9	1.5	105	694	7	112	1.6
Pole	175	12.0	2,915	9.3	3.7	250	1,758	18	267	3.9
Crossarms	1	0.1	41	0.1	0.1	4	95	1	4	0.1
Insulators	9	0.6	238	0.8	0.3	20	106	1	21	0.3
Pole Load	1,454	100.0	31,266	100.0	39.4	2,678	4,592	46	2,724	40.1
Pole Reserve Capacity			48,008		60.6	4,122			4,076	59.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 319.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	548	37.7	16,475	52.7	20.8	1,411	1,351	14	1,425	21.0
Unknown, COMMUNICATION	730	50.2	11,835	37.9	14.9	1,014	1,388	14	1,028	15.1
Pole	175	12.0	2,915	9.3	3.7	250	1,758	18	267	3.9
<Undefined>	1	0.1	41	0.1	0.1	4	95	1	4	0.1
Totals:	1,454	100.0	31,266	100.0	39.4	2,678	4,592	46	2,724	40.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.18	0.00	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	3,259	0	1,133	4,392
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.18	0.00	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-3,136	0	1,497	-1,638
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	3,184	-160	1,107	4,131
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-3,064	-211	1,463	-1,812
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	3,184	162	1,107	4,452
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.42	45.33	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-3,064	214	1,463	-1,387

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.76	6.38	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	2,824	-23	982	3,782
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.76	6.38	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-2,717	-30	1,297	-1,450
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.08	6.42	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	2,757	-23	958	3,692
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.08	6.42	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-2,653	-30	1,267	-1,416
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.40	6.46	0.3980	0.32	0.145	130.4	47.1	130.4	2,128	2,690	-23	935	3,602
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.40	6.46	0.3980	0.55	0.145	172.4	227.2	172.4	2,128	-2,589	-31	1,236	-1,383
Totals:											676	-156	14,444	14,965	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.47	6.94	1.3300	1.81	0.337	130.4	47.1	130.5	925	831	-59	1,354	2,125
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.47	6.94	1.3300	2.56	0.337	172.4	227.2	172.4	925	-799	-78	1,789	912
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.30	7.01	1.5000	2.11	0.900	130.4	47.1	130.5	2,000	1,688	-104	1,391	2,974
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.30	7.01	1.5000	3.03	0.900	172.4	227.2	172.4	2,000	-1,624	-138	1,838	76
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.91	7.10	1.5000	2.11	0.900	130.4	47.1	130.5	2,000	1,560	-106	1,285	2,740
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.91	7.10	1.5000	3.03	0.900	172.4	227.2	172.4	2,000	-1,502	-140	1,699	58
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.71	7.17	0.6570	1.79	0.190	130.4	47.1	130.4	750	543	-35	691	1,199
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.71	7.17	0.6570	2.53	0.190	172.4	227.2	172.4	750	-523	-46	913	344
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.50	7.24	0.6570	1.79	0.190	130.4	47.1	130.4	750	502	-35	637	1,104
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.50	7.24	0.6570	2.53	0.190	172.4	227.2	172.4	750	-483	-47	843	313
		COMMUNICATION													
Totals:											194	-789	12,440	11,845	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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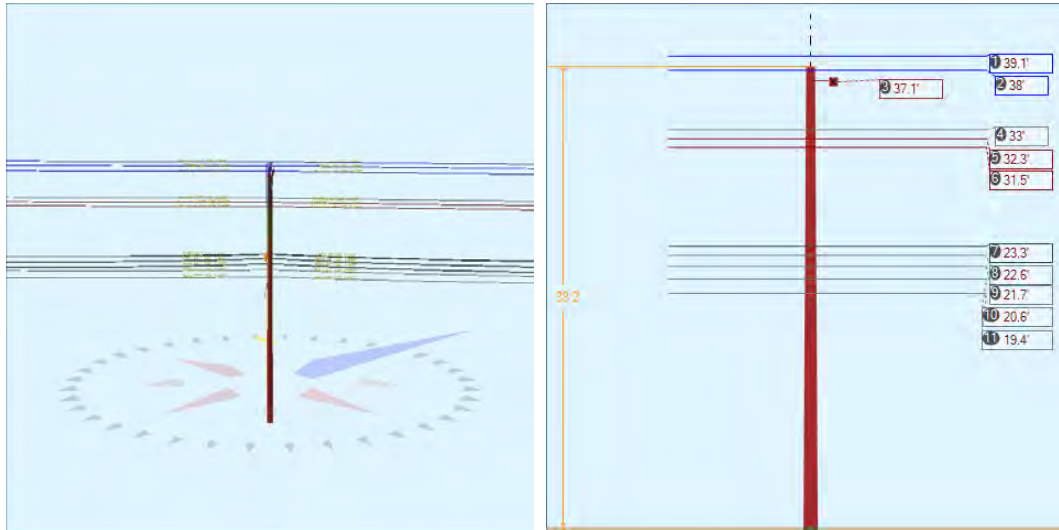
Transformer	1PH-25KVA	KU, UTILITY	24.31	21.15	40.0	40.0	365.00	39.00	--	22.00	--	207	1,013	1,220
Totals:												207	1,013	1,220

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		31.60	5.45	47.1	47.1	50.00	4.50	3.50	96.00	2	39	41	
Totals:											2	39	41

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	32.31	0.00	0.0	0.0	13.00	9.00	10.50	0	150	150	
Pin	Pin Insulator - 5 kV KU, UTILITY	31.79	45.00	130.2	0.0	6.00	3.50	7.50	-42	41	-2	
Pin	Pin Insulator - 5 kV KU, UTILITY	31.79	-45.00	324.0	0.0	6.00	3.50	7.50	43	41	84	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.76	0.00	137.2	227.2	2.00	3.00	3.19	-2	13	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.08	0.00	137.2	227.2	2.00	3.00	3.19	-2	13	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.40	0.00	137.2	227.2	2.00	3.00	3.19	-2	13	11	
Bolt	Three Bolt Unknown, COMMUNICATION	19.47	0.00	137.1	47.1	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.30	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt Unknown, COMMUNICATION	16.91	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt Unknown, COMMUNICATION	15.71	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt Unknown, COMMUNICATION	14.50	0.00	137.1	47.1	5.00	3.00	0.00	-6	0	-6	
Totals:										-34	271	237

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.25	33.29	10.43	15.58	7.32	11.26	1.60e+6	60.00	57.00	32.31	33,046	330.37	7.19

Pole Num:	59W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.22	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021621 Deg	Longitude:	-84.457584 Deg	Elevation:	878.517512736201		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.3	0.0
Groundline	56.3	0.0
Vertical	12.1	22.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,603	137.8
Groundline	51,603	137.8
GL Allowable	92,523	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 137.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	806	43.7	28,644	55.5	31.0	2,102	509	5	2,106	31.0
Comms	814	44.1	18,443	35.7	19.9	1,353	1,141	10	1,364	20.1
Pole	214	11.6	4,118	8.0	4.5	302	2,225	20	322	4.7
Crossarms	1	0.1	46	0.1	0.1	3	95	1	4	0.1
Insulators	9	0.5	353	0.7	0.4	26	106	1	27	0.4
Pole Load	1,843	100.0	51,603	100.0	55.8	3,787	4,076	37	3,824	56.2
Pole Reserve Capacity			40,920		44.2	3,013			2,976	43.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 137.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	814	44.2	28,969	56.1	31.3	2,126	568	5	2,131	31.3
Unknown, COMMUNICATION	814	44.1	18,471	35.8	20.0	1,355	1,188	11	1,366	20.1
Pole	214	11.6	4,118	8.0	4.5	302	2,225	20	322	4.7
<Undefined>	1	0.1	46	0.1	0.1	3	95	1	4	0.1
Totals:	1,843	100.0	51,603	100.0	55.8	3,787	4,076	37	3,824	56.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.13	0.00	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,541	0	1,314	2,855
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.13	0.00	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	1,075	0	1,327	2,402
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,495	158	1,275	2,928
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	1,043	160	1,287	2,490
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,495	-158	1,275	2,612
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.96	45.33	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	1,043	-160	1,287	2,171
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.00	6.47	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,300	23	1,108	2,430

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.00	6.47	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	907	23	1,119	2,048
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.26	6.51	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,270	23	1,083	2,376
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.26	6.51	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	886	23	1,094	2,003
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.55	6.56	0.3980	0.31	0.145	128.2	48.9	128.2	2,128	1,242	23	1,059	2,324
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.55	6.56	0.3980	0.31	0.145	129.4	227.1	129.4	2,128	867	23	1,069	1,959
Totals:											14,166	138	14,295	28,599	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.34	7.04	1.3300	1.77	0.337	128.2	48.9	128.2	925	400	59	1,597	2,055
CATV	CATV 1.0	Unknown, COMMUNICATION	23.34	7.04	1.3300	1.79	0.337	129.4	227.1	129.5	925	279	60	1,613	1,951
Telco	TELE 1.5	Unknown, COMMUNICATION	22.58	7.09	1.5000	2.07	0.900	128.2	48.9	128.2	2,000	836	104	1,688	2,627
Telco	TELE 1.5	Unknown, COMMUNICATION	22.58	7.09	1.5000	2.09	0.900	129.4	227.1	129.5	2,000	583	105	1,705	2,392
Telco	TELE 1.5	Unknown, COMMUNICATION	21.66	7.14	1.5000	2.07	0.900	128.2	48.9	128.2	2,000	801	105	1,619	2,525
Telco	TELE 1.5	Unknown, COMMUNICATION	21.66	7.14	1.5000	2.09	0.900	129.4	227.1	129.5	2,000	559	106	1,635	2,300
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.62	7.20	0.6570	1.76	0.190	128.2	48.9	128.2	750	286	35	892	1,212
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.62	7.20	0.6570	1.78	0.190	129.4	227.1	129.4	750	200	35	901	1,135
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.42	7.27	0.6570	1.76	0.190	128.2	48.9	128.2	750	269	35	840	1,144
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.42	7.27	0.6570	1.78	0.190	129.4	227.1	129.4	750	188	35	848	1,071
Totals:											4,401	677	13,335	18,414	

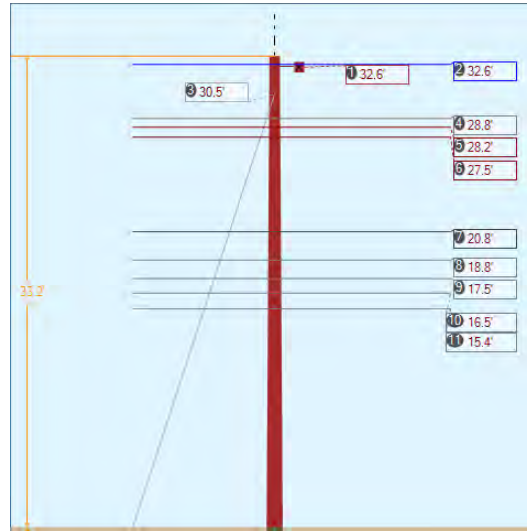
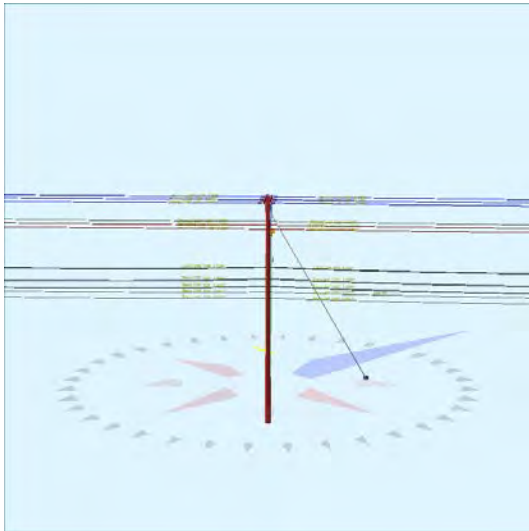
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	37.15	5.48	48.0	48.0	50.00	4.50	3.50	96.00	0	46	46
Totals:										0	46	46

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.25	0.00	0.0	0.0	13.00	9.00	10.50	0	178	178
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.33	45.00	131.1	0.0	6.00	3.50	7.50	43	48	91
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.33	-45.00	324.9	0.0	6.00	3.50	7.50	-43	48	5
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.00	0.00	138.0	48.0	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.26	0.00	138.0	48.0	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.55	0.00	138.0	48.0	2.00	3.00	3.19	2	15	17
Bolt	Three Bolt	Unknown, COMMUNICATION	23.34	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.58	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.66	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.62	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.42	0.00	138.0	48.0	5.00	3.00	0.00	6	0	6
Totals:										35	318	353

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.18	33.32	10.97	15.58	7.32	11.85	1.60e+6	60.00	57.00	38.25	33,728	336.88	8.26

Pole Num:	60W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.81	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.69	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021866 Deg	Longitude:	-84.457271 Deg	Elevation:	879.782803220846		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	36.7	0.0
Groundline	36.7	0.0
Vertical	1.3	19.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,536	318.6
Groundline	29,536	318.6
GL Allowable	81,576	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.0	30.0		0.0	318.6	2.1	170.0
? EHS 3/8 (Down)			30.5	0.0	318.6	3.3	170.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	449	35.2	13,744	46.5	16.9	1,148	492	5	1,153	17.0
Comms	620	48.6	11,869	40.2	14.6	992	1,102	11	1,002	14.7
GuyBraces	8	0.7	257	0.9	0.3	22	11	0	22	0.3
Pole	181	14.2	3,053	10.3	3.7	255	1,829	18	273	4.0
Crossarms	3	0.2	80	0.3	0.1	7	190	2	9	0.1
Insulators	16	1.2	533	1.8	0.7	45	93	1	45	0.7
Pole Load	1,277	100.0	29,536	100.0	36.2	2,468	3,716	37	2,504	36.8
Pole Reserve Capacity			52,040		63.8	4,332			4,296	63.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	473	37.1	14,506	49.1	17.8	1,212	548	5	1,217	17.9
Unknown, COMMUNICATION	620	48.6	11,897	40.3	14.6	994	1,149	11	1,005	14.8
Pole	181	14.2	3,053	10.3	3.7	255	1,829	18	273	4.0
<Undefined>	3	0.2	80	0.3	0.1	7	190	2	9	0.1
Totals:	1,277	100.0	29,536	100.0	36.2	2,468	3,716	37	2,504	36.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	18.20	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-181	0	1,031	850
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-181	-11	1,031	838
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-181	11	1,031	861
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	496	12	1,095	1,603
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	18.20	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	496	0	1,095	1,591
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.61	48.54	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	496	-12	1,095	1,579

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.81	6.43	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-160	21	911	772
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.81	6.43	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	438	23	967	1,428
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.17	6.47	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-156	21	891	756
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.17	6.47	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	428	23	946	1,397
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.49	6.51	0.3980	0.27	0.145	120.7	48.7	120.7	2,128	-153	22	869	738
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.49	6.51	0.3980	0.31	0.145	128.2	228.9	128.2	2,128	418	23	923	1,364
Totals:											1,760	132	11,883	13,775	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.82	6.91	1.3300	1.65	0.337	120.7	48.7	120.7	925	-50	55	1,341	1,346
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.82	6.91	1.3300	1.77	0.337	128.2	228.9	128.2	925	138	58	1,424	1,620
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.82	7.04	1.5000	1.92	0.900	120.7	48.7	120.7	2,000	-98	97	1,325	1,324
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.82	7.04	1.5000	2.07	0.900	128.2	228.9	128.2	2,000	269	103	1,407	1,779
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.53	7.11	1.5000	1.92	0.900	120.7	48.7	120.7	2,000	-91	98	1,234	1,241
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.53	7.11	1.5000	2.07	0.900	128.2	228.9	128.2	2,000	251	104	1,311	1,665
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.49	7.18	0.6570	1.63	0.190	120.7	48.7	120.7	750	-32	32	672	672
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.49	7.18	0.6570	1.76	0.190	128.2	228.9	128.2	750	88	34	713	836
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.40	7.24	0.6570	1.63	0.190	120.7	48.7	120.7	750	-30	33	627	630
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.40	7.24	0.6570	1.76	0.190	128.2	228.9	128.2	750	83	35	666	783
		COMMUNICATION													
Totals:											526	649	10,720	11,896	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	32.61	5.45	48.7	48.7	50.00	4.50	3.50	96.00	0	80	80
Totals:										0	80	80

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.61	0.00	48.7	0.0	3.00	3.80	12.75	0	77	77
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.61	45.00	131.8	0.0	3.00	3.80	12.75	-21	77	55
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.61	-45.00	325.6	0.0	3.00	3.80	12.75	21	77	98
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.61	-45.00	311.8	180.0	3.00	3.80	12.75	21	77	98
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.61	0.00	228.7	180.0	3.00	3.80	12.75	0	77	77
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.61	45.00	145.6	180.0	3.00	3.80	12.75	-21	77	55
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.81	0.00	318.8	228.8	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.17	0.00	318.8	228.8	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.49	0.00	318.8	228.8	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	20.82	0.00	318.8	228.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.82	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.53	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.49	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.40	0.00	318.8	228.8	5.00	3.00	0.00	6	0	6
Totals:										34	500	534

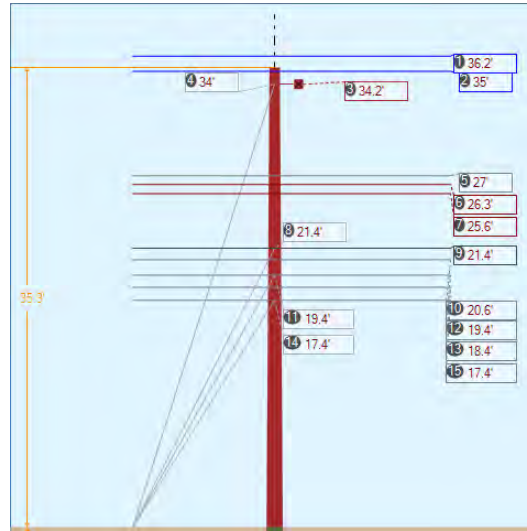
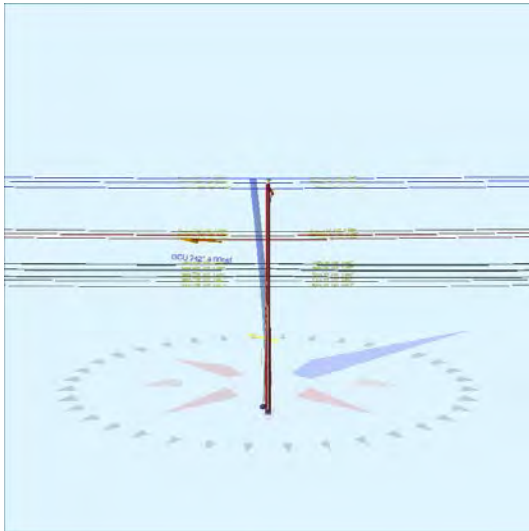
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	30.52	0.00	18.00	0.375	75.00	30.0	59.3	0.273	33.78	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	463	421	0	0	0	0	258
Totals:										0	0	0	258

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	18.00	30.0	20,000	1.00	20,000	421	0	2.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.87	33.19	10.56	8.33	7.32	11.37	1.60e+6	60.00	57.00	33.19	287,956	2858.77	76.92

Pole Num:	61W - 27220-260	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.68	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	39.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022075 Deg	Longitude:	-84.456941 Deg	Elevation:	880.32528568935		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	11.1	0.0
Groundline	11.1	0.0
Vertical	6.5	26.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,028	245.3
Groundline	10,028	245.3
GL Allowable	106,627	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.2	134.9		19.4	242.0	22.0	310.0
? EHS 3/8 (Down)			34.0	28.0	242.0	34.9	310.0
? Single Helix Anchor	13.4	138.3		19.5	242.0	24.3	320.0
? EHS 1/4 (Down)			21.4	23.9	242.0	32.4	320.0
? EHS 1/4 (Down)			19.4	21.8	242.0	29.8	320.0
? EHS 1/4 (Down)			17.4	19.6	242.0	27.0	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 245.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	937	182.6	22,323	222.6	20.9	1,844	516	4	1,848	27.2
Comms	520	101.2	8,102	80.8	7.6	669	1,156	10	679	10.0
GuyBraces	-1,190	-231.8	-24,250	-241.8	-22.7	-2,003	10,172	84	-1,919	-28.2
Pole	210	40.8	2,910	29.0	2.7	240	2,317	19	260	3.8
Crossarms	28	5.5	718	7.2	0.7	59	95	1	60	0.9
Insulators	9	1.7	225	2.3	0.2	19	106	1	19	0.3
Pole Load	513	100.0	10,028	100.0	9.4	828	14,363	119	947	13.9
Pole Reserve Capacity			96,599		90.6	5,972			5,853	86.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 245.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	379	73.9	7,652	76.3	7.2	632	5,868	48	681	10.0
Unknown, COMMUNICATION	-104	-20.2	-1,252	-12.5	-1.2	-103	6,083	50	-53	-0.8
Pole	210	40.8	2,910	29.0	2.7	240	2,317	19	260	3.8
<Undefined>	28	5.5	718	7.2	0.7	59	95	1	60	0.9
Totals:	513	100.0	10,028	100.0	9.4	828	14,363	119	947	13.9

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.19	0.00	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-90,606	0	212	-90,395
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.19	0.00	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	95,976	0	75	96,051
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-87,670	-94	205	-87,560
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	92,866	-81	73	92,858
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-87,670	54	205	-87,412
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.02	45.37	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	92,866	46	73	92,985
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.01	7.00	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-67,582	10	158	-67,415
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.01	7.00	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	71,587	8	56	71,652
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.32	7.05	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-65,849	10	154	-65,686
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.32	7.05	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	69,752	8	55	69,815
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.63	7.09	0.3980	0.28	0.145	140.5	40.1	140.5	2,128	-64,127	10	150	-63,968
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.63	7.09	0.3980	0.20	0.145	120.7	228.7	120.7	2,128	67,928	8	53	67,989
											Totals:	27,470	-21	1,467	28,915

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, COMMUNICATION	21.44	7.36	1.3300	1.95	0.337	140.5	40.1	140.5	925	-23,318	24	255	-23,039
CATV	CATV 1.0	Unknown, COMMUNICATION	21.44	7.36	1.3300	1.63	0.337	120.7	228.7	120.7	925	24,700	21	91	24,812
Telco	TELE 1.5	Unknown, COMMUNICATION	20.55	7.41	1.5000	2.30	0.900	140.5	40.1	140.5	2,000	-48,337	43	267	-48,027
Telco	TELE 1.5	Unknown, COMMUNICATION	20.55	7.41	1.5000	1.91	0.900	120.7	228.7	120.7	2,000	51,202	37	95	51,333
Telco	TELE 1.5	Unknown, COMMUNICATION	19.37	7.49	1.5000	2.30	0.900	140.5	40.1	140.5	2,000	-45,540	43	252	-45,245

Telco	TELE 1.5	Unknown, COMMUNICATION	19.37	7.49	1.5000	1.91	0.900	120.7	228.7	120.7	2,000	48,239	37	90	48,366
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	7.55	0.6570	1.87	0.190	140.5	40.1	140.5	750	-16,266	14	139	-16,113
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	7.55	0.6570	1.56	0.190	120.7	228.7	120.7	750	17,230	12	49	17,291
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.44	7.61	0.6570	1.87	0.190	140.5	40.1	140.5	750	-15,378	14	131	-15,232
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.44	7.61	0.6570	1.56	0.190	120.7	228.7	120.7	750	16,289	12	47	16,348
Totals:												8,821	257	1,416	10,494

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		34.21	5.80	40.1	40.1	50.00	4.50	3.50	96.00	-42	971	929
Totals:										-42	971	929

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.32	0.00	0.0	0.0	13.00	9.00	10.50	0	164	164
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.40	45.00	122.7	0.0	6.00	3.50	7.50	-23	44	21
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.40	-45.00	317.4	0.0	6.00	3.50	7.50	13	44	57
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.01	0.00	314.4	224.4	2.00	3.00	3.19	1	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.32	0.00	314.4	224.4	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.63	0.00	314.4	224.4	2.00	3.00	3.19	1	12	13
Bolt	Three Bolt	Unknown, COMMUNICATION	21.44	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	20.55	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	19.37	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	18.44	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	17.44	0.00	314.4	224.4	5.00	3.00	0.00	2	0	2
Totals:										3	289	292

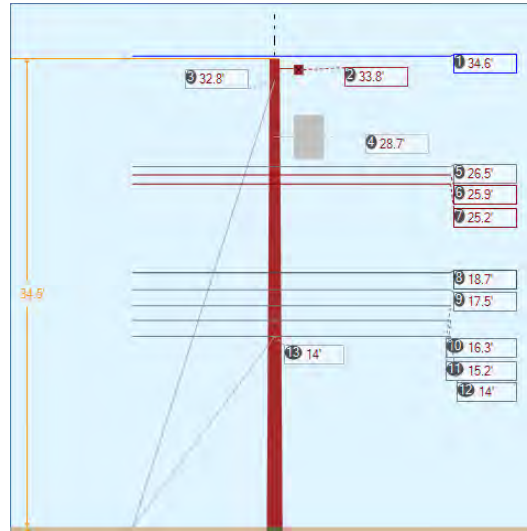
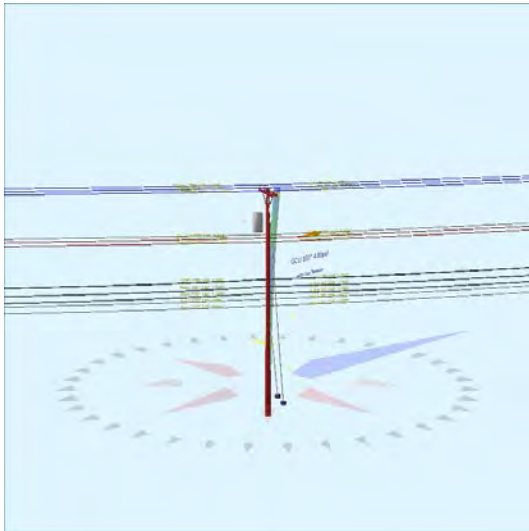
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	34.04	0.00	16.23	0.375	75.00	134.9	64.3	0.273	36.07	0.88
EHS 1/4	Down	Unknown, COMMUNICATION	21.44	0.00	13.44	0.25	75.00	138.3	57.7	0.121	23.59	0.48
EHS 1/4	Down	Unknown, COMMUNICATION	19.36	0.00	13.44	0.25	75.00	138.3	55.0	0.121	21.84	0.40
EHS 1/4	Down	Unknown, COMMUNICATION	17.44	0.00	13.44	0.25	75.00	138.3	52.2	0.121	20.26	0.34

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,833	4,393	3,886	3,500	1,687	-590	-19,285
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,938	1,762	1,431	1,209	765	-224	-4,569
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,784	1,622	1,305	1,070	748	-219	-4,050
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,617	1,470	1,171	925	718	-210	-3,508
Totals:										6,704	3,918	-1,244	-31,411

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	16.23	134.9	20,000	1.00	20,000	4,393	3,886	22.0
Single Helix Anchor			18.00	13.44	138.3	20,000	1.00	20,000	4,850	3,904	24.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.99	33.97	11.31	18.19	7.96	12.43	1.60e+6	60.00	57.00	35.32	221,348	2209.64	15.38

Pole Num:	62W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.54	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.17	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022360 Deg	Longitude:	-84.456619 Deg	Elevation:	880.750044357654		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.2	353.4
Groundline	24.2	353.4
Vertical	14.6	302.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,932	353.4
Groundline	17,932	353.4
GL Allowable	84,936	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	11.3	122.0		40.2	353.4	42.5	300.0
? EHS 3/8 (Down)			32.8	58.1	353.4	67.4	300.0
? Single Helix Anchor	7.4	122.0		21.3	353.4	23.1	300.0
? EHS 1/4 (Down)			14.0	71.3	353.4	84.8	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 341.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,732	240.2	50,399	281.1	59.3	6,631	514	5	6,635	97.6
Comms	1,597	140.4	16,496	92.0	19.4	2,170	1,152	11	2,181	32.1
GuyBraces	-3,464	-304.5	-52,286	-291.6	-61.6	-6,879	17,184	165	-6,714	-98.7
PowerEquipments	41	3.6	387	2.2	0.5	51	694	7	58	0.8
Pole	185	16.3	1,973	11.0	2.3	260	1,932	19	278	4.1
Crossarms	37	3.3	769	4.3	0.9	101	190	2	103	1.5
Insulators	9	0.8	194	1.1	0.2	26	127	1	27	0.4
Pole Load	1,137	100.0	17,932	100.0	21.1	2,359	21,793	209	2,568	37.8
Pole Reserve Capacity			67,004		78.9	4,441			4,232	62.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 341.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-682	-60.0	-1,320	-7.4	-1.6	-174	18,472	177	4	0.1
Unknown, COMMUNICATION	1,597	140.4	16,510	92.1	19.4	2,172	1,200	12	2,184	32.1
Pole	185	16.3	1,973	11.0	2.3	260	1,932	19	278	4.1
<Undefined>	37	3.3	769	4.3	0.9	101	190	2	103	1.5
Totals:	1,137	100.0	17,932	100.0	21.1	2,359	21,793	209	2,568	37.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	0.00	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	63,914	0	476	64,390
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	0.00	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-49,403	0	796	-48,607
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	63,914	-110	476	64,280
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-49,403	-129	796	-48,736
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	63,914	110	476	64,500

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.64	45.00	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-49,403	129	796	-48,477
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.51	6.64	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	48,880	18	364	49,261
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.51	6.64	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-37,782	21	609	-37,152
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.68	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	47,761	18	355	48,134
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.68	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-36,917	21	595	-36,302
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.23	6.72	0.3980	0.21	0.145	119.7	29.3	119.7	2,128	46,526	18	346	46,890
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.23	6.72	0.3980	0.30	0.145	140.5	220.1	140.5	2,128	-35,962	21	580	-35,362
											Totals:	76,039	115	6,664	82,818

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.72	7.12	1.3300	1.61	0.337	119.7	29.3	119.7	925	15,004	45	523	15,573
CATV	CATV 1.0	Unknown, COMMUNICATION	18.72	7.12	1.3300	1.96	0.337	140.5	220.1	140.5	925	-11,598	53	876	-10,669
Telco	TELE 1.5	Unknown, COMMUNICATION	17.47	7.19	1.5000	1.89	0.900	119.7	29.3	119.7	2,000	30,280	79	534	30,893
Telco	TELE 1.5	Unknown, COMMUNICATION	17.47	7.19	1.5000	2.31	0.900	140.5	220.1	140.5	2,000	-23,405	93	894	-22,418
Telco	TELE 1.5	Unknown, COMMUNICATION	16.29	7.27	1.5000	1.89	0.900	119.7	29.3	119.7	2,000	28,227	80	498	28,805
Telco	TELE 1.5	Unknown, COMMUNICATION	16.29	7.27	1.5000	2.31	0.900	140.5	220.1	140.5	2,000	-21,819	94	833	-20,891
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.22	7.33	0.6570	1.56	0.190	119.7	29.3	119.7	750	9,888	26	269	10,184
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.22	7.33	0.6570	1.90	0.190	140.5	220.1	140.5	750	-7,643	31	450	-7,162
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	14.03	7.40	0.6570	1.56	0.190	119.7	29.3	119.7	750	9,121	27	248	9,396
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	14.03	7.40	0.6570	1.90	0.190	140.5	220.1	140.5	750	-7,050	31	415	-6,603
											Totals:	21,006	559	5,541	27,107

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-25KVA	KU, UTILITY	28.72	21.01	225.0	225.0	365.00	39.00	--	22.00	--	-534	1,171	636
Totals:												-534	1,171	636

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		33.83	5.45	29.3	29.3	50.00	4.50	3.50	96.00	0	1,263	1,263	
Totals:												0	1,263	1,263

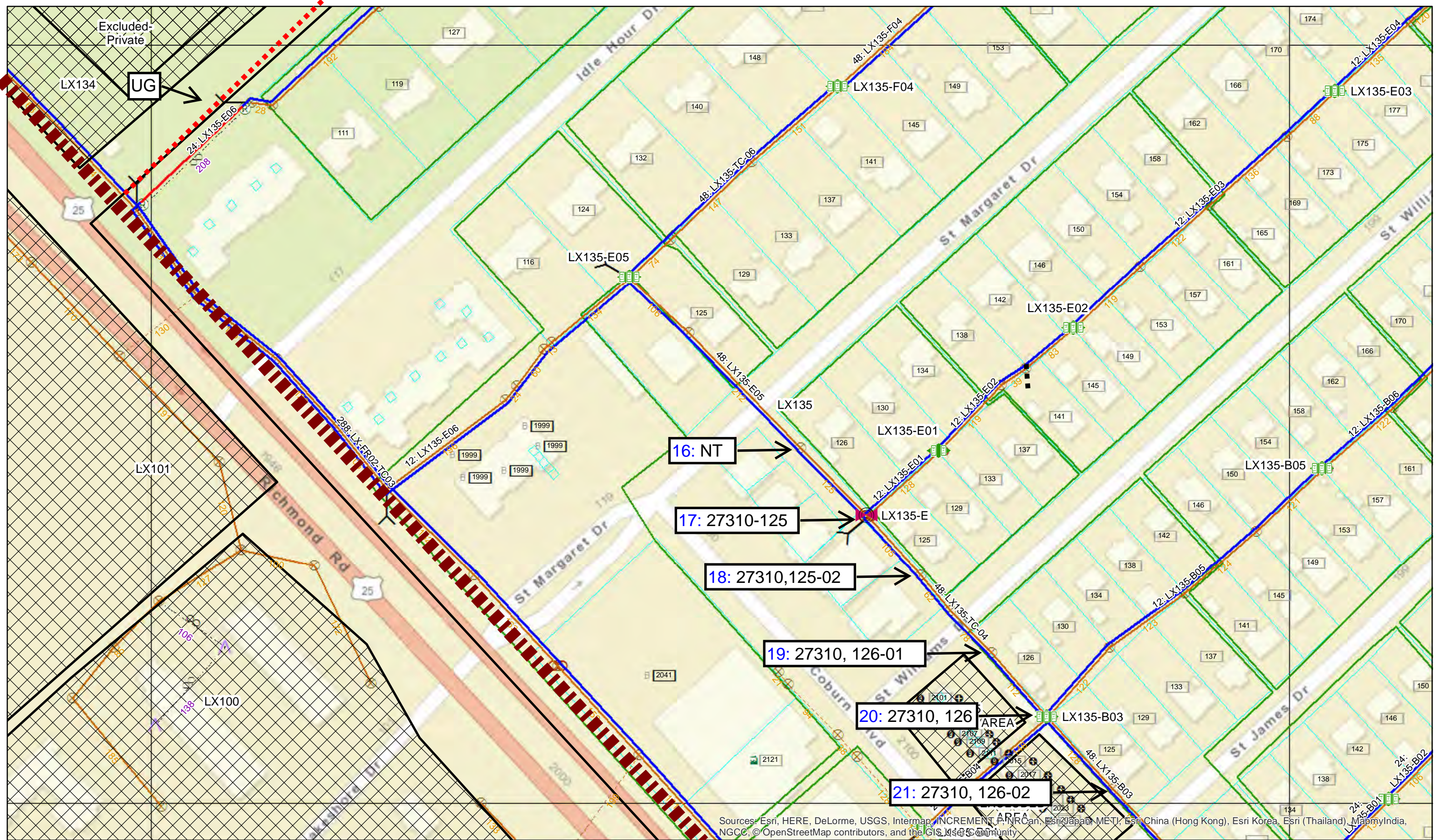
Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.02	0.00	29.3	0.0	6.00	3.50	7.50	0	85	85	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.02	45.00	112.4	0.0	6.00	3.50	7.50	-64	85	21	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.02	-45.00	306.2	0.0	6.00	3.50	7.50	64	85	149	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.51	0.00	304.7	214.7	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.90	0.00	304.7	214.7	2.00	3.00	3.19	2	12	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.23	0.00	304.7	214.7	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.72	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.47	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.29	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.22	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.03	0.00	304.7	214.7	5.00	3.00	0.00	5	0	5	
Totals:											28	291	319

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	32.84	0.00	11.34	0.375	75.00	122.0	70.7	0.273	33.14	1.68
EHS 1/4	Down	KU, UTILITY	14.03	0.00	7.42	0.25	75.00	122.0	61.9	0.121	14.18	0.86

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,341	8,492	8,048	7,596	2,661	-2,065	-65,162
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,076	4,614	4,268	3,765	2,010	-1,560	-20,756
Totals:										11,360	4,671	-3,625	-85,919

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	11.34	122.0	20,000	1.00	20,000	8,492	8,048	42.5
Single Helix Anchor		18.00	7.42	122.0	20,000	1.00	20,000	4,614	4,268	23.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.75	34.24	10.40	22.63	7.32	11.52	1.60e+6	60.00	57.00	34.46	149,578	1492.68	6.85



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAV/33
 PROJECT NUMBER:
 LXTNXY.00457.CB
 DATE: 12/12/2017
 USER NAME: argris
 DESIGN ENG

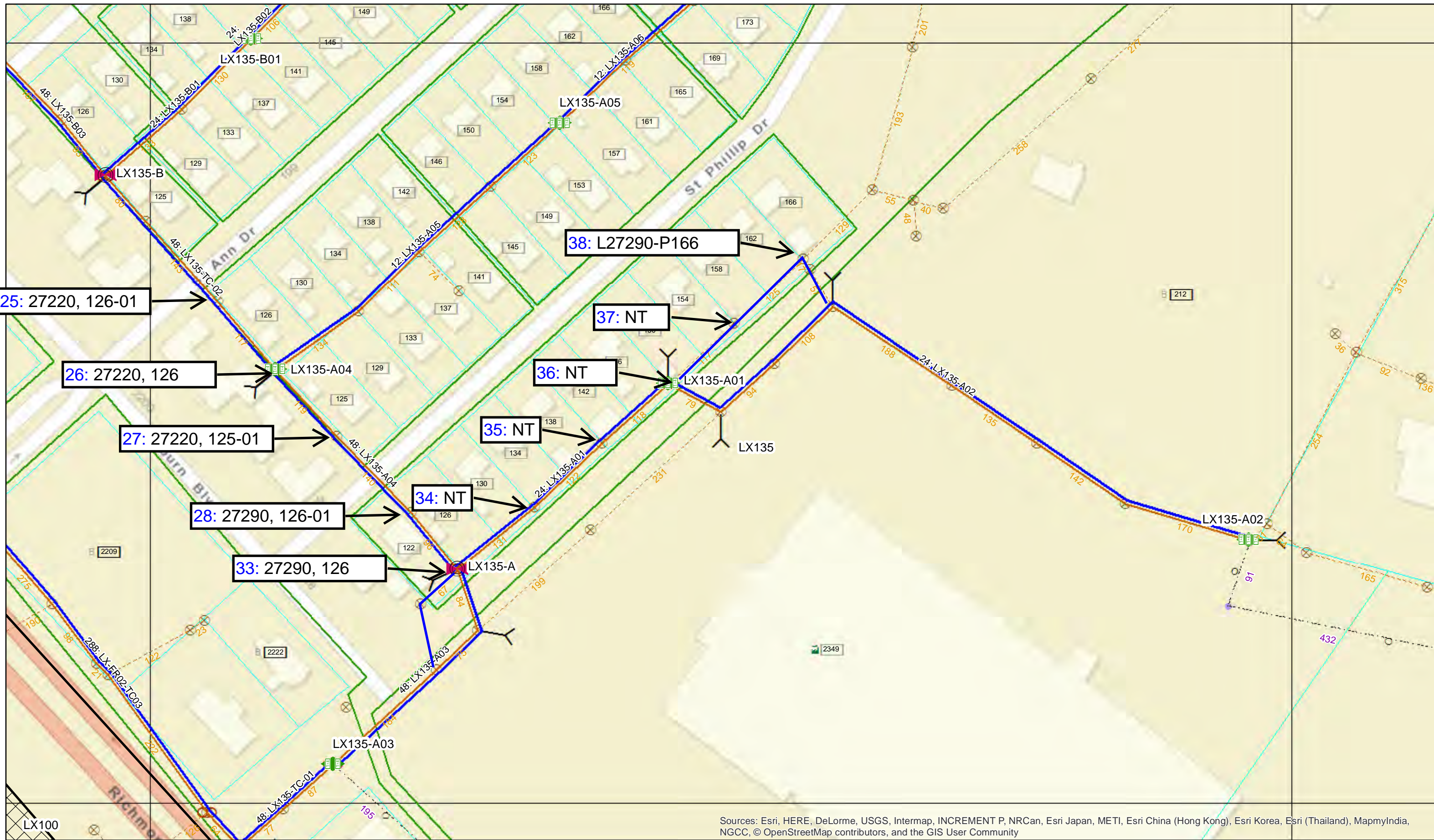
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAU34
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 LXTNXY.00437.CB

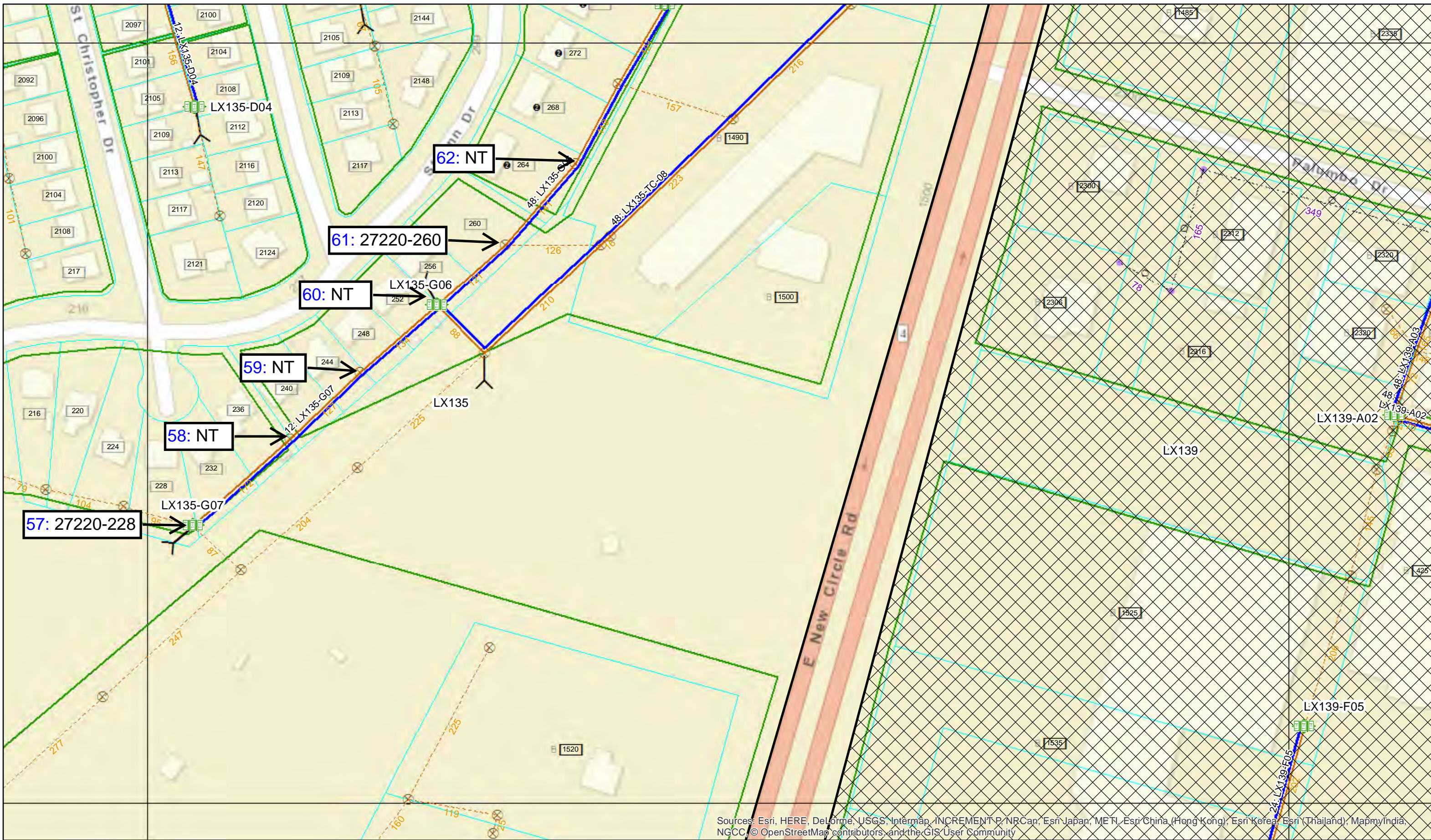
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

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LXAV/35
 PROJECT NUMBER:
 LXTNXY.00437.CB
 DATE 12/12/2017
 USER NAME: argjis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

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METRONET
 3701 Communications Way
 Evansville, In 47715



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 1:24 PM
To: Windstream Jointuse
Cc: Hays, Sarah K
Subject: FW: LX135-02W
Attachments: 135-02 Pole App Map.pdf; LX135-02W - METRONET POLE INVENTORY REPORT.pdf; LX135-02W - METRONET POLE INVENTORY REPORT.xlsx; O-Calcs.pdf; Pole Photos.pdf; Map Key.pdf

Please disregard this email.
Attachments are not correct.
Thanks!

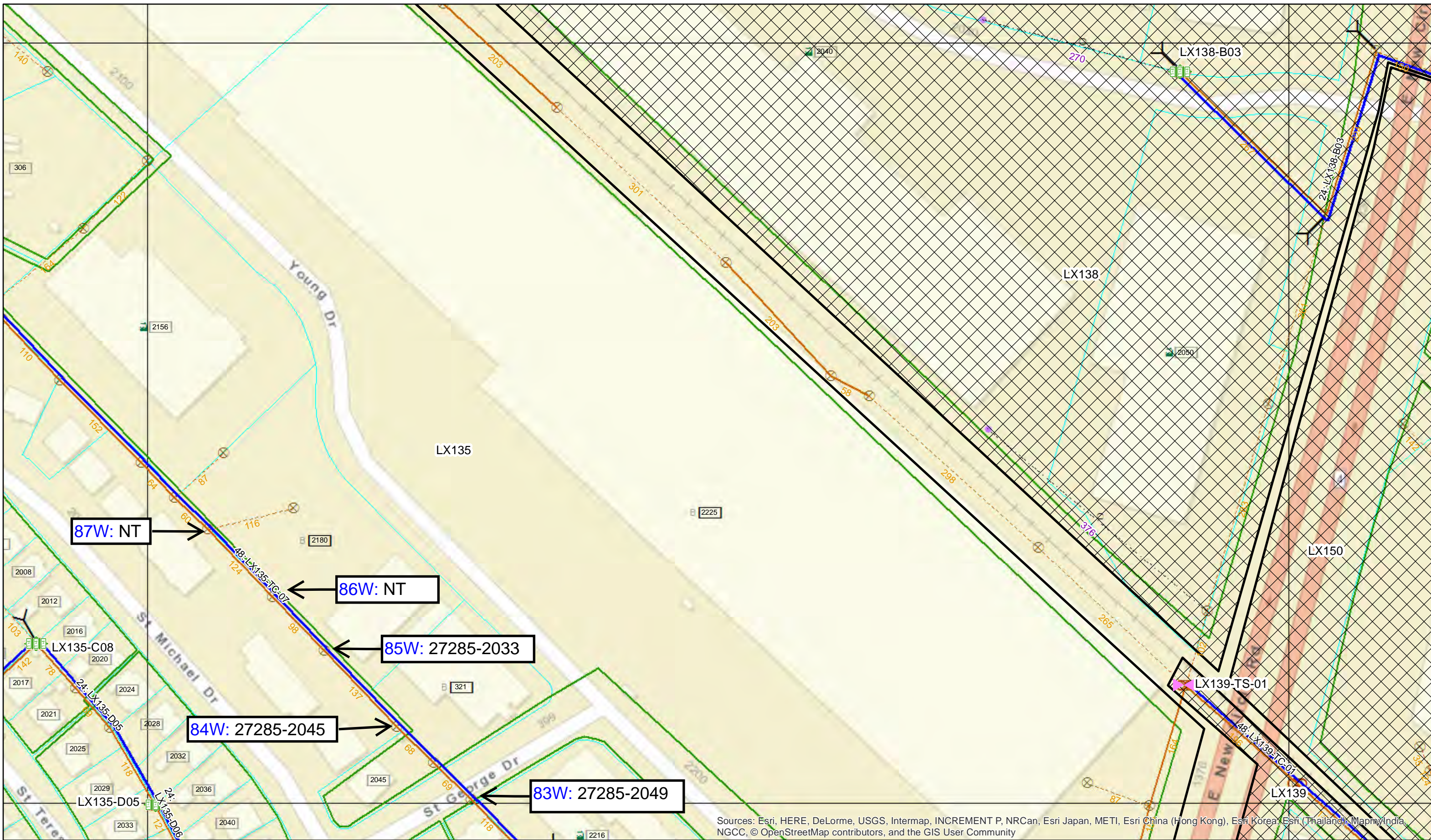
Lauren Sandefur
Permit Specialist

From: Lauren Sandefur
Sent: Sunday, March 18, 2018 12:13 PM
To: 'Windstream Jointuse' <Windstream.Jointuse@windstream.com>
Cc: 'Hays, Sarah K' <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX135-02W

Good Morning,
Please see attached for proposal titled LX135-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAX35
 PROJECT NUMBER:
 LXTNXY00437.CB
 DATE: 12/12/2017
 USER NAME: arqjls
 DESIGN ENG

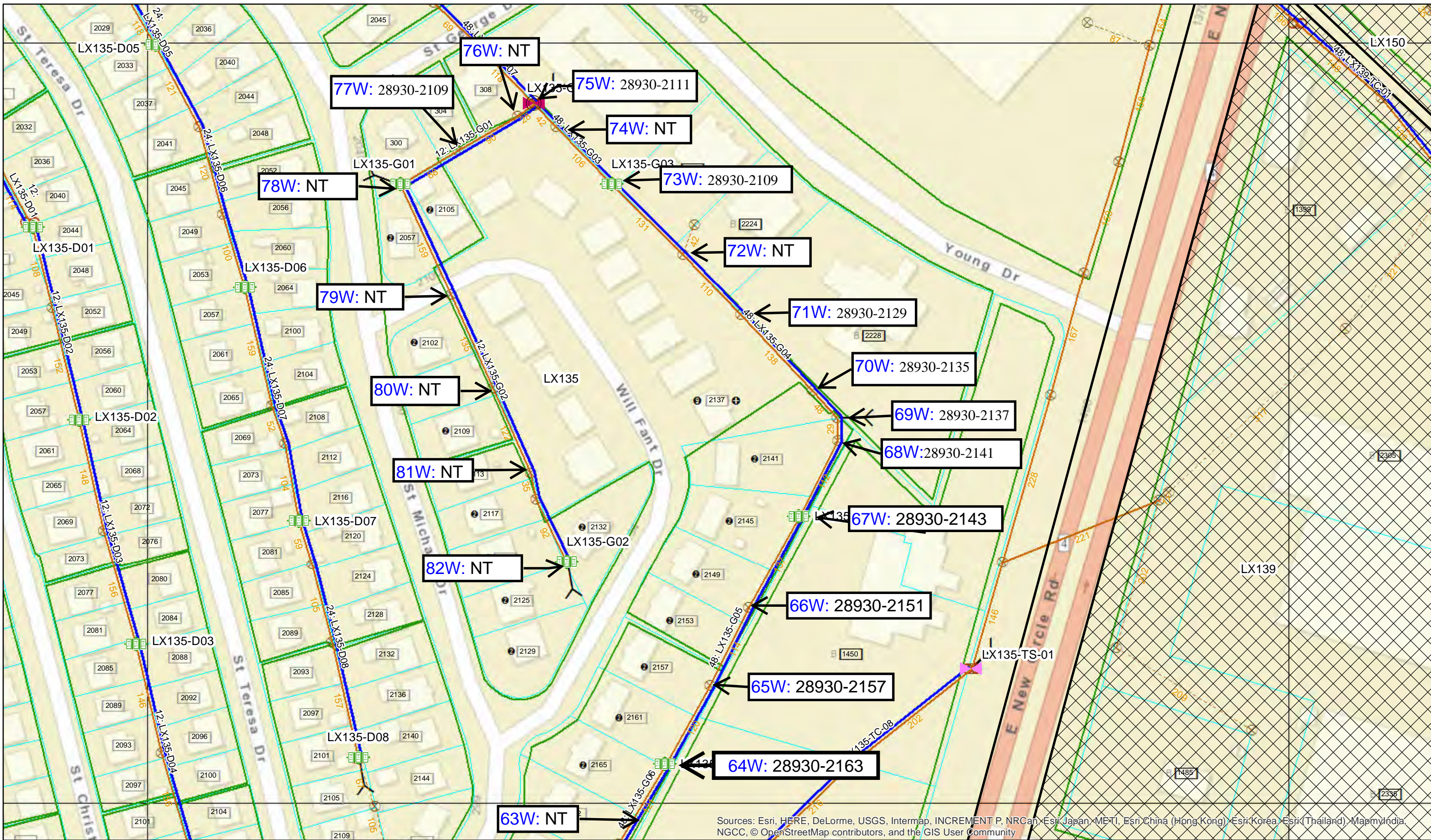
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAW35
 PROJECT NUMBER:
 LXTNXY.00457.CB
 DATE: 12/12/2017
 USER NAME: argjis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

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 Evansville, In 47715



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX135-02W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812-213-1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Lauren Sandefur 3.18.19

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	NT	63W	272 ST ANN DR, Lexington, KY 40502	40, 1, WXM	20'9"	19'11"	24'9"		(1)Fiber/Strand		
2	28930-2163	64W	2163 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	N/A	N/A	N/A		(1)Fiber/Strand		
3	28930-2157	65W	2157 WILL FANT DR, 1/2, Lexington, KY 40502	40, 4, WXM	19'9"	18'9"	26'5"		(1)Fiber/Strand		
4	28930-2151	66W	2151 WILL FANT DR, Lexington, KY 40502	40, 4, WXM	18'4"	18'0"	24'3"		(1)Fiber/Strand		
5	28930-2143	67W	2145 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	18'7"	17'10"	24'1"		(1)Fiber/Strand		
6	28930-2141	68W	2143 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	18'4"	N/A	25'6"		(1)Fiber/Strand		
7	28930-2137	69W	2141 WILL FANT DR, Lexington, KY 40502	40, 4, WXM	15'10"	N/A	23'8"		(1)Fiber/Strand		
8	28930-2135	70W	2137 WILL FANT DR, 4, Lexington, KY 40502	40, 3, WXM	15'8"	13'3"	22'9"		(1)Fiber/Strand		
9	28930-2129	71W	2133 WILL FANT DR, 4, Lexington, KY 40502	45, 3, WXM	22'1"	20'0"	25'2"		(1)Fiber/Strand		
10	28930-2119	72W	2121 WILL FANT DR, 2, Lexington, KY 40502	45, 3, WXM	21'10"	21'10"	23'0"		(1)Fiber/Strand		
11	28930-2115	73W	2117 WILL FANT DR, 3, Lexington, KY 40502	45, 3, WXM	19'1"	17'0"	26'10"		(1)Fiber/Strand		
12	NT	74W	2216 YOUNG DR, 6, Lexington, KY 40502	45, 3, WXM	16'8"	N/A	23'10"		(1)Fiber/Strand		
13	28930-2111	75W	2216 YOUNG DR, 7, Lexington, KY 40502	45, 2, WXM	19'11"	19'11"	24'8"		(1)Fiber/Strand		
14	NT	76W	308 ST GEORGE DR, Lexington, KY 40502	40, 4, WXM	19'1"	19'1"	25'0"		(1)Fiber/Strand		
15	28930-2109	77W	304 ST GEORGE DR, Lexington, KY 40502	40, 3, WXM	18'11"	18'11"	23'11"		(1)Fiber/Strand		
16	NT	78W	2057 ST MICHAEL DR, Lexington, KY 40502	40, 3, WXM	18'5"	19'1"	25'10"		(1)Fiber/Strand		
17	NT	79W	2102 WILL FANT DR, Lexington, KY 40502	40, 3, WXM	19'8"	20'11"	21'5"		(1)Fiber/Strand		
18	NT	80W	2105 ST MICHAEL DR, B, Lexington, KY 40502	40, 3, WXM	17'10"	17'10"	21'11"		(1)Fiber/Strand		
19	NT	81W	2128 WILL FANT DR, 6, Lexington, KY 40502	40, 3, WXM	18'3"	18'3"	22'8"		(1)Fiber/Strand		

20	NT	82W	2134 WILL FANT DR, Lexington, KY 40502	40, 3, WXM	18'3"	18'3"	21'7"		(1)Fiber/Strand			
21	27285-2049	83W	308 ST GEORGE DR, Lexington, KY 40502	45, 3, WXM	20'11"	N/A	25'2"		(1)Fiber/Strand			
22	27285-2045	84W	2041 ST MICHAEL DR, 6, Lexington, KY 40	45, 3, WXM	18'8"	18'8"	23'10"		(1)Fiber/Strand			
23	27285-2033	85W	2029 ST MICHAEL DR, 13, Lexington, KY 4	45, 3, WXM	18'1"	N/A	21'1"		(1)Fiber/Strand			
24	NT	86W	2029 ST MICHAEL DR, 10, Lexington, KY 4	45, 3, WXM	17'7"	N/A	25'9"		(1)Fiber/Strand			
25	NT	87W	2021 ST MICHAEL DR, 5, Lexington, KY 40	40, 3, WXM	16'0"	N/A	23'1"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

LX135-02W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		63W	NT	40/ 1	WS	2=Comms
KU	0	63W	NT		WS	
Windstream	25	63W	NT		WS	
Total Pole Count	25	63W	NT		WS	
Total Needing Make Ready	10	63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		64W	28930-2163	40/ 3	WS	1=None
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		65W	28930-2157	40/ 4	WS	1=None
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		66W	28930-2151	40/ 4	WS	1=None
		66W	28930-2151		WS	
		66W	28930-2151		WS	

66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
66W	28930-2151		WS	
67W	28930-2143	40/ 3	WS	1=None
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
67W	28930-2143		WS	
68W	28930-2141	40/ 3	WS	1=None
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
68W	28930-2141		WS	
69W	28930-2137	40/ 4	WS	1=None
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	
69W	28930-2137		WS	

	70W	28930-2135	40/ 3	WS	1=None
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	70W	28930-2135		WS	
	71W	28930-2129	45/ 3	WS	1=None
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	71W	28930-2129		WS	
	72W	28930-2119	45/ 3	WS	4=Comms & Ele
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	
	72W	28930-2119		WS	

72W	28930-2119		WS	
73W	28930-2115	45/ 3	WS	1=None
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
74W	NT	45/ 3	WS	1=None
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
75W	28930-2111	45/ 2	WS	2=Comms
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
76W	NT	40/ 4	WS	1=None
76W	NT		WS	

76W	NT		WS
76W	NT		WS
76W	NT		WS
76W	NT		WS
76W	NT		WS
77W	28930-2109	40/ 3	WS 2=Comms
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
78W	NT	40/ 3	WS 1=None
78W	NT		WS
78W	NT		WS
78W	NT		WS
78W	NT		WS
78W	NT		WS
79W	NT	40/ 3	WS 2=Comms
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
80W	NT	40/ 3	WS 3=Elec
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
81W	NT	40/ 3	WS 3=Elec
81W	NT		WS
81W	NT		WS
81W	NT		WS
81W	NT		WS

81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
82W	NT	40/ 3	WS	4=Comms & Ele
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
83W	27285-2049	45/ 3	WS	1=None
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
84W	27285-2045	45/ 3	WS	2=Comms
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
85W	27285-2033	45/3	WS	3=Elec
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	

85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
86W	NT	45/ 3	WS	1=None
86W	NT		WS	
86W	NT		WS	
86W	NT		WS	
86W	NT		WS	
86W	NT		WS	
86W	NT		WS	
86W	NT		WS	
86W	NT		WS	
87W	NT	40/ 3	WS	1=None
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	
87W	NT		WS	

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
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	272 ST ANN DR	38.02265	-84.45641	KU		
		38.02265	-84.45641	KU		
		38.02265	-84.45641	KU		
		38.02265	-84.45641	KU		
		38.02265	-84.45641	Metronet		
Lower Charter		38.02265	-84.45641	Charter		
Lower Windstream		38.02265	-84.45641	Windstream		
Lower Windstream		38.02265	-84.45641	Windstream		
Lower Windstream		38.02265	-84.45641	Windstream		
Lower Windstream		38.02265	-84.45641	Windstream		
Transfer to new pole	2163 WILL FANT DR, 1	38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	Metronet		
Transfer to new pole		38.02294	-84.45623	Charter		
Transfer to new pole		38.02294	-84.45623	Windstream		
Transfer to new pole		38.02294	-84.45623	Windstream		
Transfer to new pole		38.02294	-84.45623	Windstream		
Transfer to new pole		38.02294	-84.45623	Windstream		
	2157 WILL FANT DR, 1	38.02325	-84.45602	KU		
		38.02325	-84.45602	KU		
		38.02325	-84.45602	KU		
		38.02325	-84.45602	KU		
		38.02325	-84.45602	Metronet		
		38.02325	-84.45602	Charter		
		38.02325	-84.45602	Windstream		
		38.02325	-84.45602	Windstream		
		38.02325	-84.45602	Windstream		
		38.02325	-84.45602	Windstream		
	2151 WILL FANT DR	38.02352	-84.45586	KU		
		38.02352	-84.45586	KU		
		38.02352	-84.45586	KU		

	38.02352	-84.45586	KU
	38.02352	-84.45586	KU
	38.02352	-84.45586	KU
	38.02352	-84.45586	Metronet
	38.02352	-84.45586	Charter
	38.02352	-84.45586	Charter
	38.02352	-84.45586	Windstream
	38.02352	-84.45586	Windstream
	38.02352	-84.45586	Windstream
	38.02352	-84.45586	Windstream
2145 WILL FANT DR, 1	38.02382	-84.45561	KU
	38.02382	-84.45561	KU
	38.02382	-84.45561	KU
	38.02382	-84.45561	KU
	38.02382	-84.45561	Metronet
	38.02382	-84.45561	Charter
	38.02382	-84.45561	Windstream
	38.02382	-84.45561	Windstream
	38.02382	-84.45561	Windstream
	38.02382	-84.45561	Windstream
32.30 2143 WILL FANT DR, 1	38.02413	-84.45541	KU
	38.02413	-84.45541	KU
	38.02413	-84.45541	KU
	38.02413	-84.45541	KU
	38.02413	-84.45541	KU
	38.02413	-84.45541	Metronet
	38.02413	-84.45541	Charter
	38.02413	-84.45541	Windstream
	38.02413	-84.45541	Windstream
	38.02413	-84.45541	Windstream
	38.02413	-84.45541	Windstream
2141 WILL FANT DR	38.02419	-84.45539	KU
	38.02419	-84.45539	KU
	38.02419	-84.45539	KU
	38.02419	-84.45539	KU
	38.02419	-84.45539	Metronet
	38.02419	-84.45539	Charter
	38.02419	-84.45539	Charter
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream
	38.02419	-84.45539	Windstream

	2137 WILL FANT DR, 4	38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	Metronet
		38.02428	-84.45550	Charter
		38.02428	-84.45550	Windstream
		38.02428	-84.45550	Windstream
		38.02428	-84.45550	Windstream
		38.02428	-84.45550	Windstream
	2133 WILL FANT DR, 4	38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	Metronet
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Charter
		38.02458	-84.45587	Charter
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Windstream
	2121 WILL FANT DR, 2	38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
	Raise secondary drip loop	38.02478	-84.45611	KU
		38.02478	-84.45611	Metronet
	Lower Windstream	38.02478	-84.45611	Windstream
	Lower Charter	38.02478	-84.45611	Charter
	Lower Windstream	38.02478	-84.45611	Windstream
	Lower Windstream	38.02478	-84.45611	Windstream
	Lower Windstream	38.02478	-84.45611	Windstream

Lower Windstream	38.02478	-84.45611	Windstream
2117 WILL FANT DR, 3	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	Metronet
	38.02502	-84.45640	Charter
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
2216 YOUNG DR, 6	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	Metronet
	38.02524	-84.45671	Charter
	38.02524	-84.45671	Windstream
	38.02524	-84.45671	Windstream
	38.02524	-84.45671	Windstream
25.10 2216 YOUNG DR, 7	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	Metronet
Lower Charter	38.02532	-84.45678	Charter
Lower Charter	38.02532	-84.45678	Charter
Lower Windstream	38.02532	-84.45678	Windstream
Lower Windstream	38.02532	-84.45678	Windstream
Lower Windstream	38.02532	-84.45678	Windstream
308 ST GEORGE DR	38.02529	-84.45688	KU
	38.02529	-84.45688	KU

	38.02529	-84.45688	KU
	38.02529	-84.45688	KU
	38.02529	-84.45688	Metronet
	38.02529	-84.45688	Charter
	38.02529	-84.45688	Windstream
304 ST GEORGE DR	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	Metronet
Lower Charter	38.02516	-84.45714	Charter
Lower Windstream	38.02516	-84.45714	Windstream
2057 ST MICHAEL DR	38.02504	-84.45741	KU
	38.02504	-84.45741	KU
	38.02504	-84.45741	KU
	38.02504	-84.45741	Metronet
	38.02504	-84.45741	Charter
	38.02504	-84.45741	Windstream
2102 WILL FANT DR	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	Metronet
Lower & Resag Charter	38.02464	-84.45718	Charter
Lower Windstream	38.02464	-84.45718	Windstream
2105 ST MICHAEL DR,	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
Raise secondary drip loop	38.02433	-84.45701	KU
	38.02433	-84.45701	Metronet
	38.02433	-84.45701	Charter
	38.02433	-84.45701	Windstream
	38.02433	-84.45701	Windstream
2128 WILL FANT DR, 6	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU

Raise secondary drip loop	38.02401	-84.45683	KU	
	38.02401	-84.45683	Metronet	
	38.02401	-84.45683	Charter	
	38.02401	-84.45683	Windstream	
	38.02401	-84.45683	Windstream	
ec	2134 WILL FANT DR	38.02369	-84.45671	KU
		38.02369	-84.45671	KU
		38.02369	-84.45671	KU
		38.02369	-84.45671	KU
Raise secondary drip loop		38.02369	-84.45671	KU
		38.02369	-84.45671	Metronet
Lower Charter		38.02369	-84.45671	Charter
		38.02369	-84.45671	Charter
		38.02369	-84.45671	Windstream
		38.02369	-84.45671	Windstream
	308 ST GEORGE DR	38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	Metronet
		38.02557	-84.45709	Charter
		38.02557	-84.45709	Windstream
		38.02557	-84.45709	Windstream
	2041 ST MICHAEL DR,	38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	Metronet
Resag Charter		38.02580	-84.45740	Charter
		38.02580	-84.45740	Windstream
		38.02580	-84.45740	Windstream
	2029 ST MICHAEL DR,	38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped	A: DOT Tr	Y/N	Y/N
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Primary	33'6"			Y	N							D: Pedestrian Only 9.5'
Neutral	26'3"			Y	N							
Secondary	25'6"			Y	N							
Secondary	24'9"			Y	N							
Communication		21'5"		Y	N							
Communication	21'9"	20'5"	39	Y	N							
Communication	20'9"	19'5"		Y	N							
Communication	19'8"	18'5"		Y	N							
Communication	18'8"	17'4"		Y	N							
Communication	17'7"	16'4"	15'10"	Y	N							
Primary		33'10"		N	N							D: Pedestrian Only 9.5'
Neutral		28'4"		N	N							
Secondary		27'4"		N	N							
Secondary		26'4"		N	N							
Communication		23'0"		N	N							
Communication		22'0"	67	N	N							
Communication		21'0"		N	N							
Communication		20'0"		N	N							
Communication		19'0"		N	N							
Communication		18'0"	14'9"	N	N							
Primary	34'1"			N	N							D: Pedestrian Only 9.5'
Neutral	28'2"			N	N							
Secondary	27'4"			N	N							
Secondary	26'5"			N	N							
Communication		22'0"		N	N							
Communication	21'0"		60	N	N							
Communication	19'9"			N	N							
Communication	18'9"			N	N							
Communication	17'6"			N	N							
Communication	16'7"		15'0"	N	N							
Primary	33'5"			N	N							D: Pedestrian Only 9.5'
Primary	32'7"			N	N							
Transformer	27'3"			N	N							

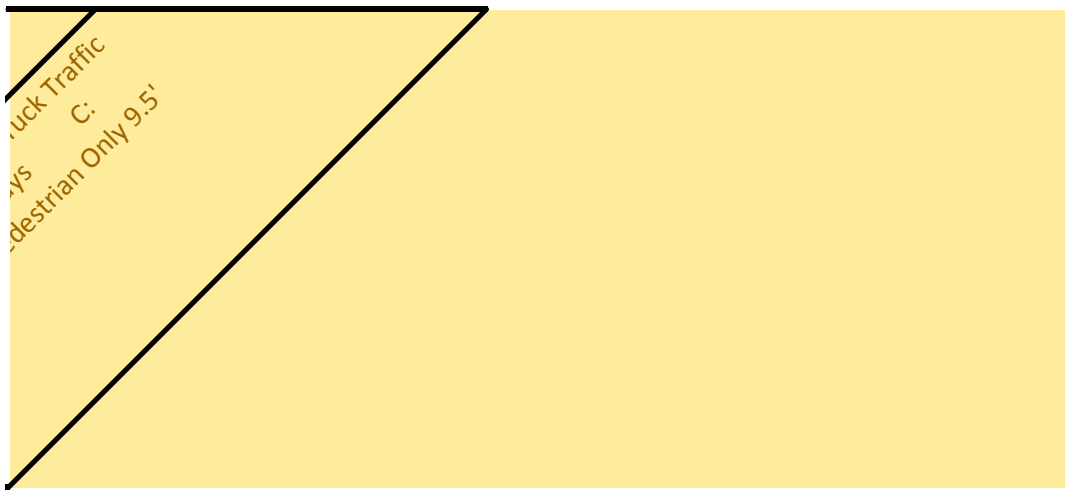
Neutral	25'7"		N	N	
Secondary	24'11"		N	N	
Secondary	24'3"		N	N	
Communication		20'11"	N	N	
OH Guy	20'3"		N	N	
Communication	19'11"		42	N	N
Communication	18'4"			N	N
Communication	17'4"			N	N
Communication	16'4"			N	N
Communication	15'1"	13'8"		N	N
Primary	32'5"			N	N D: Pedestrian Only 9.5'
Neutral	25'5"			N	N
Secondary	24'9"			N	N
Secondary	24'1"			N	N
Communication		20'6"		N	N
Communication	19'6"		45	N	N
Communication	18'7"			N	N
Communication	17'7"			N	N
Communication	16'6"			N	N
Communication	15'6"	14'6"		N	N
Primary	33'5"			N	N D: Pedestrian Only 9.5'
Neutral	26'11"			N	N
Secondary	26'3"			N	N
Secondary	25'6"			N	N
Down Guy	24'7"			N	N
Communication		21'2"		N	N
Communication	20'2"		94	N	N
Communication	18'4"			N	N
Communication	17'5"			N	N
Communication	16'6"			N	N
Communication	15'1"	14'1"		N	N
Primary	30'8"			N	N D: Pedestrian Only 9.5'
Primary	28'4"			N	N
Neutral	23'8"			N	N
OH Guy	21'3"			N	N
Communication		17'5"		N	N
OH Guy	16'5"			N	N
Communication	16'3"			N	N
Communication	15'10"		81	N	N
Communication	15'8"			N	N
Communication	15'4"			N	N
Communication	15'2"			N	N
Communication	13'7"			N	N
Communication	13'1"			N	N
Communication	12'6"	12'9"		N	N
Communication	12'3"			N	N

Primary	35'6"		N	N	D: Pedestrian Only 9.5'
Primary	33'1"		N	N	
Neutral	25'6"		N	N	
Secondary	24'6"		N	N	
Secondary	23'10"		N	N	
Secondary	22'9"		N	N	
Communication		16'11"	N	N	
Communication	15'11"		72	N	N
Communication	15'8"			N	N
Communication	14'11"			N	N
Communication	14'0"			N	N
Communication	13'1"	14'4"		N	N
Primary	38'7"		N	N	D: Pedestrian Only 9.5'
Primary	38'1"		N	N	
Transformer	30'8"		N	N	
Neutral	30'0"		N	N	
Secondary	29'1"		N	N	
Secondary	28'3"		N	N	
Secondary	27'4"		N	N	
Streetlight	25'9"		N	N	
Streetlight	25'2"		N	N	
Communication		23'1"		N	N
Communication	22'1"			N	N
Communication	20'8"			N	N
Communication	20'1"		67	N	N
Communication	19'1"			N	N
Communication	18'2"			N	N
Communication	17'4"			N	N
Communication	16'6"	14'5"		N	N
Primary	37'10"		Y	N	D: Pedestrian Only 9.5'
Transformer	27'7"		Y	N	
Neutral	27'2"		Y	N	
Secondary	26'7"		Y	N	
Secondary	25'10"		Y	N	
Secondary	25'3"		Y	N	
Streetlight	24'6"		Y	N	
Secondary Riser	24'2"		Y	N	
Secondary Drip Loop	23'0"	24'2"		Y	N
Communication		21'0"		Y	N
Communication	21'10"	20'0"		Y	N
Communication	21'0"	19'1"	49	Y	N
Communication	20'3"	18'2"		Y	N
Communication	19'1"	17'3"		Y	N
Communication	18'2"	16'3"		Y	N

Communication	17'3"	15'3"	15'8"	Y	N	
Primary	35'11"			N	N	D: Pedestrian Only 9.5'
Primary	35'1"			N	N	
Transformer	30'7"			N	N	
Neutral	30'5"			N	N	
Secondary	29'1"			N	N	
Secondary	27'11"			N	N	
Streetlight	27'7"			N	N	
Secondary	26'10"			N	N	
OH Guy	25'9"			N	N	
Communication		21'5"		N	N	
Communication	20'5"		85	N	N	
Communication	19'1"			N	N	
Communication	18'1"			N	N	
Communication	17'0"			N	N	
Communication	16'2"		12'10"	N	N	
Primary	38'4"			N	N	D: Pedestrian Only 9.5'
Primary	37'10"			N	N	
Transformer	28'10"			N	N	
Neutral	27'9"			N	N	
Secondary	27'0"			N	N	
Secondary	26'2"			N	N	
Secondary	25'6"			N	N	
Secondary Drip Loop	24'11"			N	N	
Streetlight	23'10"			N	N	
Communication		18'9"		N	N	
Communication	17'9"		99	N	N	
Communication	16'8"			N	N	
Communication	15'8"			N	N	
Communication	14'5"		15'0"	N	N	
Primary	39'11"			Y	N	D: Pedestrian Only 9.5'
Primary	39'3"			Y	N	
Primary	35'10"			Y	N	
Neutral	25'11"			Y	N	
Secondary	24'8"			Y	N	
Communication		21'4"		Y	N	
Communication	22'3"	20'4"	49	Y	N	
Communication	20'11"	19'4"		Y	N	
Communication	19'11"	18'4"	18'7"	Y	N	
Communication	18'9"	17'4"		Y	N	
Communication	18'0"	16'4"		Y	N	
Primary	34'1"			N	N	D: Pedestrian Only 9.5'
Neutral	26'9"			N	N	

Secondary	25'10"			N	N	
Secondary	25'0"			N	N	
Communication		20'11"		N	N	
Communication	19'11"		70	N	N	
Communication	19'1"	15'8"		N	N	
Primary	33'0"			N	N	D: Pedestrian Only 9.5'
Transformer	25'10"			N	N	
Neutral	25'4"			N	N	
Secondary	24'7"			N	N	
Secondary	23'11"			N	N	
Communication		20'4"		N	N	
Communication	20'4"	19'4"	57	N	N	
Communication	18'11"	18'4"	16'0"	N	N	
Primary	32'6"			N	N	B:Residential/Over Driveways
Neutral	25'10"			N	N	
OH Guy	23'5"			N	N	
Communication		21'2"		N	N	
Communication	20'2"		69	N	N	
Communication	18'5"	18'6"		N	N	
Primary	32'7"			Y	Y	D: Pedestrian Only 9.5'
Neutral	25'6"			Y	Y	
Secondary	24'1"			Y	Y	
Secondary	23'6"			Y	Y	
Streetlight	21'5"			Y	Y	
Communication		20'2"		Y	Y	
Communication	20'8"	19'2"	20	Y	Y	
Communication	19'8"	18'2"	12'0"	Y	Y	
Primary	33'5"			Y	N	D: Pedestrian Only 9.5'
Transformer	26'7"			Y	N	
Neutral	25'6"			Y	N	
Secondary	24'9"			Y	N	
Secondary	24'0"			Y	N	
Secondary Drip Loop	21'11"	23'7"		Y	N	
Communication		20'3"		Y	N	
Communication	19'3"			Y	N	
Communication	17'10"		45	Y	N	
Communication	17'5"	17'1"		Y	N	
Primary	32'10"			Y	N	D: Pedestrian Only 9.5'
Transformer	25'8"			Y	N	
Neutral	24'8"			Y	N	
Secondary	23'11"			Y	N	
Secondary	23'3"			Y	N	

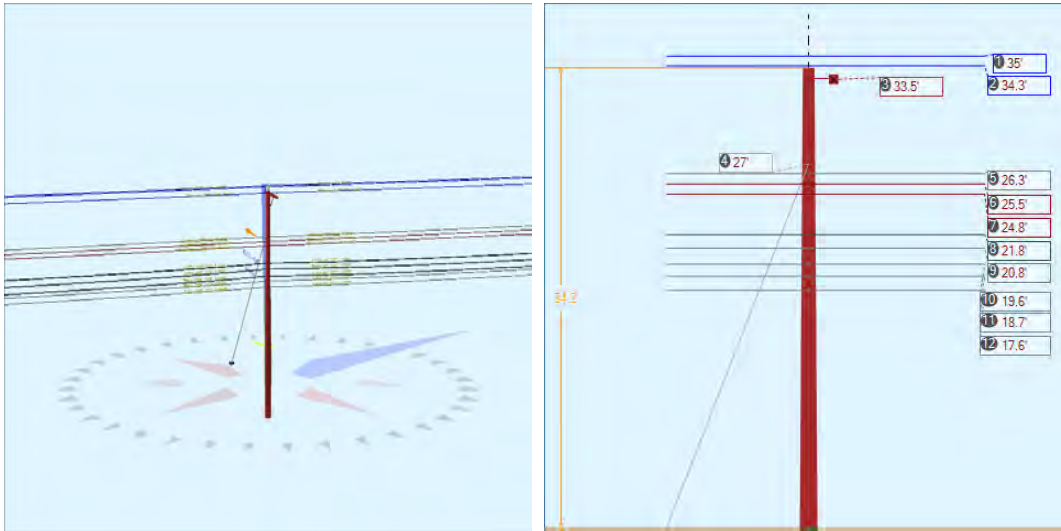
Secondary Drip Loop	22'8"	23'3"		Y	N	
Communication		19'11"		Y	N	
Communication	18'11"		42	Y	N	
Communication	18'3"			Y	N	
Communication	17'8"	11'0"		Y	N	
Primary	31'10"			Y	N	N/A
Neutral	25'3"			Y	N	
Secondary	24'8"			Y	N	
Secondary	24'0"			Y	N	
Secondary Drip Loop	21'7"	24'0"		Y	N	
Communication		20'8"		Y	N	
OH Guy	19'11"	19'8"		Y	N	
Communication	18'8"		N/A	Y	N	
Communication	18'3"			Y	N	
Communication	17'8"	N/A		Y	N	
Primary	39'3"			N	N	B:Residential/Over Driveways
Primary	38'8"			N	N	
Capacitor Bank	32'3"			N	N	
Neutral	31'7"			N	N	
Secondary	30'6"			N	N	
Secondary Riser	28'4"			N	N	
OH Guy	28'1"			N	N	
Streetlight	25'2"			N	N	
Communication		22'5"		N	N	
Communication	21'5"		71	N	N	
Communication	20'11"			N	N	
Communication	20'3"	18'10"		N	N	
Primary	36'7"			N	Y	D: Pedestrian Only 9.5'
Transformer	27'4"			N	Y	
Neutral	25'11"			N	Y	
Secondary	25'3"			N	Y	
Secondary	24'7'			N	Y	
Secondary	23'10"			N	Y	
OH Guy	22'6"			N	Y	
Communication		20'6"		N	Y	
Communication	19'6"		14	N	Y	
Communication	18'8"			N	Y	
Communication	17'9"	13'10"		N	Y	
Primary	37'10"			N	N	D: Pedestrian Only 9.5'
Transformer	28'6"			N	N	
Neutral	25'9"			N	N	
Secondary	25'1"			N	N	
Secondary	24'4"			N	N	



1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND																																																					
<table border="1"> <thead> <tr> <th colspan="2">FIBER & EQUIPMENT</th> </tr> </thead> <tbody> <tr> <td></td> <td>2X8 SPLITTER CASE</td> </tr> <tr> <td></td> <td>1X4 (1) TERMINAL</td> </tr> <tr> <td></td> <td>1X4 (2) TERMINAL</td> </tr> <tr> <td></td> <td>1X4 (3) TERMINAL</td> </tr> <tr> <td></td> <td>FIBER SPLICE</td> </tr> <tr> <td></td> <td>HIP CABINET</td> </tr> <tr> <td></td> <td>LCP CABINET</td> </tr> <tr> <td></td> <td>SLACK LOOP</td> </tr> <tr> <td></td> <td>RING CUT PHYSICAL SPLICE</td> </tr> <tr> <td></td> <td>TOTAL PHYSICAL SPLICE COUNT WITHIN CASE</td> </tr> </tbody> </table>	FIBER & EQUIPMENT			2X8 SPLITTER CASE		1X4 (1) TERMINAL		1X4 (2) TERMINAL		1X4 (3) TERMINAL		FIBER SPLICE		HIP CABINET		LCP CABINET		SLACK LOOP		RING CUT PHYSICAL SPLICE		TOTAL PHYSICAL SPLICE COUNT WITHIN CASE	<table border="1"> <thead> <tr> <th colspan="2">AERIAL STRUCTURE</th> </tr> </thead> <tbody> <tr> <td></td> <td>POWER POLE</td> </tr> <tr> <td></td> <td>POWER POLE W/TRANSFORMER</td> </tr> <tr> <td></td> <td>JOINT USE POLE</td> </tr> <tr> <td></td> <td>JOINT USE POLE W/TRANSFORMER</td> </tr> <tr> <td></td> <td>DROP POLE</td> </tr> <tr> <td></td> <td>TELEPHONE POLE</td> </tr> <tr> <td></td> <td>CATV POLE</td> </tr> <tr> <td></td> <td>CONCRETE POLE</td> </tr> <tr> <td></td> <td>STEEL POLE</td> </tr> <tr> <td></td> <td>PUSH POLE</td> </tr> <tr> <td></td> <td>DOWN GUY</td> </tr> <tr> <td></td> <td>OVERHEAD GUY</td> </tr> <tr> <td></td> <td>POLE TO POLE GUY</td> </tr> <tr> <td></td> <td>SIDEWALK GUY</td> </tr> </tbody> </table>	AERIAL STRUCTURE			POWER POLE		POWER POLE W/TRANSFORMER		JOINT USE POLE		JOINT USE POLE W/TRANSFORMER		DROP POLE		TELEPHONE POLE		CATV POLE		CONCRETE POLE		STEEL POLE		PUSH POLE		DOWN GUY		OVERHEAD GUY		POLE TO POLE GUY		SIDEWALK GUY
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Pole Num:	63W - NT	Pole Length / Class:	40 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022646 Deg	Longitude:	-84.456415 Deg	Elevation:	881.730368443642		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	300.0
Groundline	0.0	300.0
Vertical	19.4	110.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,436	300.2
Groundline	20,436	300.2
GL Allowable	124,251	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.0	290.0		0.0	300.0	9.6	120.0
? EHS 3/8 (Down)			27.0	0.0	300.0	15.2	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 300.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	236	24.4	6,968	34.1	5.6	380	479	4	384	5.6
Comms	503	52.1	9,366	45.8	7.5	511	1,073	8	519	7.6
GuyBraces	1	0.1	36	0.2	0.0	2	10	0	2	0.0
Pole	216	22.3	3,781	18.5	3.0	206	2,528	19	225	3.3
Crossarms	1	0.1	41	0.2	0.0	2	95	1	3	0.0
Insulators	9	0.9	244	1.2	0.2	13	106	1	14	0.2
Pole Load	966	100.0	20,436	100.0	16.5	1,115	4,291	32	1,147	16.9
Pole Reserve Capacity			103,815		83.6	5,685			5,653	83.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 300.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	365	37.8	9,745	47.7	7.8	532	748	6	537	7.9
Unknown, COMMUNICATION	384	39.8	6,869	33.6	5.5	375	920	7	382	5.6
Pole	216	22.3	3,781	18.5	3.0	206	2,528	19	225	3.3
<Undefined>	1	0.1	41	0.2	0.0	2	95	1	3	0.0
Totals:	966	100.0	20,436	100.0	16.5	1,115	4,291	32	1,147	16.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	0.00	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	594	0	1,126	1,720
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	0.00	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,440	0	1,099	-341
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	582	-151	1,103	1,533
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,410	-148	1,076	-482
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	582	152	1,103	1,836
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,410	148	1,076	-186

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.30	7.31	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	446	-25	845	1,266
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.30	7.31	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,081	-24	825	-280
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.53	7.36	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	433	-25	820	1,228
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.53	7.36	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,049	-24	800	-273
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	7.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	420	-25	796	1,191
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	7.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,018	-24	777	-265
Totals:											-4,353	-146	11,447	6,948	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	KU, UTILITY	21.76	7.61	1.3300	1.68	0.337	122.7	29.8	122.7	925	160	-61	1,425	1,524
CATV	CATV 1.0	KU, UTILITY	21.76	7.61	1.3300	1.63	0.337	119.7	209.3	119.7	925	-389	-60	1,390	942
Telco	TELE 1.5	Unknown, COMMUNICATION	20.76	7.68	1.5000	1.96	0.900	122.7	29.8	122.7	2,000	331	-108	1,486	1,708
Telco	TELE 1.5	Unknown, COMMUNICATION	20.76	7.68	1.5000	1.90	0.900	119.7	209.3	119.7	2,000	-801	-105	1,449	543
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.75	1.5000	1.96	0.900	122.7	29.8	122.7	2,000	311	-109	1,400	1,602
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.75	1.5000	1.90	0.900	119.7	209.3	119.7	2,000	-755	-106	1,365	504
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.66	7.81	0.6570	1.67	0.190	122.7	29.8	122.7	750	111	-36	772	848
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.66	7.81	0.6570	1.62	0.190	119.7	209.3	119.7	750	-270	-35	754	449
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.62	7.88	0.6570	1.67	0.190	122.7	29.8	122.7	750	105	-36	729	798
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.62	7.88	0.6570	1.62	0.190	119.7	209.3	119.7	750	-255	-35	712	421
Totals:											-1,452	-691	11,482	9,339	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	33.50	6.09	29.8	29.8	50.00	4.50	3.50	96.00	0	41	41
Totals:										0	41	41

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.16	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	45.00	112.1	0.0	6.00	3.50	7.50	-43	43	0
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	-45.00	307.5	0.0	6.00	3.50	7.50	43	43	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.30	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.53	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.77	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	9
Bolt	Three Bolt	KU, UTILITY	21.76	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.76	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.56	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.66	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Totals:										-38	281	243

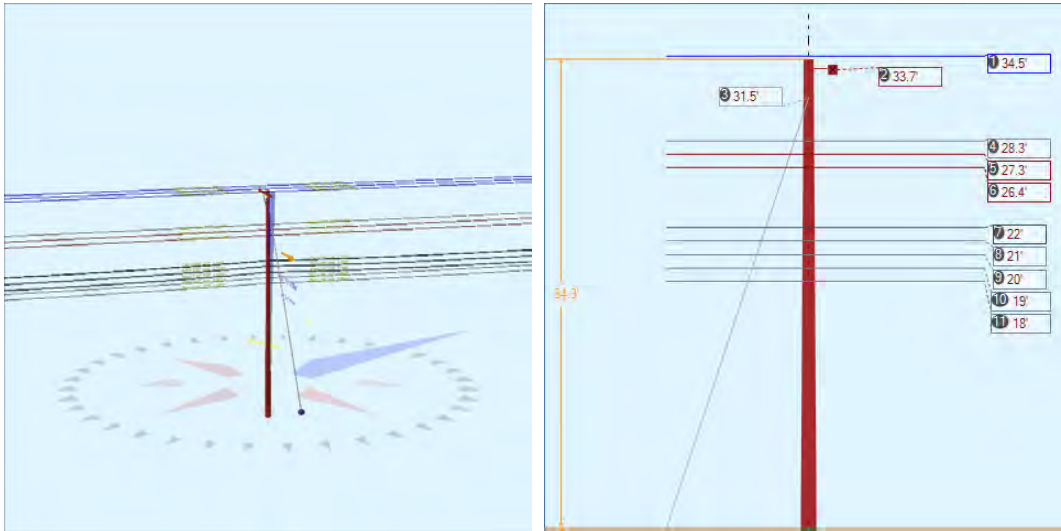
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	27.01	0.00	16.00	0.375	75.00	290.0	59.1	0.273	29.69	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,106	1,914	0	0	0	0	36
Totals:										0	0	0	36

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.00	290.0	20,000	1.00	20,000	1,914	0	9.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.43	32.92	12.23	8.96	8.60	13.08	1.60e+6	60.00	57.00	34.16	542,638	5363.82	125.00

Pole Num:	64W - 28930-2163	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022937 Deg	Longitude:	-84.456227 Deg	Elevation:	884.360812389547		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.7	0.0
Groundline	19.7	0.0
Vertical	1.3	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,219	120.0
Groundline	16,219	120.0
GL Allowable	84,503	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.2	116.5		0.0	119.3	9.2	300.0
? EHS 3/8 (Down)			31.5	0.0	119.3	14.7	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	144	18.2	4,288	26.4	5.1	347	472	5	352	5.2
Comms	451	57.0	8,458	52.2	10.0	685	1,058	10	695	10.2
GuyBraces	1	0.1	35	0.2	0.0	3	11	0	3	0.0
Pole	188	23.8	3,263	20.1	3.9	264	1,918	18	283	4.2
Crossarms	1	0.2	41	0.3	0.1	3	95	1	4	0.1
Insulators	5	0.7	134	0.8	0.2	11	93	1	12	0.2
Pole Load	790	100.0	16,219	100.0	19.2	1,314	3,647	35	1,349	19.8
Pole Reserve Capacity			68,284		80.8	5,486			5,451	80.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	150	19.0	4,484	27.7	5.3	363	529	5	368	5.4
Unknown, COMMUNICATION	451	57.0	8,430	52.0	10.0	683	1,105	11	693	10.2
Pole	188	23.8	3,263	20.1	3.9	264	1,918	18	283	4.2
<Undefined>	1	0.2	41	0.3	0.1	3	95	1	4	0.1
Totals:	790	100.0	16,219	100.0	19.2	1,314	3,647	35	1,349	19.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	5.45	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	0	1,051	-648
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	5.45	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	0	1,110	1,475
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	-143	1,051	-791
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	-151	1,110	1,324
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	144	1,051	-505
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	152	1,110	1,627

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.30	6.53	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,392	-21	861	-552
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.30	6.53	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	299	-22	909	1,187
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.34	6.58	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,345	-21	832	-534
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.34	6.58	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	289	-22	879	1,145
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.37	6.64	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,297	-21	802	-516
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.37	6.64	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	279	-22	847	1,104
Totals:											-7,171	-128	11,614	4,315	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.96	6.91	1.3300	1.57	0.337	116.2	29.0	116.2	925	-469	-53	1,362	839
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.96	6.91	1.3300	1.68	0.337	122.7	209.8	122.7	925	101	-56	1,438	1,483
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.01	6.97	1.5000	1.83	0.900	116.2	29.0	116.2	2,000	-971	-93	1,423	360
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.01	6.97	1.5000	1.96	0.900	122.7	209.8	122.7	2,000	209	-98	1,503	1,614
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.96	7.03	1.5000	1.83	0.900	116.2	29.0	116.2	2,000	-923	-93	1,353	336
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.96	7.03	1.5000	1.96	0.900	122.7	209.8	122.7	2,000	198	-99	1,428	1,528
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.98	7.09	0.6570	1.56	0.190	116.2	29.0	116.2	750	-329	-31	744	384
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.98	7.09	0.6570	1.67	0.190	122.7	209.8	122.7	750	71	-33	786	824
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.15	0.6570	1.56	0.190	116.2	29.0	116.2	750	-313	-31	707	363
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.15	0.6570	1.67	0.190	122.7	209.8	122.7	750	67	-33	746	781
		COMMUNICATION													
Totals:											-2,359	-618	11,490	8,513	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	33.72	5.45	209.4	209.4	50.00	4.50	3.50	96.00	0	41	42
Totals:										0	41	42

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	0.00	209.4	0.0	6.00	3.50	7.50	0	43	43
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	45.00	292.5	0.0	6.00	3.50	7.50	-43	43	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	-45.00	126.3	0.0	6.00	3.50	7.50	43	43	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.30	0.00	299.4	209.4	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.34	0.00	299.4	209.4	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.37	0.00	299.4	209.4	2.00	3.00	3.19	-2	12	10
Bolt	Three Bolt	Unknown, COMMUNICATION	21.96	0.00	299.4	209.4	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.01	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.96	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.98	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.03	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Totals:										-34	168	134

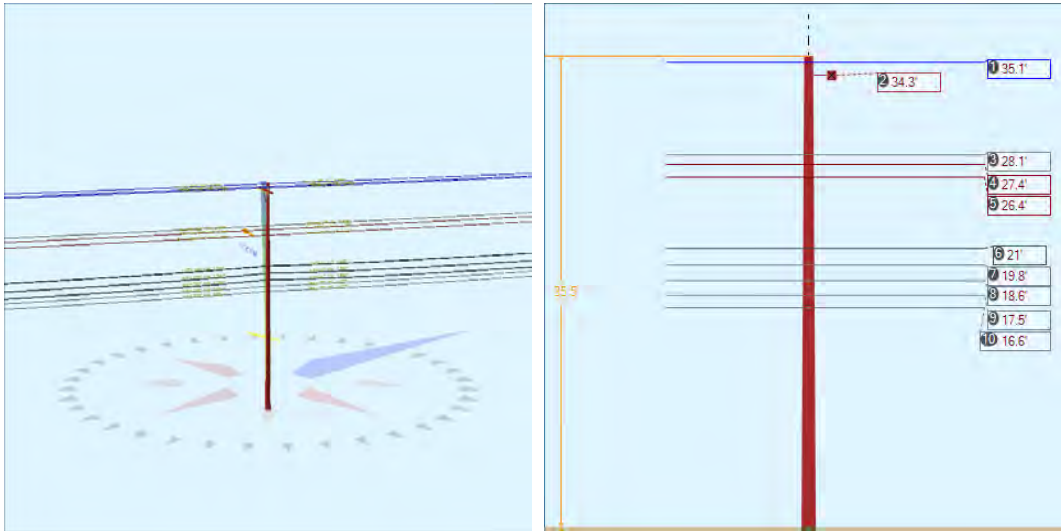
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	31.47	0.00	17.21	0.375	75.00	116.5	61.1	0.273	34.22	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,031	1,846	0	0	0	0	35
Totals:										0	0	0	35

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	17.21	116.5	20,000	1.00	20,000	1,846	0	9.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.25	33.22	10.68	8.36	7.32	11.50	1.60e+6	60.00	57.00	34.30	290,016	2805.47	76.92

Pole Num:	65W - 28930-2157	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.45	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023250 Deg	Longitude:	-84.456018 Deg	Elevation:	883.385342969925		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	58.6	0.0
Groundline	58.6	0.0
Vertical	11.9	20.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	41,169	297.9
Groundline	41,169	297.9
GL Allowable	70,946	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 297.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	743	44.4	23,067	56.0	32.5	2,215	458	5	2,220	32.6
Comms	741	44.3	14,620	35.5	20.6	1,404	1,026	11	1,415	20.8
Pole	182	10.9	3,265	7.9	4.6	313	1,730	19	332	4.9
Crossarms	1	0.1	42	0.1	0.1	4	95	1	5	0.1
Insulators	5	0.3	175	0.4	0.3	17	93	1	18	0.3
Pole Load	1,672	100.0	41,169	100.0	58.0	3,953	3,401	37	3,990	58.7
Pole Reserve Capacity			29,777		42.0	2,847			2,810	41.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 297.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	748	44.7	23,215	56.4	32.7	2,229	503	5	2,234	32.9
Unknown, COMMUNICATION	741	44.3	14,647	35.6	20.7	1,406	1,073	12	1,418	20.9
Pole	182	10.9	3,265	7.9	4.6	313	1,730	19	332	4.9
<Undefined>	1	0.1	42	0.1	0.1	4	95	1	5	0.1
Totals:	1,672	100.0	41,169	100.0	58.0	3,953	3,401	37	3,990	58.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	24.55	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	76	1,062	1,931
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	24.55	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	77	1,068	2,568
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	18.73	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	-57	1,062	1,798
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	18.73	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	-57	1,068	2,434
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	36.37	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	-114	1,062	1,741
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	36.37	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	-115	1,068	2,377
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.09	6.28	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	635	20	849	1,504

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.09	6.28	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,139	20	855	2,013
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.38	6.32	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	619	20	828	1,467
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.38	6.32	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,110	20	833	1,963
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.42	6.38	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	597	20	799	1,416
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.42	6.38	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,071	20	804	1,895
Totals:											11,820	-70	11,357	23,107	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.04	6.69	1.3300	1.56	0.337	115.5	27.3	115.5	925	207	51	1,297	1,554
CATV	CATV 1.0	Unknown, COMMUNICATION	21.04	6.69	1.3300	1.57	0.337	116.2	209.0	116.2	925	371	51	1,304	1,726
Telco	TELE 1.5	Unknown, COMMUNICATION	19.78	6.76	1.5000	1.82	0.900	115.5	27.3	115.5	2,000	420	89	1,332	1,841
Telco	TELE 1.5	Unknown, COMMUNICATION	19.78	6.76	1.5000	1.83	0.900	116.2	209.0	116.2	2,000	754	90	1,340	2,184
Telco	TELE 1.5	Unknown, COMMUNICATION	18.61	6.83	1.5000	1.82	0.900	115.5	27.3	115.5	2,000	395	90	1,253	1,739
Telco	TELE 1.5	Unknown, COMMUNICATION	18.61	6.83	1.5000	1.83	0.900	116.2	209.0	116.2	2,000	709	91	1,261	2,061
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.50	6.90	0.6570	1.55	0.190	115.5	27.3	115.5	750	139	30	682	851
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.50	6.90	0.6570	1.56	0.190	116.2	209.0	116.2	750	250	30	686	966
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.57	6.95	0.6570	1.55	0.190	115.5	27.3	115.5	750	132	30	646	808
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.57	6.95	0.6570	1.56	0.190	116.2	209.0	116.2	750	237	30	650	917
Totals:											3,613	582	10,450	14,645	

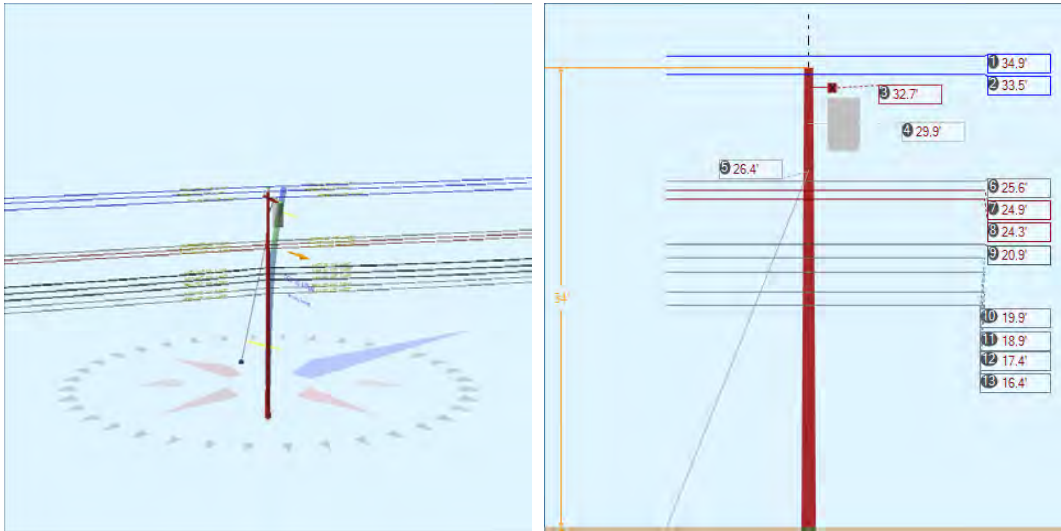
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	34.28	5.17	208.2	208.2	50.00	4.50	3.50	96.00	0	42	42
Totals:										0	42	42

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV KU, UTILITY	34.47	24.00	286.0	0.0	6.00	3.50	7.50	23	44	67	
Pin	Pin Insulator - 5 kV KU, UTILITY	34.47	-18.00	134.2	0.0	6.00	3.50	7.50	-17	44	27	
Pin	Pin Insulator - 5 kV KU, UTILITY	34.47	-36.00	126.3	0.0	6.00	3.50	7.50	-34	44	10	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.09	0.00	298.2	208.2	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.38	0.00	298.2	208.2	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	26.42	0.00	298.2	208.2	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt Unknown, COMMUNICATION	21.04	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	19.78	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.61	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	17.50	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	16.57	0.00	298.2	208.2	5.00	3.00	0.00	6	0	6	
Totals:										5	171	175

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.26	33.28	10.06	13.60	6.69	10.85	1.60e+6	60.00	57.00	35.55	28,498	285.79	8.40

Pole Num:	66W - 28930-2151	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.99	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023519 Deg	Longitude:	-84.455864 Deg	Elevation:	915.900661817411		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.1	26.7
Groundline	11.4	26.3
Vertical	7.3	117.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	5,331	92.1
Groundline	5,152	102.0
GL Allowable	67,470	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.2	297.0		19.1	110.0	19.2	120.0
? EHS 3/8 (Down)			26.4	27.6	110.0	30.5	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 102.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,177	244.2	19,416	376.9	28.8	3,512	497	6	3,518	51.7
Comms	969	200.9	10,615	206.0	15.7	1,920	1,113	12	1,933	28.4
GuyBraces	-1,900	-394.0	-27,922	-542.0	-41.4	-5,051	4,924	55	-4,996	-73.5
PowerEquipments	54	11.3	1,178	22.9	1.8	213	1,216	14	227	3.3
Pole	170	35.3	1,638	31.8	2.4	296	1,619	18	315	4.6
Crossarms	3	0.5	55	1.1	0.1	10	95	1	11	0.2
Insulators	9	1.8	172	3.3	0.3	31	106	1	32	0.5
Pole Load	482	100.0	5,152	100.0	7.6	932	9,570	107	1,039	15.3
Pole Reserve Capacity			62,318		92.4	5,868			5,761	84.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 102.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-660	-136.8	-7,170	-139.2	-10.6	-1,297	6,695	75	-1,222	-18.0
Unknown, COMMUNICATION	969	200.9	10,629	206.3	15.8	1,923	1,161	13	1,936	28.5
Pole	170	35.3	1,638	31.8	2.4	296	1,619	18	315	4.6
<Undefined>	3	0.5	55	1.1	0.1	10	95	1	11	0.2
Totals:	482	100.0	5,152	100.0	7.6	932	9,570	107	1,039	15.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.88	0.00	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	30,225	0	1,161	31,386
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.88	0.00	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-25,547	0	1,010	-24,538
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	29,054	166	1,116	30,337
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-24,558	141	970	-23,446
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	29,054	-155	1,116	30,015

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-24,558	-132	970	-23,719
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.61	6.33	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	22,182	23	852	23,057
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.61	6.33	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-18,749	19	741	-17,989
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.94	6.37	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	21,602	23	830	22,455
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.94	6.37	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-18,259	19	722	-17,518
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.29	6.41	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	21,039	23	808	21,871
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.29	6.41	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-17,783	19	703	-17,061
Totals:											23,702	147	11,001	34,850	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.94	6.61	1.3300	1.90	0.337	135.9	30.2	135.9	925	7,885	56	1,420	9,362
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.94	6.61	1.3300	1.56	0.337	115.5	207.3	115.5	925	-6,665	48	1,235	-5,382
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.67	1.5000	2.22	0.900	135.9	30.2	136.0	2,000	16,233	99	1,478	17,810
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.67	1.5000	1.82	0.900	115.5	207.3	115.5	2,000	-13,721	84	1,285	-12,352
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.88	6.73	1.5000	2.22	0.900	135.9	30.2	136.0	2,000	15,369	100	1,399	16,869
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.88	6.73	1.5000	1.82	0.900	115.5	207.3	115.5	2,000	-12,991	85	1,217	-11,689
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	6.81	0.6570	1.88	0.190	135.9	30.2	135.9	750	5,316	33	747	6,096
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	6.81	0.6570	1.55	0.190	115.5	207.3	115.5	750	-4,493	28	649	-3,816
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.44	6.87	0.6570	1.88	0.190	135.9	30.2	135.9	750	5,017	33	705	5,755
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.44	6.87	0.6570	1.55	0.190	115.5	207.3	115.5	750	-4,240	28	613	-3,599
		COMMUNICATION													
Totals:											7,710	596	10,747	19,053	

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	29.87	21.58	25.0	25.0	640.00	47.00	--	24.00	--	494	1,622	2,115
Totals:												494	1,622	2,115

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		32.72	5.17	28.8	28.8	50.00	4.50	3.50	96.00	12	86	98	
Totals:												12	86	98

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.01	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157		
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.91	45.00	112.2	0.0	6.00	3.50	7.50	42	42	84		
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.91	-45.00	305.3	0.0	6.00	3.50	7.50	-40	42	2		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.61	0.00	118.8	28.8	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.94	0.00	118.8	28.8	2.00	3.00	3.19	2	11	13		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.29	0.00	118.8	28.8	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	20.94	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.94	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.88	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.42	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	16.44	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Totals:												34	275	309

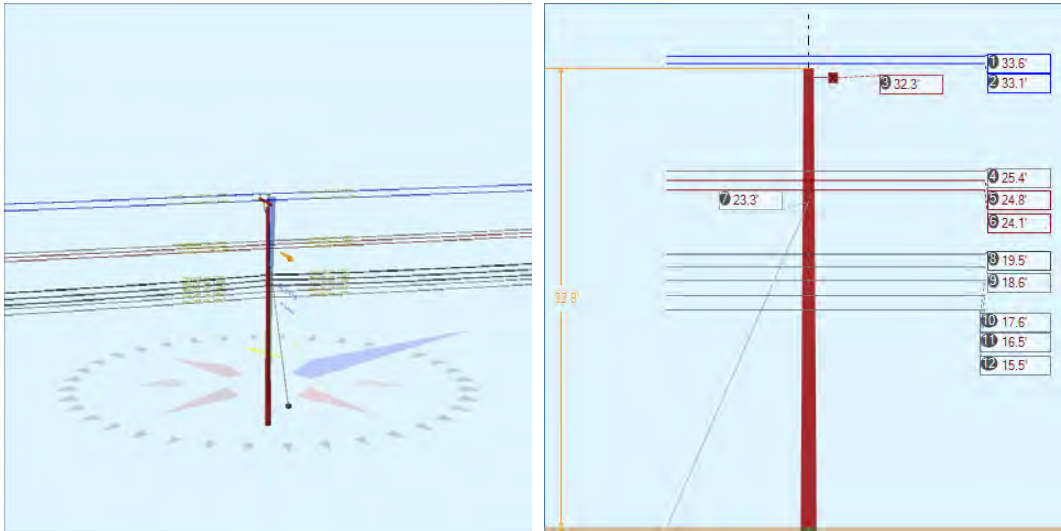
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	26.38	0.00	16.15	0.375	75.00	297.0	58.3	0.273	29.27	0.70

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,222	3,838	3,821	3,252	2,007	-1,938	-50,118
Totals:										3,252	2,007	-1,938	-50,118

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.15	297.0	20,000	1.00	20,000	3,838	3,821	19.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.79	34.08	9.68	14.51	6.69	10.67	1.60e+6	60.00	57.00	34.01	130,476	1310.91	13.70

Pole Num:	67W - 28930-2143	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.23	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023825 Deg	Longitude:	-84.455606 Deg	Elevation:	879.398984248307		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.2	120.0
Groundline	24.2	120.0
Vertical	1.2	300.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,082	120.4
Groundline	19,082	120.4
GL Allowable	80,463	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.5	120.4		0.0	120.0	11.6	300.0
? EHS 3/8 (Down)			23.3	0.0	120.0	18.3	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 120.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	249	25.9	7,098	37.2	8.8	598	495	5	603	8.9
Comms	522	54.4	8,672	45.5	10.8	731	1,109	11	742	10.9
GuyBraces	1	0.1	26	0.1	0.0	2	8	0	2	0.0
Pole	178	18.6	3,010	15.8	3.7	254	1,795	18	272	4.0
Crossarms	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	237	1.2	0.3	20	106	1	21	0.3
Pole Load	959	100.0	19,082	100.0	23.7	1,609	3,608	36	1,645	24.2
Pole Reserve Capacity			61,381		76.3	5,191			5,155	75.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 120.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	258	26.9	7,388	38.7	9.2	623	562	6	628	9.2
Unknown, COMMUNICATION	522	54.4	8,644	45.3	10.7	729	1,156	12	740	10.9
Pole	178	18.6	3,010	15.8	3.7	254	1,795	18	272	4.0
<Undefined>	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Totals:	959	100.0	19,082	100.0	23.7	1,609	3,608	36	1,645	24.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.64	0.00	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,087	0	1,009	-78
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.64	0.00	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	275	0	1,198	1,473
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,070	-141	993	-218
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	270	-168	1,179	1,282
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,070	141	993	64
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	270	168	1,179	1,617

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.61	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-821	-21	762	-80
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.61	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	208	-25	905	1,088
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.65	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-800	-21	742	-78
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.65	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	202	-25	882	1,059
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.08	6.69	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-778	-21	722	-77
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.08	6.69	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	197	-25	857	1,029
Totals:											-4,204	-136	11,422	7,081	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.49	6.97	1.3300	1.55	0.337	114.5	29.7	114.5	925	-274	-52	1,191	865
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.49	6.97	1.3300	1.90	0.337	135.9	210.2	135.9	925	69	-62	1,414	1,421
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.59	7.02	1.5000	1.80	0.900	114.5	29.7	114.5	2,000	-564	-92	1,241	585
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.59	7.02	1.5000	2.23	0.900	135.9	210.2	136.0	2,000	143	-109	1,474	1,508
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.62	7.08	1.5000	1.80	0.900	114.5	29.7	114.5	2,000	-535	-93	1,176	549
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.62	7.08	1.5000	2.23	0.900	135.9	210.2	136.0	2,000	135	-110	1,397	1,422
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.54	7.15	0.6570	1.54	0.190	114.5	29.7	114.5	750	-188	-31	639	420
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.54	7.15	0.6570	1.89	0.190	135.9	210.2	135.9	750	48	-36	759	770
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.53	7.21	0.6570	1.54	0.190	114.5	29.7	114.5	750	-177	-31	600	392
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.53	7.21	0.6570	1.89	0.190	135.9	210.2	135.9	750	45	-37	712	720
		COMMUNICATION													
Totals:											-1,299	-653	10,602	8,651	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	32.29	5.44	209.9	209.9	50.00	4.50	3.50	96.00	0	40	40
Totals:										0	40	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.77	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	45.00	293.0	0.0	6.00	3.50	7.50	-43	42	-1
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	-45.00	126.8	0.0	6.00	3.50	7.50	43	42	84
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.42	0.00	299.9	209.9	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.76	0.00	299.9	209.9	2.00	3.00	3.19	-2	12	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.08	0.00	299.9	209.9	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	19.49	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.59	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.54	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.53	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Totals:										-34	270	236

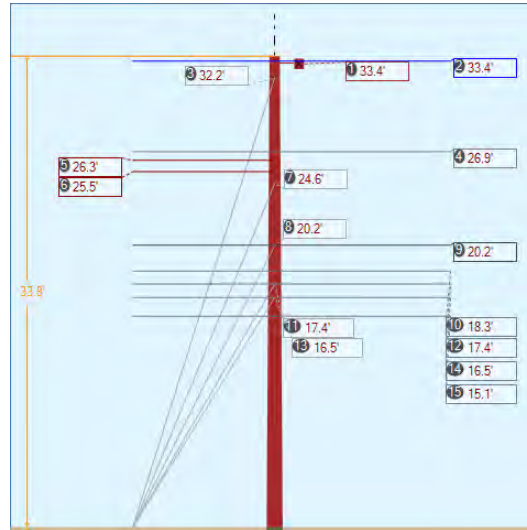
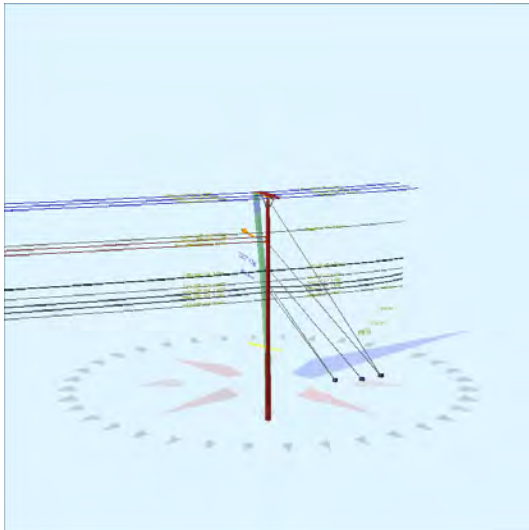
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	23.25	0.00	13.46	0.375	75.00	120.4	59.7	0.273	25.19	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,542	2,310	0	0	0	0	26
Totals:										0	0	0	26

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	13.46	120.4	20,000	1.00	20,000	2,310	0	11.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.10	33.08	10.54	8.08	7.32	11.31	1.60e+6	60.00	57.00	32.77	309,510	3006.40	83.33

Pole Num:	68W - 28930-2141	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.25	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024129 Deg	Longitude:	-84.455415 Deg	Elevation:	893.605450627136		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.7	0.0
Groundline	30.7	0.0
Vertical	19.0	24.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,506	263.8
Groundline	21,506	263.8
GL Allowable	83,051	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.1	28.5		75.8	297.0	78.9	175.0
? EHS 3/8 (Down)			32.2	54.8	297.0	61.8	210.0
? EHS 3/8 (Down)			24.6	54.8	297.0	63.7	140.0
? Single Helix Anchor	17.1	32.2		18.5	297.0	18.5	292.8
? EHS 1/4 (Down)			20.2	61.7	297.0	67.9	292.8
? Single Helix Anchor	12.3	30.5		33.2	297.0	33.3	250.0
? EHS 1/4 (Down)			17.4	55.3	297.0	61.0	260.0
? EHS 1/4 (Down)			16.5	55.8	297.0	61.6	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 263.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,777	350.9	94,703	440.4	114.0	13,650	216	2	13,652	200.8
Comms	4,521	274.6	44,786	208.3	53.9	6,455	628	6	6,462	95.0
GuyBraces	-8,832	-536.4	-119,985	-557.9	-144.5	-17,295	30,759	300	-16,995	-249.9
Pole	155	9.4	1,508	7.0	1.8	217	1,874	18	236	3.5
Crossarms	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Insulators	25	1.5	494	2.3	0.6	71	127	1	72	1.1
Pole Load	1,646	100.0	21,506	100.0	25.9	3,100	33,794	329	3,429	50.4
Pole Reserve Capacity			61,545		74.1	3,700			3,371	49.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 263.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	696	42.3	13,737	63.9	16.5	1,980	18,613	181	2,161	31.8
Unknown, COMMUNICATION	796	48.3	6,260	29.1	7.5	902	13,117	128	1,030	15.2
Pole	155	9.4	1,508	7.0	1.8	217	1,874	18	236	3.5
<Undefined>	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Totals:	1,646	100.0	21,506	100.0	25.9	3,100	33,794	329	3,429	50.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	7.34	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	-1	197	-8,138
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	46.53	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	2	197	-8,136
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	44.64	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	-2	197	-8,140
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	18.17	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	5	764	31,819
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	49.41	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	9	764	31,824
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	47.63	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	-6	764	31,808
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.90	6.58	0.3250	0.01	0.107	27.3	19.1	27.3	150	-2,238	4	158	-2,076
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.90	6.58	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	32,811	15	615	33,442
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.28	6.62	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	32,046	10	601	32,657
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.47	6.66	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	31,064	10	583	31,657
Totals:										161,833	45	4,839	166,717	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.21	6.98	1.3300	0.33	0.337	27.3	19.1	27.3	150	-1,681	11	264	-1,406
CATV	CATV 1.0 Unknown, COMMUNICATION	20.21	6.98	1.3300	1.55	0.337	114.5	207.7	114.5	925	13,537	46	1,025	14,608

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.35	7.10	0.6570	0.31	0.190	27.3	19.1	27.3	150	-1,526	6	152	-1,369
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.35	7.10	0.6570	1.54	0.190	114.5	207.7	114.5	750	9,966	26	589	10,581
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.15	1.5000	0.37	0.900	27.3	19.1	27.4	150	-1,450	19	249	-1,181
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.15	1.5000	1.80	0.900	114.5	207.7	114.5	2,000	25,236	81	966	26,283
Telco	TELE 1.5	Unknown, COMMUNICATION	16.46	7.21	1.5000	0.37	0.900	27.3	19.1	27.4	150	-1,370	20	235	-1,115
Telco	TELE 1.5	Unknown, COMMUNICATION	16.46	7.21	1.5000	1.80	0.900	114.5	207.7	114.5	2,000	23,848	82	913	24,843
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.12	7.29	0.6570	0.31	0.190	27.3	19.1	27.3	150	-1,258	6	125	-1,127
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.12	7.29	0.6570	1.54	0.190	114.5	207.7	114.5	750	8,213	27	485	8,725
Totals:											73,515	325	5,002	78,843	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.39	5.43	203.4	203.4	50.00	4.50	3.50	96.00	0	1	1	
Totals:											0	1	1

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	0.00	203.4	-184.3	3.00	3.80	12.75	-3	132	129
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	45.00	286.5	-184.3	3.00	3.80	12.75	35	132	166
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	-45.00	120.3	-184.3	3.00	3.80	12.75	-40	132	92
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	0.00	203.4	4.3	3.00	3.80	12.75	9	132	141
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	45.00	286.5	4.3	3.00	3.80	12.75	46	132	178
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	-45.00	120.3	4.3	3.00	3.80	12.75	-28	132	104
Spool	Spool Insulator - 25 kV KU, UTILITY	26.90	0.00	293.4	203.4	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV KU, UTILITY	26.28	0.00	207.7	207.7	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV KU, UTILITY	25.47	0.00	207.7	207.7	2.00	3.00	3.19	1	10	11

Bolt	Single Bolt	Unknown, COMMUNICATION	20.21	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	18.35	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	17.42	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	16.46	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	15.12	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Totals:										49	820	869

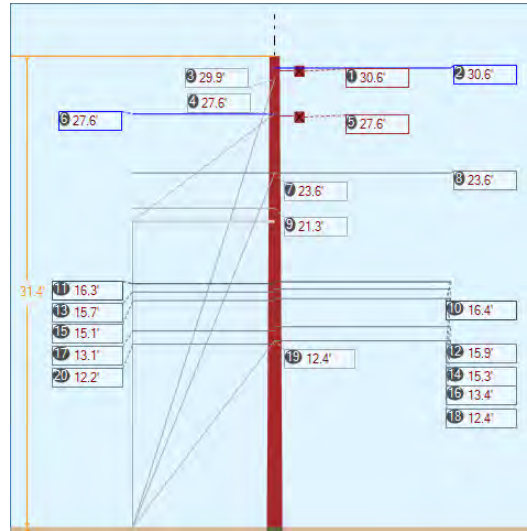
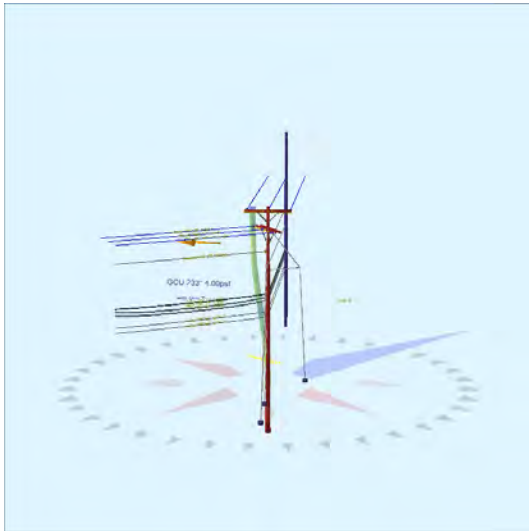
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	32.20	0.00	21.06	0.375	75.00	28.5	56.6	0.273	36.80	1.76
EHS 3/8	Down	KU, UTILITY	24.62	0.00	21.06	0.375	75.00	28.5	49.3	0.273	30.67	1.47
EHS 1/4	Down	Unknown, COMMUNICATION	20.21	0.00	17.08	0.25	75.00	32.2	49.6	0.121	24.72	1.29
EHS 1/4	Down	Unknown, COMMUNICATION	17.42	0.00	12.26	0.25	75.00	30.5	54.7	0.121	19.58	0.92
EHS 1/4	Down	Unknown, COMMUNICATION	16.46	0.00	12.26	0.25	75.00	30.5	53.1	0.121	18.80	0.89

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,559	7,781	7,593	6,340	4,179	-2,376	-75,064
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,829	8,026	7,597	5,759	4,955	-2,818	-68,314
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,063	3,694	3,693	2,813	2,392	-1,484	-29,414
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,648	3,316	3,307	2,698	1,912	-1,141	-19,309
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,686	3,351	3,337	2,670	2,002	-1,195	-19,124
Totals:										20,280	15,440	-9,013	-211,225

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.06	28.5	20,000	1.00	20,000	15,775	15,159	78.9
Single Helix Anchor			18.00	17.08	32.2	20,000	1.00	20,000	3,694	3,693	18.5
Single Helix Anchor			18.00	12.26	30.5	20,000	1.00	20,000	6,667	6,644	33.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.58	33.93	10.41	26.98	7.32	11.43	1.60e+6	60.00	57.00	33.75	178,169	1778.63	5.26

Pole Num:	69W - 28930-2137	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.56	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024186 Deg	Longitude:	-84.455387 Deg	Elevation:	902.239085450167		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	60.3	0.0
Groundline	60.3	0.0
Vertical	28.4	259.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,917	254.0
Groundline	33,917	254.0
GL Allowable	61,940	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.0	138.0		83.9	232.7	85.1	300.0
? EHS 3/8 (Down)			29.9	68.7	232.7	76.1	280.0
? EHS 3/8 (Down)			23.6	52.6	232.7	59.1	320.0
? Single Helix Anchor	7.1	22.0		19.5	232.7	19.5	225.6
? EHS 3/8 (Sidewalk)			27.6	28.1	232.7	31.0	225.6
? Sidewalk Strut	6.0	22.0	20.4	46.6	232.7	46.6	225.6
? Single Helix Anchor	45.2	319.6		0.0	232.7	0.0	0.0
? EHS 3/8 (Span/Head)			21.3	0.0	232.7	0.0	0.0
? Single Helix Anchor	11.5	138.0		24.2	232.7	25.0	350.0
? EHS 1/4 (Down)			12.5	80.8	232.7	91.9	350.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 254.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,788	150.1	89,808	264.8	145.0	14,974	79	1	14,975	220.2
Comms	4,135	129.7	40,884	120.5	66.0	6,817	321	4	6,821	100.3
GuyBraces	-5,944	-186.4	-99,596	-293.7	-160.8	-16,606	29,590	351	-16,256	-239.1
Pole	146	4.6	1,551	4.6	2.5	259	1,443	17	276	4.1
Crossarms	38	1.2	705	2.1	1.1	118	380	5	122	1.8
Insulators	27	0.8	564	1.7	0.9	94	167	2	96	1.4
Pole Load	3,189	100.0	33,917	100.0	54.8	5,655	31,979	379	6,034	88.7
Pole Reserve Capacity			28,023		45.2	1,145			766	11.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 254.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	280	8.8	2,314	6.8	3.7	386	24,332	288	674	9.9
Unknown, COMMUNICATION	2,725	85.5	29,347	86.5	47.4	4,893	5,825	69	4,962	73.0
Pole	146	4.6	1,551	4.6	2.5	259	1,443	17	276	4.1
<Undefined>	38	1.2	705	2.1	1.1	118	380	5	122	1.8
Totals:	3,189	100.0	33,917	100.0	54.8	5,655	31,979	379	6,034	88.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	17.89	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	1	303	27,993
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	48.43	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	3	303	27,995
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	48.43	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	-2	303	27,989
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.64	6.30	0.3250	0.01	0.107	27.3	199.1	27.3	150	2,652	4	70	2,726
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.64	6.30	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	21,357	6	234	21,597
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	18.07	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	1	82	9,367
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	48.49	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	2	82	9,368
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	48.49	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	-1	82	9,365
										Totals:	134,924	15	1,459	136,399	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	16.38	6.72	1.3300	0.56	0.337	45.2	319.6	45.2	925	8,131	8	359	8,498
CATV	CATV 1.0	Unknown, COMMUNICATION	16.25	6.73	1.3300	0.33	0.337	27.3	199.1	27.3	150	1,824	7	107	1,938
Telco	TELE 1.5	Unknown, COMMUNICATION	15.90	6.75	1.5000	0.63	0.900	45.2	319.6	45.2	2,000	17,067	14	381	17,463

Telco	TELE 1.5	Unknown, COMMUNICATION	15.70	6.76	1.5000	0.37	0.900	27.3	199.1	27.4	150	1,762	12	113	1,887
Telco	TELE 1.5	Unknown, COMMUNICATION	15.27	6.79	1.5000	0.63	0.900	45.2	319.6	45.2	2,000	16,385	14	366	16,765
Telco	TELE 1.5	Unknown, COMMUNICATION	15.13	6.80	1.5000	0.37	0.900	27.3	199.1	27.4	150	1,697	12	109	1,819
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.40	6.90	0.6570	0.54	0.190	45.2	319.6	45.2	750	5,391	5	186	5,581
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.11	6.92	0.6570	0.31	0.190	27.3	199.1	27.3	150	1,471	4	55	1,529
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	12.45	6.95	0.6570	0.54	0.190	45.2	319.6	45.2	750	5,009	5	173	5,186
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	12.22	6.97	0.6570	0.31	0.190	27.3	199.1	27.3	150	1,371	4	51	1,427
Totals:											60,107	86	1,900	62,093	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		30.64	5.14	139.0	139.0	50.00	4.50	3.50	96.00	0	123	123
Normal	Crossarm		27.58	5.32	200.0	200.0	50.00	4.50	3.50	96.00	0	947	947
Totals:											0	1,071	1,071

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	0.00	319.0	180.0	3.00	3.80	12.75	7	134	142
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	45.00	235.5	180.0	3.00	3.80	12.75	46	134	180
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	-45.00	42.5	180.0	3.00	3.80	12.75	-32	134	103
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.64	0.00	259.3	169.3	2.00	3.00	3.19	2	10	12
Bolt	Single Bolt	Unknown, COMMUNICATION	16.38	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	16.25	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	15.90	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	15.70	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	15.27	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2

Bolt	Single Bolt	Unknown, COMMUNICATION	15.13	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	13.40	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	13.11	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	12.45	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	12.22	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	0.00	200.0	0.0	3.00	3.80	12.75	10	121	131
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	45.00	283.3	0.0	3.00	3.80	12.75	45	121	166
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	-45.00	116.7	0.0	3.00	3.80	12.75	-24	121	97
Totals:										80	777	857

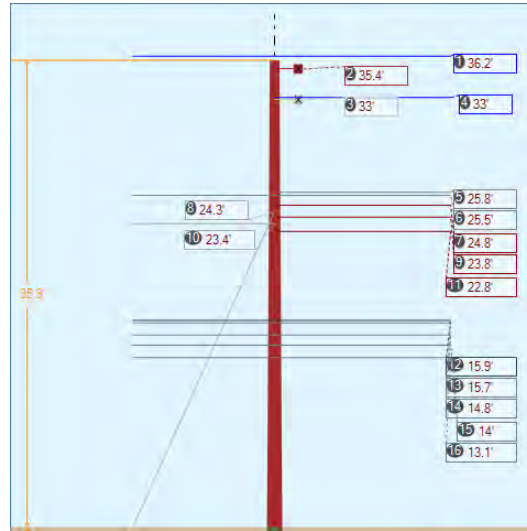
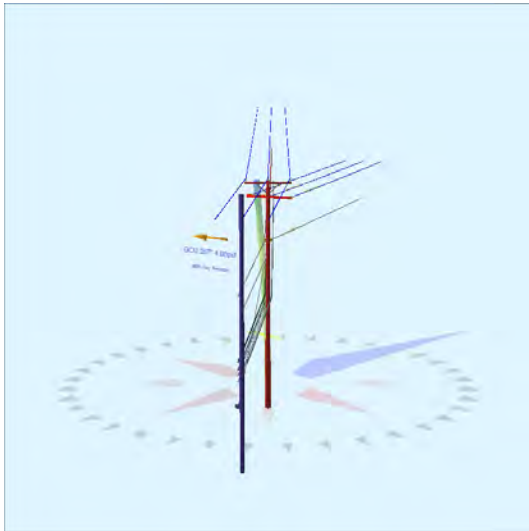
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.91	0.00	21.96	0.375	75.00	138.0	53.5	0.273	35.44	2.13
EHS 3/8	Down	KU, UTILITY	23.64	0.00	21.96	0.375	75.00	138.0	47.0	0.273	30.55	1.40
EHS 3/8	Sidewalk	KU, UTILITY	27.61	0.00	7.10	0.375	75.00	22.0	49.5	0.273	28.12	0.63
EHS 3/8	Span/Head	KU, UTILITY	21.29	21.29	45.19	0.375	75.00	319.6	0.0	0.273	43.36	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	12.45	0.00	11.51	0.25	75.00	138.0	47.1	0.121	15.20	1.04

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,554	9,595	9,527	7,662	5,662	-2,480	-72,997
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,187	7,443	7,289	5,327	4,975	-2,179	-50,797
EHS 3/8	Sidewalk	2.30e+7	15,400	0.90	13,860	700	4,293	3,903	3,899	2,967	2,531	-1,559	-10,152
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	231
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,499	4,999	4,836	3,542	3,293	-1,442	-17,548
Totals:										19,497	16,461	-7,660	-151,264

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.96	138.0	20,000	1.00	20,000	17,010	16,788	85.0
Single Helix Anchor			18.00	7.10	22.0	20,000	1.00	20,000	3,903	3,899	19.5
Single Helix Anchor			18.00	45.19	319.6	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor			18.00	11.51	138.0	20,000	1.00	20,000	4,999	4,836	25.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.98	34.23	9.36	26.44	6.69	10.37	1.60e+6	60.00	57.00	31.45	112,747	1126.04	3.52

Pole Num:	70W - 28930-2135	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.09	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024280 Deg	Longitude:	-84.455504 Deg	Elevation:	920.767840368862		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	61.5	23.3
Groundline	56.0	0.0
Vertical	1.5	20.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,495	307.7
Groundline	48,200	227.0
GL Allowable	88,915	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	14.0	155.5		3.1	257.0	23.4	40.0
? EHS 3/8 (Down)			24.3	4.5	257.0	37.1	40.0
? Single Helix Anchor	45.2	139.6		56.3	257.0	56.6	236.9
? EHS 3/8 (Span/Head)			23.4	81.2	257.0	89.9	236.9
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	480	20.7	14,365	29.8	16.2	1,096	427	4	1,100	16.2
Comms	1,033	44.5	15,666	32.5	17.6	1,195	881	8	1,203	17.7
GuyBraces	621	26.8	14,627	30.4	16.5	1,116	834	8	1,124	16.5
Pole	172	7.4	3,150	6.5	3.5	240	2,053	19	259	3.8
Crossarms	1	0.0	10	0.0	0.0	1	190	2	3	0.0
Insulators	11	0.5	381	0.8	0.4	29	118	1	30	0.4
Pole Load	2,318	100.0	48,200	100.0	54.2	3,678	4,504	42	3,719	54.7
Pole Reserve Capacity			40,715		45.8	3,123			3,081	45.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,113	48.0	29,355	60.9	33.0	2,240	1,331	12	2,252	33.1
Unknown, COMMUNICATION	1,033	44.5	15,684	32.5	17.6	1,197	929	9	1,205	17.7
Pole	172	7.4	3,150	6.5	3.5	240	2,053	19	259	3.8
<Undefined>	1	0.0	10	0.0	0.0	1	190	2	3	0.0
Totals:	2,318	100.0	48,200	100.0	54.2	3,678	4,504	42	3,719	54.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	5.44	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	1	1,141	3,522
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	5.44	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	0	349	3,922
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	-156	1,141	3,366
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	-46	349	3,876
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	157	1,141	3,679
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	46	349	3,968

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	18.34	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	-1	403	-5,725
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	48.59	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	-5	403	-5,728
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	48.59	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	4	403	-5,720
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.76	6.78	0.3250	0.05	0.107	54.6	335.5	54.6	450	-4,777	-8	314	-4,471
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.52	6.79	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	2,515	7	246	2,768
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.52	6.79	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	1,676	24	803	2,503
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.84	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	2,055	1	848	2,904
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.84	6.89	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	1,979	1	817	2,797
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.76	6.96	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	1,889	1	780	2,670
											Totals:	4,817	25	9,488	14,331

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	15.90	7.38	1.3300	0.56	0.337	45.2	139.6	45.2	925	861	22	340	1,223
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	15.90	7.38	1.3300	2.20	0.337	153.9	315.3	153.9	925	574	74	1,110	1,759
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.73	7.39	1.5000	2.60	0.900	153.9	315.3	153.9	2,000	1,227	-130	1,200	2,298
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.73	7.39	1.5000	0.63	0.900	45.2	139.6	45.2	2,000	1,841	-38	368	2,171
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.79	7.45	1.5000	0.63	0.900	45.2	139.6	45.2	2,000	1,731	38	346	2,115
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.79	7.45	1.5000	2.60	0.900	153.9	315.3	153.9	2,000	1,154	131	1,129	2,413
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.00	7.49	0.6570	0.53	0.190	45.2	139.6	45.2	750	614	13	189	816
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.00	7.49	0.6570	2.15	0.190	153.9	315.3	153.9	750	410	43	618	1,070
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	13.05	7.55	0.6570	0.53	0.190	45.2	139.6	45.2	750	573	13	176	762
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.05	7.55	0.6570	2.15	0.190	153.9	315.3	153.9	750	382	43	576	1,001
											Totals:	9,367	209	6,053	15,629

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.42	5.44	315.3	315.3	50.00	4.50	3.50	96.00	1	56	57	
Normal	Crossarm	33.04	5.59	335.5	335.5	50.00	4.50	3.50	96.00	-14	-33	-47	
										Totals:	-13	23	10

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	0.00	315.3	0.0	6.00	3.50	7.50	0	39	40		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	45.00	38.4	0.0	6.00	3.50	7.50	-43	39	-3		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	-45.00	232.2	0.0	6.00	3.50	7.50	43	39	82		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	0.00	335.5	0.0	3.00	3.80	12.75	-3	67	65		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	45.00	58.4	0.0	3.00	3.80	12.75	-23	67	44		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	-45.00	252.6	0.0	3.00	3.80	12.75	18	67	85		
Spool	Spool Insulator - 25 kV KU, UTILITY	25.76	0.00	65.5	335.5	2.00	3.00	3.19	-2	10	8		
Spool	Spool Insulator - 25 kV KU, UTILITY	25.52	0.00	227.5	137.5	2.00	3.00	3.19	2	10	12		
Spool	Spool Insulator - 25 kV KU, UTILITY	24.76	0.00	315.3	315.3	2.00	3.00	3.19	0	10	10		
Spool	Spool Insulator - 25 kV KU, UTILITY	23.84	0.00	315.3	315.3	2.00	3.00	3.19	0	10	10		
Spool	Spool Insulator - 25 kV KU, UTILITY	22.76	0.00	315.3	315.3	2.00	3.00	3.19	0	9	9		
Bolt	Single Bolt Unknown, COMMUNICATION	15.90	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt Unknown, COMMUNICATION	15.73	0.00	45.3	315.3	5.00	3.00	0.00	-6	0	-6		
Bolt	Single Bolt Unknown, COMMUNICATION	14.79	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Single Bolt Unknown, COMMUNICATION	14.00	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Single Bolt Unknown, COMMUNICATION	13.05	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
										Totals:	10	370	380

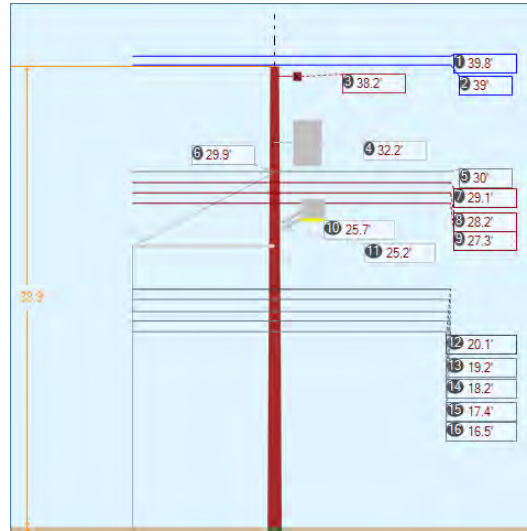
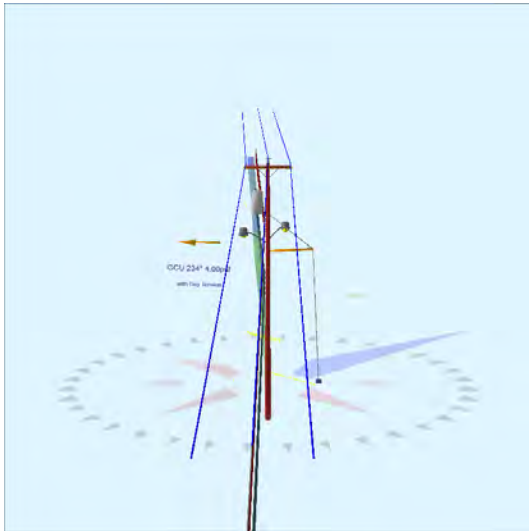
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	24.29	0.00	14.00	0.375	75.00	155.5	59.8	0.273	26.36	0.10
EHS 3/8	Span/Head	KU, UTILITY	23.35	23.35	45.19	0.375	75.00	139.6	0.0	0.273	43.32	3.07

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,142	4,675	623	539	313	99	2,518
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	12,455	11,323	11,259	0	11,259	507	12,074
Totals:										539	11,572	606	14,593

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	14.00	155.5	20,000	1.00	20,000	4,675	623	23.4
Single Helix Anchor			18.00	45.19	139.6	20,000	1.00	20,000	11,323	11,259	56.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.37	33.18	10.87	9.30	7.32	11.70	1.60e+6	60.00	57.00	35.91	307,964	3002.40	66.67

Pole Num:	71W - 28930-2129	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.09	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.47	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024577 Deg	Longitude:	-84.455875 Deg	Elevation:	914.843628308852		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.8	234.1
Groundline	34.8	234.1
Vertical	4.7	210.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	31,805	234.1
Groundline	31,805	234.1
GL Allowable	94,360	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	9.2	30.7		16.4	234.1	16.7	220.0
? EHS 3/8 (Sidewalk)			30.0	23.7	234.1	26.5	220.0
? Sidewalk Strut	8.0	30.7	23.8	99.7	234.1	101.2	220.0
System Capacity Summary:				Inadequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 239.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	922	41.9	21,527	67.7	22.8	2,195	537	5	2,200	32.3
Comms	827	37.6	11,310	35.6	12.0	1,153	1,146	10	1,163	17.1
GuyBraces	128	5.8	-7,875	-24.8	-8.4	-803	3,050	27	-776	-11.4
PowerEquipments	55	2.5	2,735	8.6	2.9	279	1,216	11	290	4.3
Pole	218	9.9	3,004	9.4	3.2	306	2,283	20	327	4.8
Crossarms	3	0.1	62	0.2	0.1	6	95	1	7	0.1
Streetlights	40	1.8	784	2.5	0.8	80	171	2	81	1.2
Insulators	9	0.4	258	0.8	0.3	26	110	1	27	0.4
Pole Load	2,199	100.0	31,805	100.0	33.7	3,243	8,608	77	3,320	48.8
Pole Reserve Capacity			62,555		66.3	3,557			3,480	51.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 239.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,152	52.4	17,409	54.7	18.5	1,775	5,036	45	1,820	26.8
Unknown, COMMUNICATION	827	37.6	11,330	35.6	12.0	1,155	1,194	11	1,166	17.1
Pole	218	9.9	3,004	9.4	3.2	306	2,283	20	327	4.8
<Undefined>	3	0.1	62	0.2	0.1	6	95	1	7	0.1
Totals:	2,199	100.0	31,805	100.0	33.7	3,243	8,608	77	3,320	48.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	0.00	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,892	0	1,414	-19,478
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	0.00	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	23,392	0	953	24,345
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,501	146	1,387	-18,967
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	22,954	100	935	23,989

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,501	-156	1,387	-19,270
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	22,954	-107	935	23,783
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.02	6.69	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-15,759	22	1,066	-14,670
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.02	6.69	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	17,644	15	719	18,379
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.74	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-19,308	28	1,125	-18,155
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.74	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	21,619	19	759	22,396
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.79	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-18,737	28	1,092	-17,617
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.79	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	20,979	19	736	21,735
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.35	6.84	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-18,142	28	1,057	-17,056
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.35	6.84	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	20,313	19	713	21,045
Totals:											16,016	162	14,280	30,457	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.10	7.27	1.3300	2.22	0.337	153.9	135.3	153.9	925	-5,795	71	1,584	-4,140
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.10	7.27	1.3300	1.40	0.337	105.1	313.6	105.1	925	6,489	49	1,068	7,605
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.24	7.32	1.5000	2.61	0.900	153.9	135.3	153.9	2,000	-11,996	125	1,657	-10,215
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.24	7.32	1.5000	1.62	0.900	105.1	313.6	105.1	2,000	13,432	85	1,117	14,634
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.22	7.38	1.5000	2.61	0.900	153.9	135.3	153.9	2,000	-11,361	126	1,569	-9,666
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.22	7.38	1.5000	1.62	0.900	105.1	313.6	105.1	2,000	12,721	86	1,058	13,865
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	7.43	0.6570	2.19	0.190	153.9	135.3	153.9	750	-4,073	41	868	-3,164
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	7.43	0.6570	1.38	0.190	105.1	313.6	105.1	750	4,560	28	585	5,174
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.52	7.49	0.6570	2.19	0.190	153.9	135.3	153.9	750	-3,862	42	823	-2,997
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.52	7.49	0.6570	1.38	0.190	105.1	313.6	105.1	750	4,324	28	555	4,907
Totals:												4,438	681	10,883	16,002

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	32.19	22.06	220.0	220.0	640.00	47.00	--	24.00	--	2,111	1,758	3,869
Totals:												2,111	1,758	3,869

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	38.23	5.45	134.5	134.5	50.00	4.50	3.50	96.00	-11	99	88		
Totals:												-11	99	88

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	25.72	4.44	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-123	508	385
General	Streetlight - 3 ft. Arm	KU, UTILITY	25.19	4.47	220.0	220.0	45.00	24.00	20.00	3.00	36.00	226	498	724
Totals:												104	1,006	1,109

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.91	0.00	0.0	0.0	13.00	9.00	10.50	0	180	180
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.41	45.00	217.5	0.0	6.00	3.50	7.50	40	49	89
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.41	-45.00	51.4	0.0	6.00	3.50	7.50	-43	49	6
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.02	0.00	224.5	134.5	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.11	0.00	224.5	134.5	2.00	3.00	3.19	2	13	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.25	0.00	224.5	134.5	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.35	0.00	224.5	134.5	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	20.10	0.00	225.3	135.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.24	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.22	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	17.42	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.52	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Totals:										34	331	365

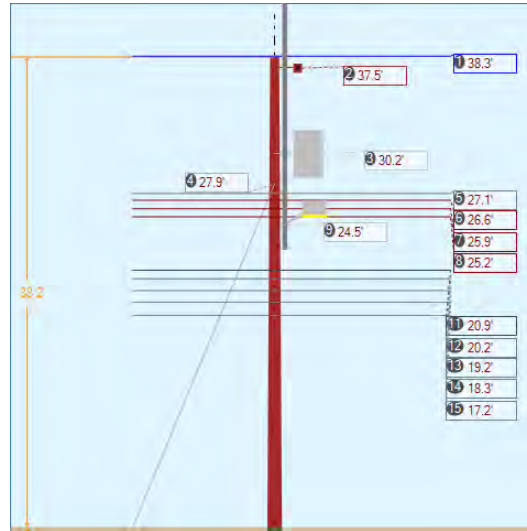
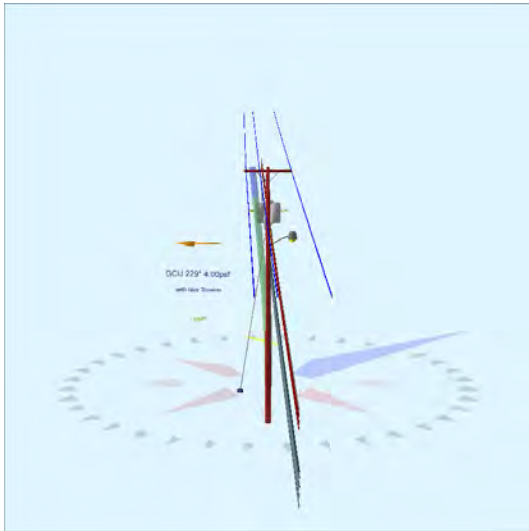
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Sidewalk	KU, UTILITY	29.95	0.00	9.18	0.375	75.00	30.7	37.3	0.273	32.13	0.53

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8 Sidewalk	2.30e+7	15,400	0.90	13,860	700	3,670	3,336	3,289	1,991	2,617	-2,301	-11,142	
Totals:										1,991	2,617	-2,301	-11,142

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.18	30.7	20,000	1.00	20,000	3,336	3,289	16.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.28	33.91	10.87	14.27	7.32	11.93	1.60e+6	60.00	57.00	38.91	185,035	1831.54	21.28

Pole Num:	72W - 28930-2119	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.80	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.20	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024776 Deg	Longitude:	-84.456110 Deg	Elevation:	912.909039302674		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.8	0.0
Groundline	31.8	0.0
Vertical	3.2	24.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,575	234.0
Groundline	28,575	234.0
GL Allowable	92,389	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	6.1	186.7		0.0	228.6	17.8	30.0
? EHS 3/8 (Down)			27.9	0.0	228.6	28.2	30.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 234.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	314	25.8	9,754	34.1	10.6	719	451	4	723	10.6
Comms	478	39.3	8,692	30.4	9.4	641	963	9	649	9.6
GuyBraces	4	0.4	120	0.4	0.1	9	9	0	9	0.1
PowerEquipments	138	11.3	4,770	16.7	5.2	352	2,603	24	375	5.5
Pole	213	17.5	4,075	14.3	4.4	300	2,221	20	321	4.7
Crossarms	2	0.1	72	0.3	0.1	5	95	1	6	0.1
Streetlights	20	1.6	245	0.9	0.3	18	86	1	19	0.3
Risers	42	3.5	672	2.4	0.7	50	46	0	50	0.7
Insulators	6	0.5	175	0.6	0.2	13	97	1	14	0.2
Pole Load	1,216	100.0	28,575	100.0	30.9	2,106	6,571	60	2,166	31.9
Pole Reserve Capacity			63,814		69.1	4,694			4,634	68.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 234.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	524	43.1	15,764	55.2	17.1	1,162	3,244	29	1,191	17.5
Unknown, COMMUNICATION	478	39.3	8,664	30.3	9.4	639	1,011	9	648	9.5
Pole	213	17.5	4,075	14.3	4.4	300	2,221	20	321	4.7
<Undefined>	2	0.1	72	0.3	0.1	5	95	1	6	0.1
Totals:	1,216	100.0	28,575	100.0	30.9	2,106	6,571	60	2,166	31.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	18.81	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	44	948	-14,189
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	18.81	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	48	1,017	15,958
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	-103	948	-14,336
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	-110	1,017	15,800

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	107	948	-14,126
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	115	1,017	16,026
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.13	6.82	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-10,758	-16	672	-10,102
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.13	6.82	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	10,554	-17	721	11,258
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.56	6.85	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-13,309	-19	716	-12,612
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.56	6.85	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	13,057	-21	768	13,804
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.87	6.89	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-12,966	-20	698	-12,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.87	6.89	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	12,720	-21	748	13,447
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.22	6.93	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-12,637	-20	680	-11,977
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.22	6.93	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	12,397	-21	729	13,105
											Totals:	-1,805	-53	11,626	9,768

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.87	7.19	1.3300	1.40	0.337	105.1	133.6	105.1	925	-4,547	-49	1,147	-3,449
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.87	7.19	1.3300	1.52	0.337	112.6	313.8	112.6	925	4,460	-52	1,230	5,638
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	7.23	1.5000	1.62	0.900	105.1	133.6	105.1	2,000	-9,507	-85	1,212	-8,380
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	7.23	1.5000	1.76	0.900	112.6	313.8	112.6	2,000	9,326	-91	1,300	10,535
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.23	7.28	1.5000	1.62	0.900	105.1	133.6	105.1	2,000	-9,058	-86	1,155	-7,989
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.23	7.28	1.5000	1.76	0.900	112.6	313.8	112.6	2,000	8,886	-92	1,238	10,032
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.27	7.34	0.6570	1.39	0.190	105.1	133.6	105.1	750	-3,227	-28	635	-2,621
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.27	7.34	0.6570	1.50	0.190	112.6	313.8	112.6	750	3,166	-30	681	3,817
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.22	7.40	0.6570	1.39	0.190	105.1	133.6	105.1	750	-3,041	-29	598	-2,471
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.22	7.40	0.6570	1.50	0.190	112.6	313.8	112.6	750	2,983	-31	641	3,594
Totals:												-557	-574	9,836	8,705

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.18	22.14	315.0	315.0	640.00	47.00	--	24.00	--	352	1,647	2,000
Transformer	1PH-25KVA	KU, UTILITY	30.18	21.14	315.0	315.0	365.00	39.00	--	22.00	--	271	2,506	2,777
Totals:												624	4,154	4,777

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm		37.46	5.45	313.7	313.7	50.00	4.50	3.50	96.00	8	64	72	
Totals:												8	64	72

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	24.52	4.47	50.0	50.0	45.00	24.00	20.00	3.00	36.00	-239	484	245
Totals:												-239	484	245

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	24.20	6.09	360.0	360.0	24.20	290.45	4.00	4.00	290.45	-7	680	673
Totals:												-7	680	673

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	-18.00	240.6	0.0	6.00	3.50	7.50	18	48	66
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	45.00	36.8	0.0	6.00	3.50	7.50	-41	48	7
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	-45.00	230.6	0.0	6.00	3.50	7.50	43	48	91
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.13	0.00	43.7	313.7	2.00	3.00	3.19	-2	13	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.56	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.87	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.22	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10

Bolt	Three Bolt	Unknown, COMMUNICATION	20.87	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.19	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.23	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.27	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.22	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Totals:										-17	192	175

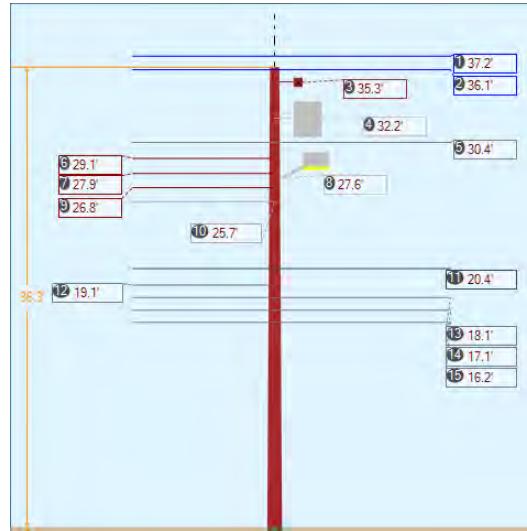
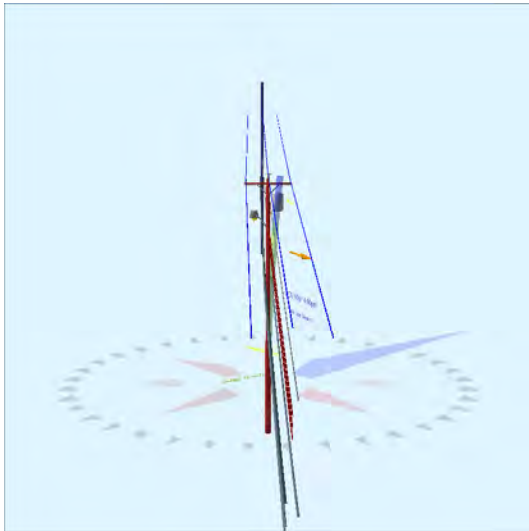
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	27.90	0.00	6.10	0.375	75.00	186.7	77.4	0.273	26.99	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,908	3,553	0	0	0	0	121
Totals:										0	0	0	121

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	6.10	186.7	20,000	1.00	20,000	3,553	0	17.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.81	33.72	10.85	12.18	7.32	11.85	1.60e+6	60.00	57.00	38.20	206,127	2053.39	31.25

Pole Num:	73W - 28930-2115	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.68	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025024 Deg	Longitude:	-84.456404 Deg	Elevation:	924.211746379987		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	55.7	25.7
Groundline	44.9	0.0
Vertical	1.8	134.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,285	124.8
Groundline	28,411	95.7
GL Allowable	87,276	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.4	314.3		51.6	108.6	51.7	130.0
? EHS 3/8 (Span/Head)			25.7	74.4	108.6	82.1	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 95.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,663	608.8	187,545	660.1	214.9	14,573	370	3	14,576	214.4
Comms	2,209	201.8	41,973	147.7	48.1	3,261	884	8	3,270	48.1
GuyBraces	-8,060	-736.5	-207,794	-731.4	-238.1	-16,146	29	0	-16,146	-237.4
PowerEquipments	35	3.2	1,687	5.9	1.9	131	636	6	137	2.0
Pole	196	17.9	3,591	12.6	4.1	279	2,060	19	298	4.4
Crossarms	24	2.2	820	2.9	0.9	64	95	1	65	0.9
Streetlights	19	1.8	297	1.0	0.3	23	86	1	24	0.4
Insulators	9	0.8	293	1.0	0.3	23	110	1	24	0.4
Pole Load	1,094	100.0	28,411	100.0	32.6	2,208	4,272	40	2,248	33.1
Pole Reserve Capacity			58,865		67.4	4,592			4,552	66.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 95.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-1,334	-121.9	-17,962	-63.2	-20.6	-1,396	1,184	11	-1,384	-20.4
Unknown, COMMUNICATION	2,209	201.8	41,962	147.7	48.1	3,261	932	9	3,269	48.1
Pole	196	17.9	3,591	12.6	4.1	279	2,060	19	298	4.4
<Undefined>	24	2.2	820	2.9	0.9	64	95	1	65	0.9
Totals:	1,094	100.0	28,411	100.0	32.6	2,208	4,272	40	2,248	33.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.20	0.00	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-63,659	0	306	-63,353
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.20	0.00	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	64,100	0	265	64,365
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	62,236	60	257	62,554
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-61,808	67	297	-61,443

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	62,236	-82	257	62,412
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-61,808	-92	297	-61,603
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.38	6.51	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	52,334	10	216	52,560
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.38	6.51	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-51,973	12	250	-51,712
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.12	6.59	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	63,391	16	226	63,632
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.93	6.66	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	60,797	16	216	61,029
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.81	6.72	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	58,369	16	208	58,593
Totals:											184,214	24	2,796	187,034	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.43	7.10	1.3300	1.50	0.337	112.6	133.8	112.6	925	19,330	-33	323	19,620
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.43	7.10	1.3300	1.72	0.337	126.4	314.3	126.4	925	-19,197	-36	373	-18,861
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.11	7.18	1.5000	1.75	0.900	112.6	133.8	112.6	2,000	39,093	57	330	39,480
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.14	7.24	1.5000	1.75	0.900	112.6	133.8	112.6	2,000	37,117	-58	313	37,372
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.14	7.24	1.5000	2.02	0.900	126.4	314.3	126.4	2,000	-36,861	-65	362	-36,564
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.14	7.30	0.6570	1.44	0.190	112.6	133.8	112.6	750	13,149	-19	171	13,301
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.14	7.30	0.6570	1.65	0.190	126.4	314.3	126.4	750	-13,058	-21	198	-12,882
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.18	7.35	0.6570	1.44	0.190	112.6	133.8	112.6	750	12,412	-19	162	12,554
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.18	7.35	0.6570	1.65	0.190	126.4	314.3	126.4	750	-12,326	-22	187	-12,161
		COMMUNICATION													
Totals:											39,657	-216	2,417	41,858	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Transformer	1PH-15KVA	KU, UTILITY	32.16	20.91	35.0	35.0	335.00	34.00	--	22.00	--	543	1,140	1,683
Totals:												543	1,140	1,683

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		35.30	5.47	314.0	314.0	50.00	4.50	3.50	96.00	-34	852	818	
Totals:											-34	852	818

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	27.59	4.18	280.0	280.0	45.00	24.00	20.00	3.00	36.00	-238	533	296
Totals:											-238	533	296

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.32	0.00	0.0	0.0	13.00	9.00	10.50	0	165	165
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.49	45.00	37.1	0.0	6.00	3.50	7.50	22	44	67
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.49	-45.00	231.0	0.0	6.00	3.50	7.50	-31	44	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.38	0.00	44.0	314.0	2.00	3.00	3.19	1	14	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.12	0.00	133.8	133.8	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.93	0.00	133.8	133.8	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.81	0.00	133.8	133.8	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	20.43	0.00	224.0	314.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	19.11	0.00	43.8	133.8	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	18.14	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	17.14	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	16.18	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4
Totals:										-13	305	292

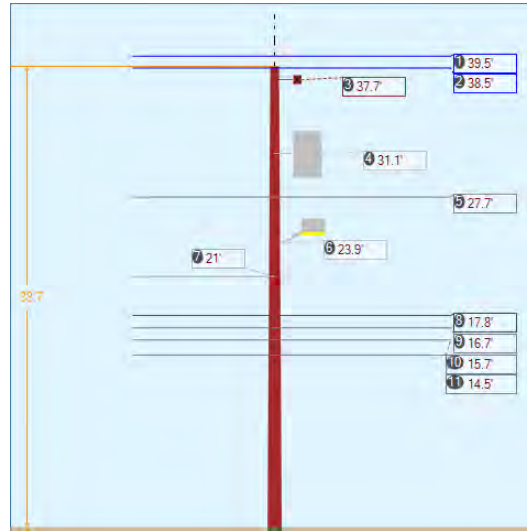
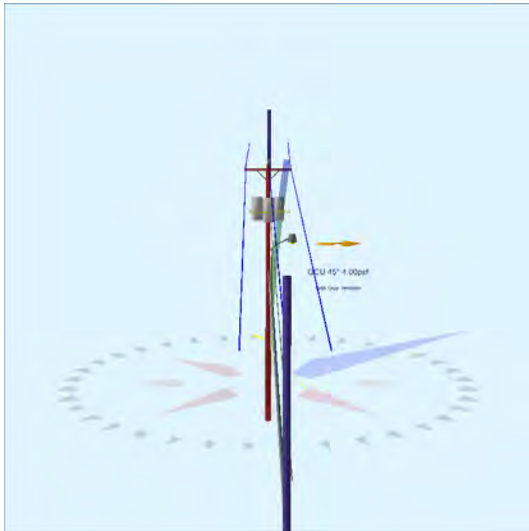
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.71	25.71	126.35	0.375	75.00	314.3	0.0	0.273	124.49	8.09

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	11,376	10,342	10,317	0	10,317	-8,068	-207,228
Totals:									0	10,317	-8,068	-207,228

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	126.35	314.3	20,000	1.00	20,000	10,342	10,317	51.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.44	33.43	10.73	9.46	7.32	11.63	1.60e+6	60.00	57.00	36.32	240,941	2373.07	55.56

Pole Num:	74W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.37	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025242 Deg	Longitude:	-84.456705 Deg	Elevation:	919.426969304131		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.7	0.0
Groundline	31.7	0.0
Vertical	3.8	224.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,788	43.0
Groundline	28,788	43.0
GL Allowable	93,641	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.4	134.2		0.0	44.8	1.9	310.0
? EHS 3/8 (Span/Head)			21.0	0.0	44.8	3.0	310.0
? Single Helix Anchor	36.3	315.2		0.7	44.8	3.7	140.0
? EHS 3/8 (Span/Head)			21.0	1.0	44.8	5.9	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	294	26.0	10,666	37.1	11.4	772	176	2	774	11.4
Comms	382	33.7	6,597	22.9	7.0	478	497	4	482	7.1
GuyBraces	47	4.1	988	3.4	1.1	72	38	0	72	1.1
PowerEquipments	164	14.5	5,243	18.2	5.6	380	3,648	33	412	6.1
Pole	217	19.1	4,216	14.7	4.5	305	2,261	20	326	4.8
Crossarms	1	0.1	48	0.2	0.1	3	95	1	4	0.1
Streetlights	20	1.8	713	2.5	0.8	52	86	1	52	0.8
Insulators	8	0.7	316	1.1	0.3	23	89	1	24	0.3
Pole Load	1,132	100.0	28,788	100.0	30.7	2,084	6,890	62	2,146	31.6
Pole Reserve Capacity			64,853		69.3	4,716			4,654	68.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	533	47.1	17,903	62.2	19.1	1,296	3,999	36	1,332	19.6
Unknown, COMMUNICATION	382	33.7	6,621	23.0	7.1	479	535	5	484	7.1
Pole	217	19.1	4,216	14.7	4.5	305	2,261	20	326	4.8
<Undefined>	1	0.1	48	0.2	0.1	3	95	1	4	0.1
Totals:	1,132	100.0	28,788	100.0	30.7	2,084	6,890	62	2,146	31.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.53	0.00	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-2,033	0	1,202	-831
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.53	0.00	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,392	0	345	3,737
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,981	129	1,171	-681
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,305	37	336	3,679

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,981	-128	1,171	-938
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,305	-37	336	3,605
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.72	6.81	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,425	19	842	-563
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.72	6.81	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	2,378	6	242	2,625
Totals:											4,960	26	5,647	10,634	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.78	7.40	1.3300	1.74	0.337	126.4	134.3	126.4	925	-502	61	1,199	758
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.78	7.40	1.3300	0.45	0.337	36.3	315.2	36.3	925	838	18	344	1,200
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.74	7.46	1.5000	2.03	0.900	126.4	134.3	126.4	2,000	-1,022	108	1,233	319
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.74	7.46	1.5000	0.50	0.900	36.3	315.2	36.3	2,000	1,705	31	354	2,091
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.72	7.52	0.6570	1.73	0.190	126.4	134.3	126.4	750	-360	35	670	346
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.72	7.52	0.6570	0.42	0.190	36.3	315.2	36.3	750	601	10	193	803
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.46	7.59	0.6570	1.73	0.190	126.4	134.3	126.4	750	-331	36	616	321
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.46	7.59	0.6570	0.42	0.190	36.3	315.2	36.3	750	552	10	177	740
		COMMUNICATION													
Totals:											1,481	309	4,787	6,577	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	31.09	22.11	130.0	130.0	640.00	47.00	--	24.00	--	115	5,112	5,227
Totals:											115	5,112	5,227	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		37.71	5.47	314.7	314.7	50.00	4.50	3.50	96.00	1	46	47
Totals:											1	46	47

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.87	4.54	35.0	35.0	45.00	24.00	20.00	3.00	36.00	238	473	711
Totals:												238	473	711

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.65	0.00	0.0	0.0	13.00	9.00	10.50	0	179	179	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.89	45.00	37.8	0.0	6.00	3.50	7.50	43	48	91	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.89	-45.00	231.7	0.0	6.00	3.50	7.50	-43	48	6	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.72	0.00	44.7	314.7	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.78	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.74	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.72	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.46	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Totals:											26	289	316

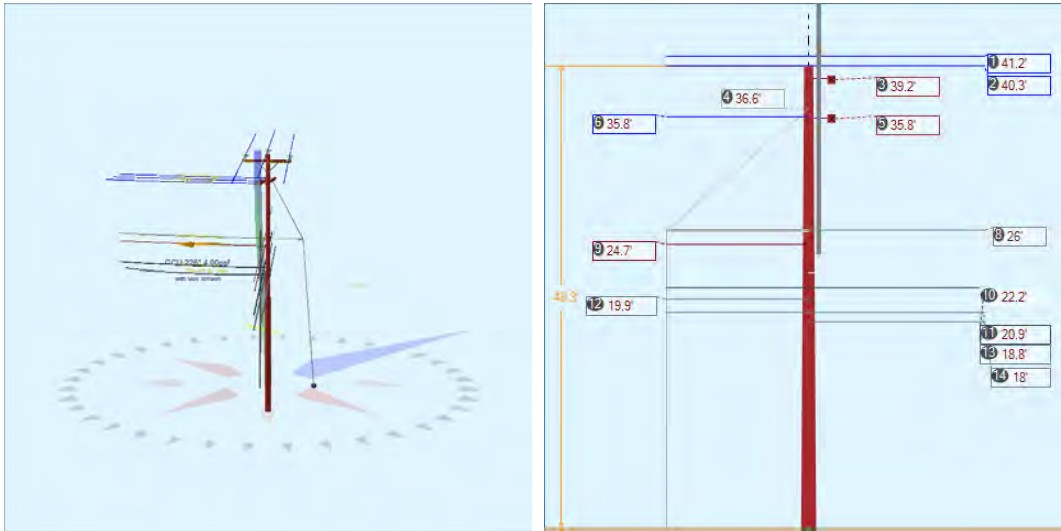
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	21.04	21.04	126.35	0.375	75.00	134.2	0.0	0.273	124.46	0.00
EHS 3/8	Span/Head	KU, UTILITY	21.04	21.04	36.32	0.375	75.00	315.2	0.0	0.273	34.43	0.03

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	420	382	0	0	0	0	675	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	815	741	140	0	140	6	310	
Totals:											0	140	6	985

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	126.35	134.2	20,000	1.00	20,000	382	0	1.9
Single Helix Anchor			18.00	36.32	315.2	20,000	1.00	20,000	741	140	3.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.35	33.93	10.84	12.82	7.32	11.90	1.60e+6	60.00	57.00	38.65	181,860	1813.05	26.32

Pole Num:	75W - 28930-2111	Pole Length / Class:	45 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.72	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.01	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025322 Deg	Longitude:	-84.456783 Deg	Elevation:	923.358725241214		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.8	0.0
Groundline	23.8	0.0
Vertical	3.8	29.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,392	222.7
Groundline	28,392	222.7
GL Allowable	123,745	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	8.0	50.0		14.2	225.6	14.2	231.2
? EHS 3/8 (Sidewalk)			36.6	20.4	225.6	22.5	231.2
? Sidewalk Strut	6.0	50.0	25.9	47.7	225.6	47.8	231.2
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 222.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,198	66.2	29,342	103.4	23.7	2,037	125	1	2,038	30.0
Comms	329	18.2	5,367	18.9	4.3	373	325	2	375	5.5
GuyBraces	-78	-4.3	-13,233	-46.6	-10.7	-919	3,723	28	-891	-13.1
Pole	247	13.6	3,917	13.8	3.2	272	2,819	21	293	4.3
Crossarms	66	3.6	1,881	6.6	1.5	131	285	2	133	2.0
Risers	28	1.5	431	1.5	0.4	30	52	0	30	0.4
Insulators	22	1.2	688	2.4	0.6	48	146	1	49	0.7
Pole Load	1,811	100.0	28,392	100.0	22.9	1,971	7,476	56	2,027	29.8
Pole Reserve Capacity			95,353		77.1	4,829			4,773	70.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 222.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,170	64.6	17,221	60.7	13.9	1,196	3,999	30	1,226	18.0
Unknown, COMMUNICATION	329	18.2	5,373	18.9	4.3	373	373	3	376	5.5
Pole	247	13.6	3,917	13.8	3.2	272	2,819	21	293	4.3
<Undefined>	66	3.6	1,881	6.6	1.5	131	285	2	133	2.0
Totals:	1,811	100.0	28,392	100.0	22.9	1,971	7,476	56	2,027	29.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	41.16	0.00	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	7,055	0	367	7,422
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	41.16	0.00	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-7,055	0	359	-6,696
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	18.76	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	2	10	6,796
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	48.75	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	0	10	6,794
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	48.75	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	1	10	6,795

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	4,448	6	232	4,685
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.01	0.107	25.9	236.7	25.9	150	4,911	4	8	4,923
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-4,448	6	226	-4,216
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.71	7.46	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	4,234	5	220	4,459
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.71	7.46	0.3250	0.01	0.107	25.9	236.7	25.9	150	4,675	4	7	4,685
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	6,910	38	360	7,308
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-6,910	37	351	-6,522
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	6,910	-37	360	7,234
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-6,910	-36	351	-6,595
Totals:											34,168	32	2,872	37,072	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Overlashed Bundle	1/4" EHS	Unknown,	22.23	7.62	0.2500	0.02	0.121	36.3	317.2	36.3	1,800	-4,072	0	183	-3,889
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.92	7.77	1.5000	0.51	0.900	37.2	137.2	37.2	2,000	4,055	-19	431	4,466
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.92	7.77	1.5000	0.35	0.900	25.9	236.7	25.9	150	3,770	-13	14	3,770
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.77	7.84	1.5000	0.51	0.900	37.2	137.2	37.2	2,000	3,819	33	406	4,258
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.77	7.84	1.5000	0.50	0.900	36.3	317.2	36.3	2,000	-3,819	32	396	-3,390
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.96	7.89	1.5000	0.50	0.900	36.3	317.2	36.3	2,000	-3,655	-3	379	-3,279
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.46	0.337	37.2	137.2	37.2	925	1,971	19	414	2,404
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.31	0.337	25.9	236.7	25.9	150	3,962	13	13	3,989
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.45	0.337	36.3	317.2	36.3	925	-1,971	18	405	-1,548
	COMMUNICATION														
Totals:											4,059	80	2,642	6,781	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		35.85	6.01	236.7	236.7	50.00	4.50	3.50	96.00	0	2,298	2,298
Normal	Crossarm		39.25	5.79	142.0	142.0	50.00	4.50	3.50	96.00	7	71	78
Totals:											7	2,369	2,377

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 200.0°	Riser	KU, UTILITY	27.54	6.57	200.0	200.0	27.54	330.46	4.00	4.00	330.46	35	510	545
Totals:											35	510	545	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	40.28	0.00	0.0	0.0	13.00	9.00	10.50	0	187	187	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	0.00	236.7	0.0	3.00	3.80	12.75	9	84	93	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	45.00	319.1	0.0	3.00	3.80	12.75	3	84	88	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	-45.00	154.3	0.0	3.00	3.80	12.75	14	84	98	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.96	0.00	230.4	140.4	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	186.9	96.9	2.00	3.00	3.19	2	11	13	
Bolt	Single Bolt	Unknown, COMMUNICATION	22.23	0.00	317.2	407.2	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.92	0.00	96.9	186.9	5.00	3.00	0.00	-4	0	-4	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.77	0.00	227.2	227.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.96	0.00	317.2	407.2	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.94	0.00	230.0	140.0	5.00	3.00	0.00	6	0	6	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.44	45.00	224.7	0.0	13.00	9.00	10.50	93	182	275	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.44	-45.00	59.3	0.0	13.00	9.00	10.50	-89	182	93	
Totals:											42	827	869

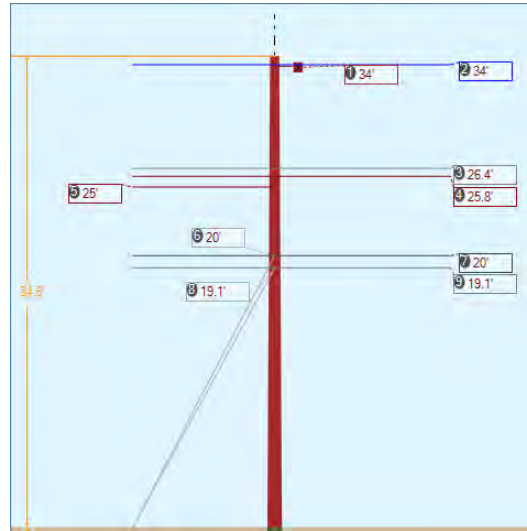
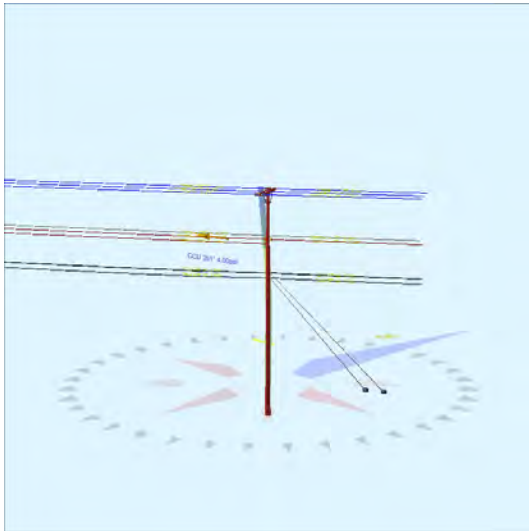
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Sidewalk	KU, UTILITY	36.55	0.00	8.00	0.375	75.00	50.0	59.8	0.273	36.54	0.64

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Sidewalk	2.30e+7	15,400	0.90	13,860	700	3,118	2,835	2,831	2,446	1,424	-1,413	-16,720
Totals:										2,446	1,424	-1,413	-16,720

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	8.00	50.0	20,000	1.00	20,000	2,835	2,831	14.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.77	34.33	11.76	14.19	7.96	13.06	1.60e+6	60.00	57.00	40.28	197,478	1967.33	26.32

Pole Num:	76W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025288 Deg	Longitude:	-84.456881 Deg	Elevation:	918.994880949127		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	62.2	20.0
Groundline	44.6	0.0
Vertical	4.1	19.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,943	255.0
Groundline	23,629	340.1
GL Allowable	68,854	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.4	57.7		18.8	260.5	18.8	255.6
? EHS 1/4 (Down)			20.0	62.8	260.5	69.1	255.6
? Single Helix Anchor	17.1	56.2		14.2	260.5	14.6	210.0
? EHS 1/4 (Down)			19.1	47.4	260.5	53.6	210.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 340.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-175	-16.4	-1,856	-7.9	-2.7	-173	194	2	-170	-2.5
Comms	191	18.0	3,918	16.6	5.7	364	253	3	367	5.4
GuyBraces	1,021	96.1	21,219	89.8	30.8	1,973	7,182	79	2,052	30.2
Pole	32	3.0	598	2.5	0.9	56	1,663	18	74	1.1
Crossarms	-12	-1.2	-442	-1.9	-0.6	-41	190	2	-39	-0.6
Insulators	6	0.5	192	0.8	0.3	18	122	1	19	0.3
Pole Load	1,062	100.0	23,629	100.0	34.3	2,197	9,604	106	2,303	33.9
Pole Reserve Capacity			45,225		65.7	4,603			4,497	66.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 340.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-169	-15.9	-1,664	-7.0	-2.4	-155	278	3	-152	-2.2
Unknown, COMMUNICATION	1,212	114.1	25,137	106.4	36.5	2,337	7,473	83	2,419	35.6
Pole	32	3.0	598	2.5	0.9	56	1,663	18	74	1.1
<Undefined>	-12	-1.2	-442	-1.9	-0.6	-41	190	2	-39	-0.6
Totals:	1,062	100.0	23,629	100.0	34.3	2,197	9,604	106	2,303	33.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	7.62	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	0	83	17,274
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	45.89	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	2	83	17,275
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	45.39	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	-2	83	17,272
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	17.88	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	-1	270	-14,129
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	48.65	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	6	270	-14,122
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	48.19	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	-7	270	-14,134

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.37	6.33	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	13,335	4	65	13,403
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.37	6.33	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-11,169	13	210	-10,946
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.80	6.36	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	13,043	1	63	13,107
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.36	0.3980	0.12	0.145	91.3	238.9	91.3	2,128	-13,804	-3	223	-13,584
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.00	6.41	0.3980	0.12	0.145	91.3	238.9	91.3	2,128	-13,376	-3	216	-13,163
Totals:											-3,594	9	1,838	-1,747	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.96	6.70	1.3300	1.18	0.337	91.3	238.9	91.3	925	-4,642	-8	352	-4,298
Telco	TELE 1.5	Unknown, COMMUNICATION	19.07	6.75	1.5000	0.35	0.900	25.9	56.7	25.9	2,000	11,450	5	113	11,568
Telco	TELE 1.5	Unknown, COMMUNICATION	19.07	6.75	1.5000	1.37	0.900	91.3	238.9	91.3	2,000	-9,590	-14	367	-9,236
CATV	CATV 1.0	Unknown, COMMUNICATION	19.96	6.70	1.3300	0.31	0.337	25.9	56.7	25.9	925	5,544	2	109	5,654
Totals:											2,761	-15	941	3,688	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	34.00	5.13	237.8	237.8	50.00	4.50	3.50	96.00	0	-416	-416	
Totals:											0	-416	-416

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.00	0.00	237.8	-181.1	3.00	3.80	12.75	2	29	31
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.00	45.00	321.3	-181.1	3.00	3.80	12.75	44	29	73
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.00	-45.00	154.3	-181.1	3.00	3.80	12.75	-40	29	-11
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.00	0.00	237.8	1.1	3.00	3.80	12.75	-3	29	26
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.00	45.00	321.3	1.1	3.00	3.80	12.75	38	29	68
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.00	-45.00	154.3	1.1	3.00	3.80	12.75	-45	29	-16

Spool	Spool Insulator - 25 kV	KU, UTILITY	26.37	0.00	327.8	237.8	2.00	3.00	3.19	2	2	4
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	56.7	56.7	2.00	3.00	3.19	0	2	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	238.9	238.9	2.00	3.00	3.19	0	2	2
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.00	0.00	238.9	238.9	2.00	3.00	3.19	0	2	2
Bolt	Single Bolt	Unknown, COMMUNICATION	19.96	0.00	238.9	328.9	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.07	0.00	56.7	146.7	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.07	0.00	238.9	238.9	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.96	0.00	58.9	328.9	5.00	3.00	0.00	1	0	1
Totals:										-3	184	181

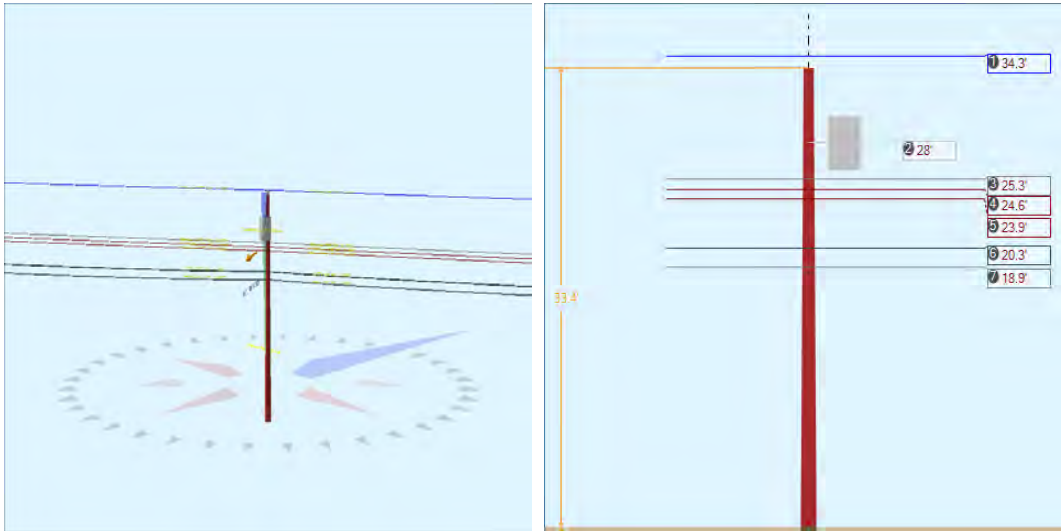
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4 Down	Unknown, COMMUNICATION	19.96	0.00	20.37	0.25	75.00	57.7	44.3	0.121	26.77	1.43
EHS 1/4 Down	Unknown, COMMUNICATION	19.07	0.00	17.12	0.25	75.00	56.2	47.9	0.121	23.89	0.96

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	4,134	3,758	3,756	2,622	2,690	574	11,383
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	3,206	2,915	2,835	2,105	1,900	455	8,590
Totals:									4,727	4,590	1,029	19,973

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	20.37	57.7	20,000	1.00	20,000	3,758	3,756	18.8
Single Helix Anchor		18.00	17.12	56.2	20,000	1.00	20,000	2,915	2,835	14.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.63	33.21	9.97	13.02	6.69	10.74	1.60e+6	60.00	57.00	34.63	234,937	2342.34	24.39

Pole Num:	77W - 28930-2109	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.77	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025160 Deg	Longitude:	-84.457145 Deg	Elevation:	918.682392152408		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.8	147.9
Groundline	30.8	147.9
Vertical	12.5	147.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,824	147.9
Groundline	24,824	147.9
GL Allowable	82,108	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 148.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	411	42.1	11,161	45.0	13.6	921	268	3	924	13.6
Comms	321	32.9	6,567	26.5	8.0	542	482	5	547	8.0
PowerEquipments	55	5.6	3,776	15.2	4.6	312	1,216	12	324	4.8
Pole	182	18.7	3,111	12.5	3.8	257	1,845	18	275	4.0
Insulators	6	0.6	208	0.8	0.3	17	55	1	18	0.3
Pole Load	974	100.0	24,824	100.0	30.2	2,049	3,866	38	2,087	30.7
Pole Reserve Capacity			57,284		69.8	4,751			4,713	69.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 148.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	471	48.4	15,134	61.0	18.4	1,249	1,520	15	1,264	18.6
Unknown, COMMUNICATION	321	32.9	6,579	26.5	8.0	543	501	5	548	8.1
Pole	182	18.7	3,111	12.5	3.8	257	1,845	18	275	4.0
Totals:	974	100.0	24,824	100.0	30.2	2,049	3,866	38	2,087	30.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.27	0.00	0.3250	0.29	0.107	132.0	237.5	132.0	1,684	758	0	1,088	1,847
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.27	0.00	0.3250	0.14	0.107	91.3	58.9	91.3	1,684	652	0	753	1,405
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.65	0.3250	0.14	0.107	91.3	58.9	91.3	1,684	482	14	556	1,052
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.65	0.3250	0.29	0.107	132.0	237.5	132.0	1,684	560	20	804	1,384
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.57	6.70	0.3980	0.16	0.145	91.3	58.9	91.3	2,128	591	17	587	1,195
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.57	6.70	0.3980	0.33	0.145	132.0	237.5	132.0	2,128	687	24	849	1,560
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.88	6.74	0.3980	0.16	0.145	91.3	58.9	91.3	2,128	574	17	571	1,162

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.88	6.74	0.3980	0.33	0.145	132.0	237.5	132.0	2,128	668	24	825	1,517
											Totals:	4,972	116	6,034	11,122

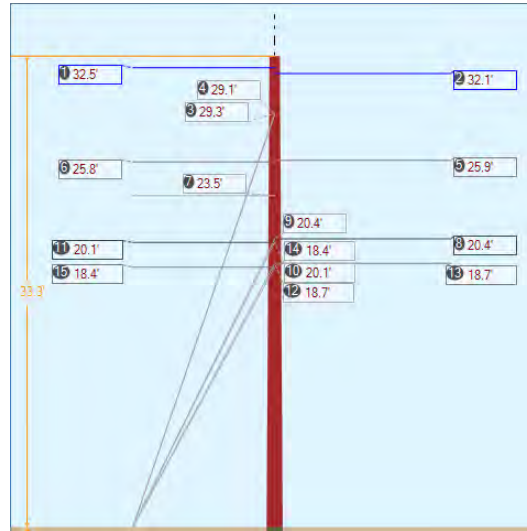
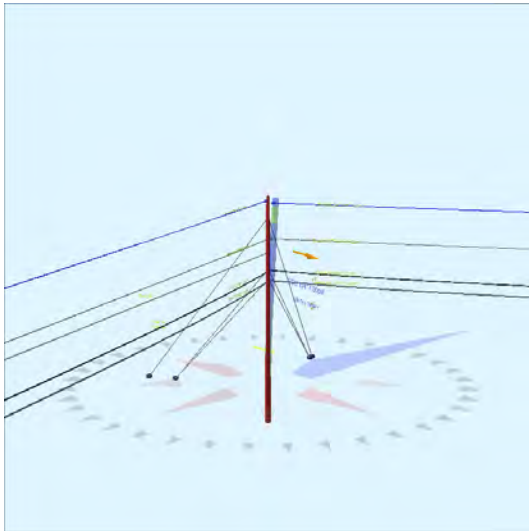
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.30	6.96	1.3300	1.19	0.337	91.3	58.9	91.3	925	212	42	989	1,242
CATV	CATV 1.0	Unknown, COMMUNICATION	20.30	6.96	1.3300	1.83	0.337	132.0	237.5	132.0	925	247	60	1,429	1,736
Telco	TELE 1.5	Unknown, COMMUNICATION	18.91	7.04	1.5000	1.37	0.900	91.3	58.9	91.3	2,000	427	73	1,007	1,507
Telco	TELE 1.5	Unknown, COMMUNICATION	18.91	7.04	1.5000	2.14	0.900	132.0	237.5	132.0	2,000	497	106	1,455	2,058
											Totals:	1,383	282	4,880	6,544

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.00	21.99	150.0	150.0	640.00	47.00	--	24.00	--	2,227	1,535	3,763
											Totals:	2,227	1,535	3,763

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.40	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.33	0.00	148.2	58.2	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.57	0.00	148.2	58.2	2.00	3.00	3.19	2	11	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.88	0.00	148.2	58.2	2.00	3.00	3.19	2	11	13	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.30	0.00	148.9	148.9	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.91	0.00	148.9	58.9	5.00	3.00	0.00	6	0	6	
										Totals:	17	190	207

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.29	33.41	10.52	14.72	7.32	11.39	1.60e+6	60.00	57.00	33.40	30,910	309.29	8.00

Pole Num:	78W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.74	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025037 Deg	Longitude:	-84.457408 Deg	Elevation:	909.124338184258		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.9	29.3
Groundline	14.2	0.0
Vertical	17.8	24.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,403	112.7
Groundline	11,586	107.8
GL Allowable	81,878	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.1	338.0	29.3	31.9 46.1	104.1 104.1	32.1 51.0	140.0 140.0
? Single Helix Anchor ? EHS 3/8 (Down)	22.0	240.0	29.2	33.1 47.7	104.1 104.1	33.3 52.8	70.0 70.0
? Single Helix Anchor ? EHS 3/8 (Span/Head)	192.4	159.0	23.5	0.0 0.0	104.1 104.1	0.0 0.0	0.0 0.0
? Single Helix Anchor ? EHS 1/4 (Down)	20.0	338.0	20.4	24.9 42.5	104.1 104.1	25.2 47.2	140.0 140.0
? EHS 1/4 (Down)			18.7	40.8	104.1	45.4	140.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.0	240.0	20.1	27.3 46.4	104.1 104.1	27.6 51.6	70.0 70.0
? EHS 1/4 (Down)			18.4	44.9	104.1	50.0	70.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 107.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,635	460.3	68,474	591.0	83.6	13,610	175	2	13,612	200.2
Comms	5,030	411.0	40,219	347.1	49.1	7,994	698	7	8,001	117.7
GuyBraces	-9,628	-786.5	-98,477	-850.0	-120.3	-19,573	27,322	269	-19,304	-283.9
Pole	181	14.8	1,285	11.1	1.6	256	1,838	18	274	4.0
Insulators	6	0.5	85	0.7	0.1	17	57	1	17	0.3
Pole Load	1,224	100.0	11,586	100.0	14.2	2,303	30,091	296	2,599	38.2
Pole Reserve Capacity			70,292		85.8	4,497			4,201	61.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 107.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	662	54.1	7,734	66.8	9.5	1,537	16,025	158	1,695	24.9
Unknown, COMMUNICATION	381	31.1	2,567	22.2	3.1	510	12,227	120	630	9.3
Pole	181	14.8	1,285	11.1	1.6	256	1,838	18	274	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,224	100.0	11,586	100.0	14.2	2,303	30,091	296	2,599	38.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.48	16.46	0.3250	0.52	0.107	192.4	159.0	192.4	1,684	44,598	10	959	45,567
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.07	16.49	0.3250	0.23	0.107	131.0	57.5	131.0	1,684	44,804	7	565	45,376
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.61	0.3250	0.23	0.107	131.0	57.5	131.0	1,684	36,228	12	457	36,697
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.82	6.62	0.3250	0.52	0.107	192.4	159.0	192.4	1,684	35,454	18	762	36,234
Totals:											161,084	48	2,743	163,874	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.39	6.95	1.3300	1.80	0.337	131.0	57.5	131.0	925	15,645	38	797	16,480
CATV	CATV 1.0	Unknown, COMMUNICATION	20.14	6.96	1.3300	2.95	0.337	192.4	159.0	192.5	925	15,190	55	1,318	16,564
Telco	TELE 1.5	Unknown, COMMUNICATION	18.66	7.05	1.5000	2.11	0.900	131.0	57.5	131.0	2,000	30,951	67	797	31,815
Telco	TELE 1.5	Unknown, COMMUNICATION	18.38	7.07	1.5000	3.51	0.900	192.4	159.0	192.5	2,000	29,980	98	1,315	31,393
Totals:											91,767	258	4,227	96,252	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.48	0.00	159.0	159.0	3.00	3.80	12.75	5	76	81
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.07	0.00	57.5	57.5	3.00	3.80	12.75	5	75	80
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	57.5	57.5	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.82	0.00	159.0	159.0	2.00	3.00	3.19	1	12	13
Bolt	Single Bolt	Unknown, COMMUNICATION	20.39	0.00	57.5	147.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.14	0.00	159.0	249.0	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	18.66	0.00	57.5	147.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	18.38	0.00	159.0	249.0	5.00	3.00	0.00	4	0	4
Totals:										27	176	202

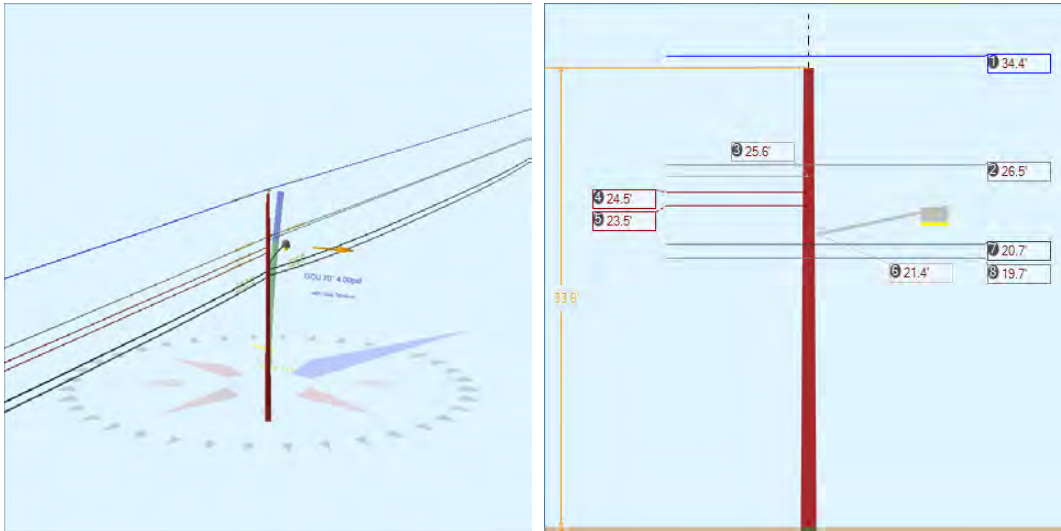
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.26	0.00	21.14	0.375	75.00	338.0	54.0	0.273	34.41	1.38
EHS 3/8	Down	KU, UTILITY	29.15	0.00	22.00	0.375	75.00	240.0	52.8	0.273	34.82	1.45
EHS 3/8	Span/Head	KU, UTILITY	23.46	23.46	192.41	0.375	75.00	159.0	0.0	0.273	190.56	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	20.39	0.00	20.01	0.25	75.00	338.0	45.4	0.121	26.81	0.97
EHS 1/4	Down	Unknown, COMMUNICATION	18.66	0.00	20.01	0.25	75.00	338.0	42.9	0.121	25.58	0.89
EHS 1/4	Down	Unknown, COMMUNICATION	20.14	0.00	17.00	0.25	75.00	240.0	49.7	0.121	24.62	0.97
EHS 1/4	Down	Unknown, COMMUNICATION	18.38	0.00	17.00	0.25	75.00	240.0	47.1	0.121	23.28	0.89

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,071	6,428	6,388	5,165	3,758	-2,408	-69,273
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,316	6,651	6,609	5,263	3,999	-2,683	-77,029
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	749
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,824	2,568	2,541	1,809	1,785	-1,143	-22,966
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,716	2,469	2,441	1,660	1,789	-1,147	-21,095
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,085	2,805	2,776	2,116	1,797	-1,206	-23,844
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,992	2,720	2,690	1,970	1,832	-1,229	-22,219
Totals:										17,983	14,959	-9,816	-235,677

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.14	338.0	20,000	1.00	20,000	6,428	6,388	32.1
Single Helix Anchor		18.00	22.00	240.0	20,000	1.00	20,000	6,651	6,609	33.3
Single Helix Anchor		18.00	192.41	159.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	20.01	338.0	20,000	1.00	20,000	5,035	4,981	25.2
Single Helix Anchor		18.00	17.00	240.0	20,000	1.00	20,000	5,524	5,465	27.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.89	33.99	10.35	25.63	7.32	11.38	1.60e+6	60.00	57.00	33.31	169,179	1690.48	5.62

Pole Num:	79W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024644 Deg	Longitude:	-84.457180 Deg	Elevation:	909.841159377569		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.4	0.0
Groundline	45.4	0.0
Vertical	0.9	18.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,141	103.3
Groundline	37,141	103.3
GL Allowable	82,537	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	192.4	339.0		21.6	70.0	22.2	160.0
? EHS 3/8 (Span/Head)			25.7	31.1	70.0	35.2	160.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 103.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,571	203.1	87,541	235.7	106.1	7,195	262	3	7,198	105.8
Comms	399	22.7	8,374	22.6	10.2	688	699	7	695	10.2
GuyBraces	-2,394	-136.1	-61,541	-165.7	-74.6	-5,058	45	0	-5,058	-74.4
Pole	153	8.7	2,624	7.1	3.2	216	1,858	18	234	3.4
Streetlights	24	1.4	-31	-0.1	0.0	-3	142	1	-1	0.0
Insulators	5	0.3	173	0.5	0.2	14	55	1	15	0.2
Pole Load	1,759	100.0	37,141	100.0	45.0	3,053	3,062	30	3,083	45.3
Pole Reserve Capacity			45,396		55.0	3,747			3,717	54.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 103.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,207	68.6	26,134	70.4	31.7	2,148	486	5	2,153	31.7
Unknown, COMMUNICATION	399	22.7	8,383	22.6	10.2	689	718	7	696	10.2
Pole	153	8.7	2,624	7.1	3.2	216	1,858	18	234	3.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,759	100.0	37,141	100.0	45.0	3,053	3,062	30	3,083	45.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.43	0.00	0.3250	0.29	0.107	131.5	157.1	131.5	1,684	44,567	0	878	45,446
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.43	0.00	0.3250	0.61	0.107	192.4	339.0	192.4	1,684	-42,526	0	1,317	-41,209
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.47	6.59	0.3250	0.29	0.107	131.5	157.1	131.5	1,684	34,252	16	675	34,943
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.47	6.59	0.3250	0.61	0.107	192.4	339.0	192.4	1,684	-32,683	23	1,012	-31,648
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.48	6.71	0.3980	0.32	0.145	131.5	157.1	131.5	2,128	40,026	14	680	40,720

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.49	6.77	0.3980	0.32	0.145	131.5	157.1	131.5	2,128	38,412	14	652	39,078
											Totals:	82,048	68	5,214	87,331

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.67	6.94	1.3300	2.97	0.337	192.4	339.0	192.5	925	-14,018	72	1,753	-12,192
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.67	6.94	1.3300	1.83	0.337	131.5	157.1	131.6	925	14,690	49	1,169	15,909
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.01	1.5000	3.53	0.900	192.4	339.0	192.5	2,000	-28,838	127	1,823	-26,888
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.01	1.5000	2.14	0.900	131.5	157.1	131.6	2,000	30,223	87	1,216	31,525
		COMMUNICATION													
											Totals:	2,057	336	5,961	8,354

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 8 ft. Arm	KU, UTILITY	21.42	4.40	335.0	335.0	75.00	24.00	20.00	3.00	96.00	-542	512	-31
											Totals:	-542	512	-31

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.56	0.00	0.0	0.0	13.00	9.00	10.50	0	130	130	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.47	0.00	68.0	338.0	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.48	0.00	157.1	157.1	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.49	0.00	157.1	157.1	2.00	3.00	3.19	1	9	10	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.67	0.00	69.0	429.0	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.67	0.00	69.0	429.0	5.00	3.00	0.00	5	0	5	
										Totals:	13	159	173

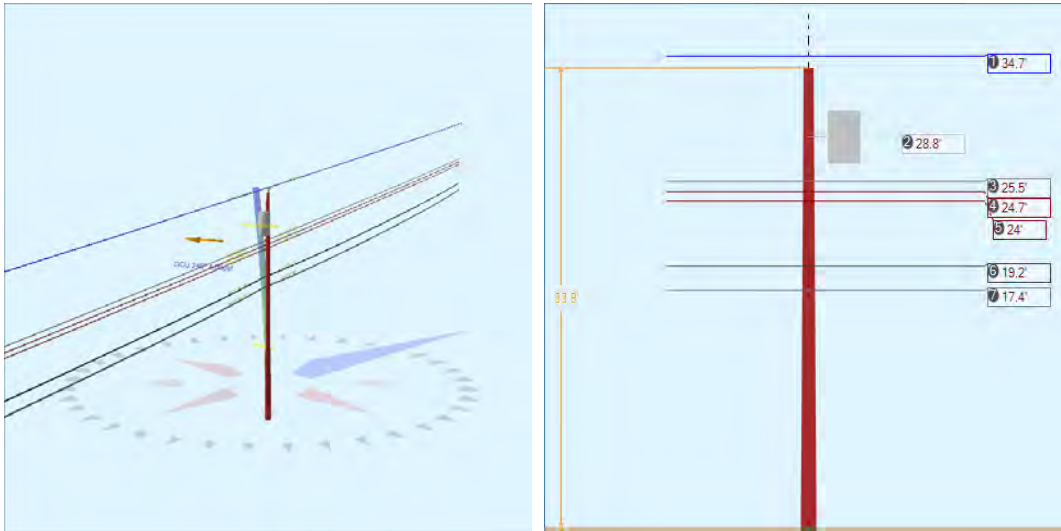
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.65	25.65	192.41	0.375	75.00	339.0	0.0	0.273	190.57	5.18

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	4,884	4,440	4,313	0	4,313	-2,434	-61,393
Totals:									0	4,313	-2,434	-61,393

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	192.41	339.0	20,000	1.00	20,000	4,440	4,313	22.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.24	32.92	10.67	7.37	7.32	11.41	1.60e+6	60.00	57.00	33.56	357,150	3402.52	111.11

Pole Num:	80W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.16	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.94	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024328 Deg	Longitude:	-84.457012 Deg	Elevation:	908.346405933806		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.1	0.0
Groundline	27.1	0.0
Vertical	13.0	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,071	241.4
Groundline	22,071	241.4
GL Allowable	83,274	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 241.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	384	40.0	10,561	47.9	12.7	859	303	3	862	12.7
Comms	331	34.4	6,385	28.9	7.7	519	545	5	525	7.7
PowerEquipments	55	5.7	1,723	7.8	2.1	140	1,216	12	152	2.2
Pole	185	19.2	3,193	14.5	3.8	260	1,881	18	278	4.1
Insulators	6	0.6	210	1.0	0.3	17	55	1	18	0.3
Pole Load	960	100.0	22,071	100.0	26.5	1,796	4,000	39	1,834	27.0
Pole Reserve Capacity			61,203		73.5	5,005			4,966	73.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 241.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	445	46.3	12,482	56.6	15.0	1,015	1,555	15	1,031	15.2
Unknown, COMMUNICATION	331	34.4	6,396	29.0	7.7	520	564	5	526	7.7
Pole	185	19.2	3,193	14.5	3.8	260	1,881	18	278	4.1
Totals:	960	100.0	22,071	100.0	26.5	1,796	4,000	39	1,834	27.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.71	0.00	0.3250	0.24	0.107	120.8	158.1	120.8	1,684	6,872	0	1,001	7,874
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.71	0.00	0.3250	0.29	0.107	131.5	337.1	131.5	1,684	-5,858	0	1,093	-4,765
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.49	6.67	0.3250	0.24	0.107	120.8	158.1	120.8	1,684	5,044	18	735	5,797
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.49	6.67	0.3250	0.29	0.107	131.5	337.1	131.5	1,684	-4,300	20	802	-3,477
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.71	6.72	0.3980	0.27	0.145	120.8	158.1	120.8	2,128	6,180	22	776	6,977
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.71	6.72	0.3980	0.32	0.145	131.5	337.1	131.5	2,128	-5,267	24	847	-4,397
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.03	6.76	0.3980	0.27	0.145	120.8	158.1	120.8	2,128	6,010	22	754	6,787

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.03	6.76	0.3980	0.32	0.145	131.5	337.1	131.5	2,128	-5,123	24	824	-4,275
											Totals:	3,559	131	6,832	10,521

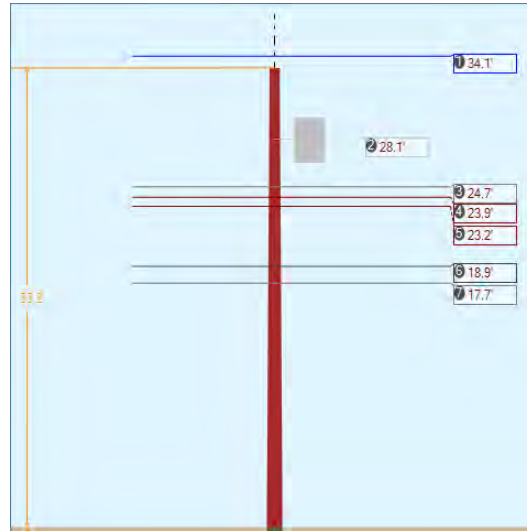
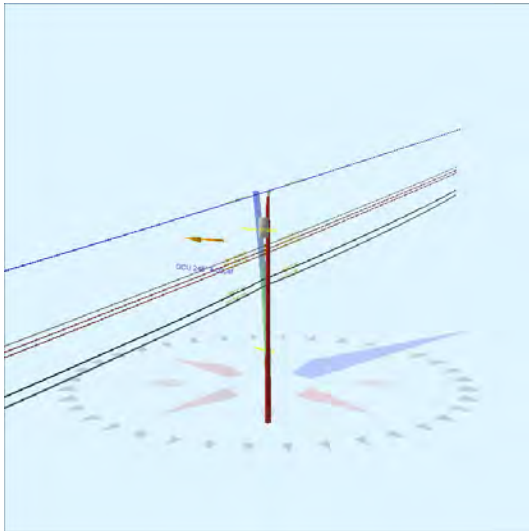
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.24	7.05	1.3300	1.65	0.337	120.8	158.1	120.8	925	2,091	55	1,230	3,377
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.24	7.05	1.3300	1.83	0.337	131.5	337.1	131.6	925	-1,782	60	1,343	-379
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.45	7.16	1.5000	1.92	0.900	120.8	158.1	120.8	2,000	4,101	98	1,220	5,419
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.45	7.16	1.5000	2.14	0.900	131.5	337.1	131.6	2,000	-3,496	107	1,332	-2,057
		COMMUNICATION													
											Totals:	914	321	5,125	6,361

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.79	21.97	155.0	155.0	640.00	47.00	--	24.00	--	142	1,574	1,716
											Totals:	142	1,574	1,716

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.84	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.49	0.00	247.6	157.6	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	247.6	157.6	2.00	3.00	3.19	2	11	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.03	0.00	247.6	157.6	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.24	0.00	247.6	157.6	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.45	0.00	247.6	157.6	5.00	3.00	0.00	6	0	6		
											Totals:	18	191	209

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.50	33.43	10.56	15.04	7.32	11.44	1.60e+6	60.00	57.00	33.84	30,814	307.66	7.69

Pole Num:	81W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.71	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024007 Deg	Longitude:	-84.456827 Deg	Elevation:	915.912831301788		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.0	247.9
Groundline	29.0	247.9
Vertical	9.5	247.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,276	245.7
Groundline	23,276	245.7
GL Allowable	81,690	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 245.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	449	43.5	11,948	51.3	14.6	991	298	3	994	14.6
Comms	353	34.3	6,778	29.1	8.3	562	536	5	567	8.3
PowerEquipments	42	4.0	1,266	5.4	1.6	105	694	7	112	1.6
Pole	181	17.6	3,078	13.2	3.8	255	1,832	18	273	4.0
Insulators	6	0.6	206	0.9	0.3	17	55	1	18	0.3
Pole Load	1,031	100.0	23,276	100.0	28.5	1,930	3,415	34	1,964	28.9
Pole Reserve Capacity			58,414		71.5	4,870			4,836	71.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 245.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	496	48.1	13,409	57.6	16.4	1,112	1,028	10	1,122	16.5
Unknown, COMMUNICATION	353	34.3	6,789	29.2	8.3	563	555	5	569	8.4
Pole	181	17.6	3,078	13.2	3.8	255	1,832	18	273	4.0
Totals:	1,031	100.0	23,276	100.0	28.5	1,930	3,415	34	1,964	28.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.11	0.00	0.3250	0.27	0.107	127.6	159.6	127.6	1,684	3,920	0	1,045	4,964
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.11	0.00	0.3250	0.24	0.107	120.8	338.1	120.8	1,684	-2,417	0	991	-1,427
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.68	0.3250	0.27	0.107	127.6	159.6	127.6	1,684	2,832	19	755	3,606
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.68	0.3250	0.24	0.107	120.8	338.1	120.8	1,684	-1,747	18	716	-1,012
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.89	6.73	0.3980	0.30	0.145	127.6	159.6	127.6	2,128	3,468	24	796	4,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.89	6.73	0.3980	0.27	0.145	120.8	338.1	120.8	2,128	-2,139	22	755	-1,361
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.23	6.77	0.3980	0.30	0.145	127.6	159.6	127.6	2,128	3,371	24	774	4,169

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.23	6.77	0.3980	0.27	0.145	120.8	338.1	120.8	2,128	-2,079	22	734	-1,323
Totals:												5,208	129	6,566	11,904

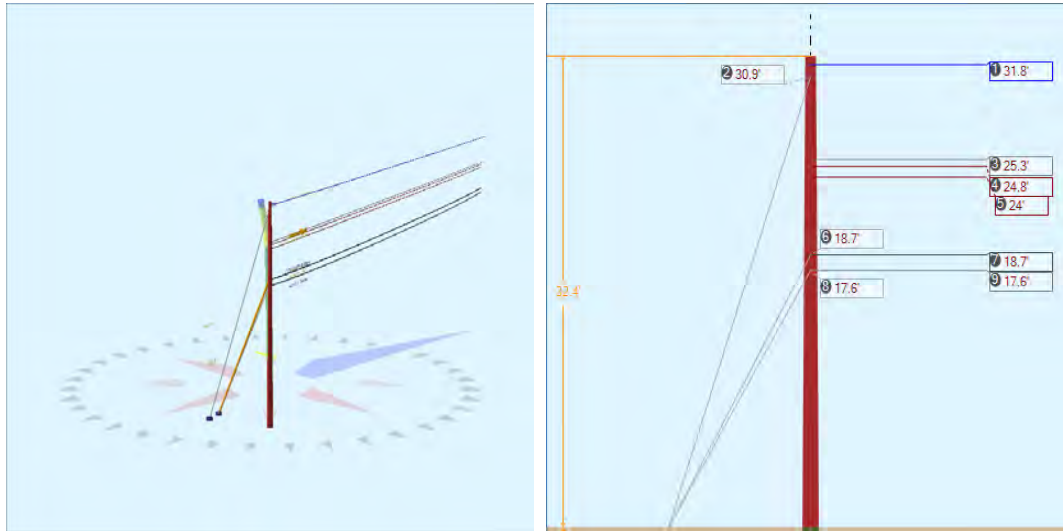
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.90	7.03	1.3300	1.76	0.337	127.6	159.6	127.6	925	1,192	59	1,283	2,534
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.90	7.03	1.3300	1.65	0.337	120.8	338.1	120.8	925	-735	56	1,217	538
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.67	7.11	1.5000	2.06	0.900	127.6	159.6	127.6	2,000	2,411	104	1,312	3,826
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.67	7.11	1.5000	1.92	0.900	120.8	338.1	120.8	2,000	-1,487	98	1,244	-145
		COMMUNICATION													
Totals:												1,381	316	5,056	6,753

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	28.09	20.97	160.0	160.0	365.00	39.00	--	22.00	--	91	1,171	1,262
Totals:												91	1,171	1,262

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.24	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.66	0.00	248.8	158.8	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.89	0.00	248.8	158.8	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.23	0.00	248.8	158.8	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.90	0.00	248.8	158.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.67	0.00	248.8	158.8	5.00	3.00	0.00	6	0	6
Totals:										18	188	205

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.86	33.19	10.56	13.47	7.32	11.37	1.60e+6	60.00	57.00	33.24	36,130	359.50	10.53

Pole Num:	82W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Deadend
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Near Capacity
Aux Data 2	Unset	Setting Depth (ft):	7.65	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.37	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023690 Deg	Longitude:	-84.456712 Deg	Elevation:	909.026306361053		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	64.5	25.0
Groundline	25.8	0.0
Vertical	14.8	24.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,895	162.1
Groundline	13,697	305.1
GL Allowable	79,392	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.1	161.0		45.0	340.0	45.0	342.8
? EHS 3/8 (Down)			30.9	64.9	340.0	71.4	342.8
? Single Helix Anchor	19.0	161.0		53.8	340.0	53.8	342.8
? EHS 1/4 (Down)			18.7	92.9	340.0	102.2	342.8
? EHS 1/4 (Down)			17.6	87.0	340.0	95.7	342.8
System Capacity Summary:				Near Capacity		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 305.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	8,166	807.7	98,300	717.7	123.8	18,341	153	2	18,343	269.7
Comms	3,133	309.8	25,908	189.2	32.6	4,834	275	3	4,837	71.1
GuyBraces	-10,434	-1032.1	-111,660	-815.2	-140.6	-20,834	22,334	224	-20,610	-303.1
Pole	144	14.2	1,100	8.0	1.4	205	1,762	18	223	3.3
Insulators	3	0.3	50	0.4	0.1	9	36	0	10	0.1
Pole Load	1,011	100.0	13,697	100.0	17.3	2,556	24,561	247	2,802	41.2
Pole Reserve Capacity			65,695		82.7	4,244			3,998	58.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 305.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	3,970	392.7	38,725	282.7	48.8	7,226	11,211	113	7,338	107.9
Unknown, COMMUNICATION	-3,103	-306.9	-26,128	-190.8	-32.9	-4,875	11,588	116	-4,759	-70.0
Pole	144	14.2	1,100	8.0	1.4	205	1,762	18	223	3.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,011	100.0	13,697	100.0	17.3	2,556	24,561	247	2,802	41.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	31.75	16.45	0.3250	0.19	0.107	127.6	339.6	127.6	1,684	57,270	6	-4	57,273
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.26	6.59	0.3250	0.19	0.107	127.6	339.6	127.6	1,684	45,559	16	-3	45,572
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.78	6.62	0.3980	0.23	0.145	127.6	339.6	127.6	2,128	56,471	19	-3	56,487
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.04	6.67	0.3980	0.23	0.145	127.6	339.6	127.6	2,128	54,792	19	-3	54,808
Totals:											214,093	60	-13	214,140

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.71	6.99	1.3300	1.74	0.337	127.6	339.6	127.6	925	18,534	48	-5	18,577
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.64	7.06	1.5000	2.04	0.900	127.6	339.6	127.6	2,000	37,782	85	-5	37,862
		COMMUNICATION													
Totals:											56,316	133	-10	56,439	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	31.75	0.00	0.0	0.0	3.00	3.80	12.75	4	61	66
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.26	0.00	339.6	339.6	2.00	3.00	3.19	2	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.78	0.00	339.6	339.6	2.00	3.00	3.19	2	9	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.04	0.00	339.6	339.6	2.00	3.00	3.19	2	9	11
Bolt	Three Bolt	Unknown, COMMUNICATION	18.71	0.00	339.6	339.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.64	0.00	339.6	339.6	5.00	3.00	0.00	5	0	5
Totals:										19	90	108

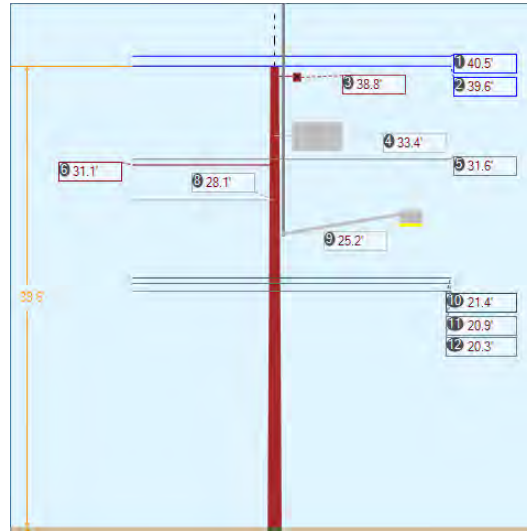
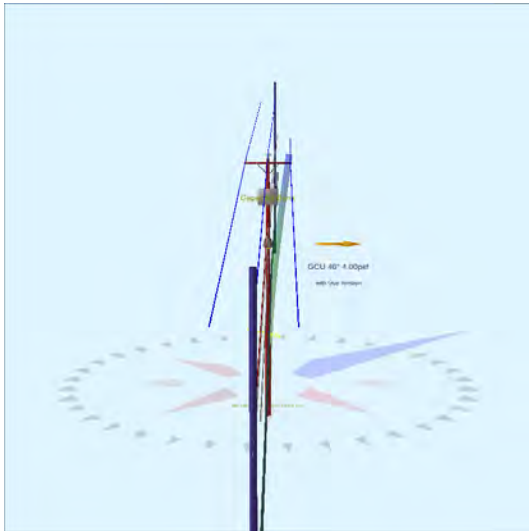
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	30.93	0.00	22.12	0.375	75.00	161.0	54.2	0.273	36.35	2.06
EHS 1/4	Down	Unknown, COMMUNICATION	18.71	0.00	18.98	0.25	75.00	161.0	44.4	0.121	24.88	1.96
EHS 1/4	Down	Unknown, COMMUNICATION	17.64	0.00	18.98	0.25	75.00	161.0	42.8	0.121	24.13	1.78

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,896	8,996	8,996	7,300	5,257	-4,258	-129,878
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	6,114	5,558	5,558	3,892	3,968	-3,214	-59,396
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,726	5,206	5,206	3,535	3,822	-3,095	-53,971
Totals:										14,726	13,048	-10,567	-243,245

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.12	161.0	20,000	1.00	20,000	8,996	8,996	45.0
Single Helix Anchor		18.00	18.98	161.0	20,000	1.00	20,000	10,763	10,763	53.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.60	33.99	10.24	23.03	7.32	11.26	1.60e+6	60.00	57.00	32.35	166,320	1659.51	6.76

Pole Num:	83W - 27285-2049	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.42	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.72	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025573 Deg	Longitude:	-84.457094 Deg	Elevation:	911.695628501899		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.3	45.6
Groundline	34.3	45.6
Vertical	2.0	225.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,408	45.6
Groundline	32,408	45.6
GL Allowable	96,273	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	122.8	135.5		0.0	45.6	0.0	0.0
? EHS 3/8 (Span/Head)			28.1	0.0	45.6	0.0	0.0
? Single Helix Anchor	126.8	315.7		1.8	45.6	3.5	130.0
? EHS 3/8 (Span/Head)			28.1	2.6	45.6	5.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	305	25.1	11,478	35.4	11.9	810	297	3	812	11.9
Comms	458	37.6	10,086	31.1	10.5	711	881	8	719	10.6
GuyBraces	79	6.5	2,213	6.8	2.3	156	58	1	157	2.3
GenericEquipments	70	5.7	2,295	7.1	2.4	162	817	7	169	2.5
Pole	223	18.3	4,404	13.6	4.6	311	2,343	21	331	4.9
Crossarms	1	0.1	49	0.2	0.1	4	95	1	4	0.1
Streetlights	32	2.6	773	2.4	0.8	55	162	1	56	0.8
Risers	41	3.4	778	2.4	0.8	55	54	0	55	0.8
Insulators	8	0.7	333	1.0	0.4	24	84	1	24	0.4
Pole Load	1,217	100.0	32,408	100.0	33.7	2,286	4,790	42	2,328	34.2
Pole Reserve Capacity			63,865		66.3	4,514			4,472	65.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	465	38.2	15,557	48.0	16.2	1,097	625	6	1,103	16.2
Unknown, COMMUNICATION	458	37.6	10,103	31.2	10.5	713	909	8	721	10.6
<Undefined>	71	5.8	2,344	7.2	2.4	165	912	8	173	2.5
Pole	223	18.3	4,404	13.6	4.6	311	2,343	21	331	4.9
Totals:	1,217	100.0	32,408	100.0	33.7	2,286	4,790	42	2,328	34.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.46	0.00	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,400	0	1,195	-2,206
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.46	0.00	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,864	0	1,233	5,097
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,329	125	1,170	-2,034
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,782	129	1,207	5,119

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,329	-124	1,170	-2,283
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,782	-128	1,207	4,861
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.61	6.63	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-2,656	18	933	-1,704
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.61	6.63	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,018	19	963	4,001
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	31.11	6.66	0.2570	0.23	0.067	122.8	135.5	122.8	150	-233	-1	843	609
Totals:											1,500	39	9,921	11,461	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.40	7.24	1.3300	1.68	0.337	122.8	135.5	122.8	925	-988	58	1,401	472
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.40	7.24	1.3300	1.75	0.337	126.8	315.8	126.8	925	1,122	60	1,447	2,629
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.26	1.5000	1.96	0.900	122.8	135.5	122.8	2,000	-2,088	102	1,498	-489
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.26	1.5000	2.04	0.900	126.8	315.8	126.8	2,000	2,373	105	1,546	4,024
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.28	7.30	1.5000	1.96	0.900	122.8	135.5	122.8	2,000	-2,024	102	1,452	-470
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.28	7.30	1.5000	2.04	0.900	126.8	315.8	126.8	2,000	2,300	106	1,499	3,904
		COMMUNICATION													
Totals:											695	534	8,842	10,071	

GenericEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	Capacitor Bank	33.40	22.03	135.0	0.0	430.00	30.00	30.00	--	42.00	-44	2,336	2,291
Totals:											-44	2,336	2,291

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.79	5.46	315.6	315.6	50.00	4.50	3.50	96.00	2	47	49	
Totals:											2	47	49

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 10 ft. Arm	KU, UTILITY	25.19	4.51	135.0	135.0	85.00	24.00	20.00	3.00	120.00	-36	808	772
Totals:												-36	808	772

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 140.0°	Riser	KU, UTILITY	28.35	6.09	140.0	140.0	28.35	340.16	2.50	2.50	340.16	-2	778	777
Totals:												-2	778	777

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.59	0.00	0.0	0.0	13.00	9.00	10.50	0	184	184
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.98	45.00	38.7	0.0	6.00	3.50	7.50	43	50	93
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.98	-45.00	232.5	0.0	6.00	3.50	7.50	-43	50	7
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.61	0.00	45.6	315.6	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.11	0.00	135.5	135.5	2.00	3.00	3.19	0	14	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.40	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.93	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.28	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Totals:										20	313	332

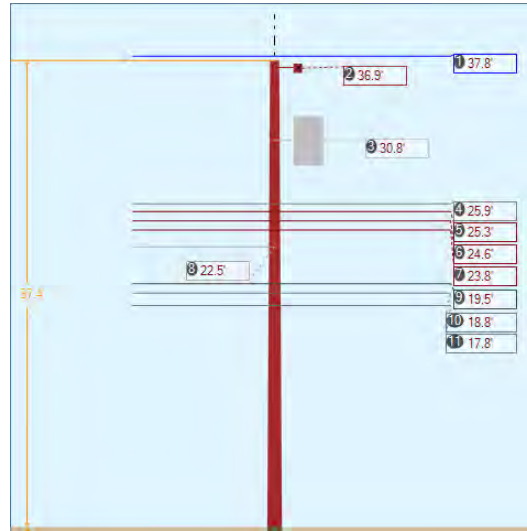
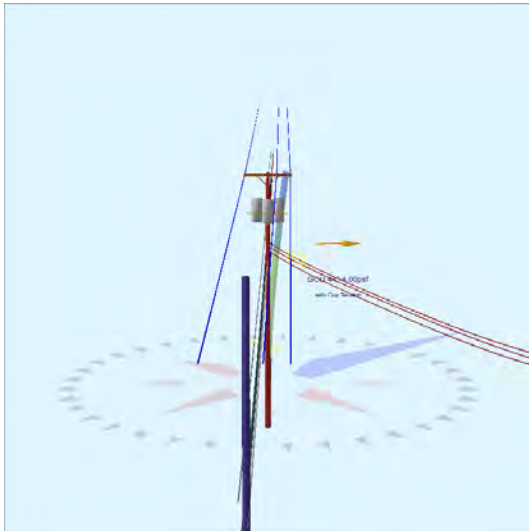
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	28.07	28.07	122.77	0.375	75.00	135.5	0.0	0.273	120.91	0.00
EHS 3/8	Span/Head	KU, UTILITY	28.07	28.07	126.77	0.375	75.00	315.7	0.0	0.273	124.91	0.28

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	875	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	771	701	357	0	357	15,334	
Totals:										0	357	15	2,209

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	122.77	135.5	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	126.77	315.7	20,000	1.00	20,000	701	357	3.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.02	33.55	11.05	10.36	7.32	12.01	1.60e+6	60.00	57.00	39.59	236,716	2395.16	50.00

Pole Num:	84W - 27285-2045	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.90	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025799 Deg	Longitude:	-84.457405 Deg	Elevation:	905.972449229721		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.2	0.0
Groundline	40.2	0.0
Vertical	4.2	26.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	35,290	18.0
Groundline	35,290	18.0
GL Allowable	90,145	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.8	135.7		37.3	44.1	39.4	320.0
? EHS 3/8 (Span/Head)			22.5	53.8	44.1	62.6	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 18.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,963	324.6	99,092	280.8	109.9	7,485	490	5	7,489	110.1
Comms	364	29.9	6,301	17.9	7.0	476	924	9	484	7.1
GuyBraces	-3,449	-282.5	-77,375	-219.3	-85.8	-5,845	30	0	-5,844	-85.9
PowerEquipments	148	12.1	3,535	10.0	3.9	267	3,648	34	301	4.4
Pole	187	15.3	3,509	9.9	3.9	265	2,151	20	285	4.2
Crossarms	2	0.1	36	0.1	0.0	3	95	1	4	0.1
Insulators	6	0.5	194	0.6	0.2	15	89	1	15	0.2
Pole Load	1,221	100.0	35,290	100.0	39.2	2,666	7,427	69	2,734	40.2
Pole Reserve Capacity			54,855		60.9	4,134			4,066	59.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 18.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	668	54.7	25,460	72.2	28.2	1,923	4,229	39	1,962	28.9
Unknown, COMMUNICATION	364	29.9	6,285	17.8	7.0	475	953	9	484	7.1
Pole	187	15.3	3,509	9.9	3.9	265	2,151	20	285	4.2
<Undefined>	2	0.1	36	0.1	0.0	3	95	1	4	0.1
Totals:	1,221	100.0	35,290	100.0	39.2	2,666	7,427	69	2,734	40.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	18.80	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	38	1,018	-37,531
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	18.80	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	41	1,088	39,333
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	-121	1,018	-37,691
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	-129	1,088	39,163
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	107	1,018	-37,462

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.76	45.33	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	114	1,088	39,406
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.84	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-26,489	-17	699	-25,807
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.84	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	26,226	-18	747	26,954
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.88	0.3980	0.34	0.145	135.0	315.5	135.0	2,128	32,327	12	793	33,131
Secondary	ACSR 1 AWG 6/1 ROBIN	KU, UTILITY	24.55	6.92	0.3550	0.32	0.115	135.0	315.5	135.0	1,830	26,990	10	733	27,733
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.82	6.96	0.3980	0.34	0.145	135.0	315.5	135.0	2,128	30,451	12	747	31,210
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.88	0.3980	0.12	0.145	83.1	112.0	83.2	100	-230	-1	509	277
Secondary	ACSR 1 AWG 6/1 ROBIN	KU, UTILITY	24.55	6.92	0.3550	0.11	0.115	83.1	112.0	83.2	100	-224	-1	470	246
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.82	6.96	0.3980	0.12	0.145	83.1	112.0	83.2	100	-217	-1	479	261
Totals:											87,683	45	11,496	99,223	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.51	7.22	1.3300	1.75	0.337	126.8	135.8	126.8	925	-10,951	-53	1,167	-9,837
CATV	CATV 1.0	Unknown,	19.51	7.22	1.3300	1.88	0.337	135.0	315.5	135.0	925	10,843	-57	1,247	12,033
Telco	TELE 1.5	Unknown,	18.77	7.26	1.5000	2.04	0.900	126.8	135.8	126.8	2,000	-22,781	-93	1,227	-21,647
Telco	TELE 1.5	Unknown,	18.77	7.26	1.5000	2.21	0.900	135.0	315.5	135.0	2,000	22,554	-99	1,311	23,766
Telco	TELE 1.5	Unknown,	17.77	7.32	1.5000	2.04	0.900	126.8	135.8	126.8	2,000	-21,565	-94	1,162	-20,497
Telco	TELE 1.5	Unknown,	17.77	7.32	1.5000	2.21	0.900	135.0	315.5	135.0	2,000	21,351	-100	1,241	22,492
Totals:											-549	-496	7,355	6,309	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.83	22.05	135.0	135.0	640.00	47.00	--	24.00	--	-1,015	4,555	3,540
Totals:											-1,015	4,555	3,540	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		36.94	5.44	135.6	135.6	50.00	4.50	3.50	96.00	-20	56	36
Totals:											-20	56	36

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	-18.00	62.4	0.0	6.00	3.50	7.50	13	43	55	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	45.00	218.7	0.0	6.00	3.50	7.50	-40	43	2	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	-45.00	52.5	0.0	6.00	3.50	7.50	35	43	78	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	225.6	135.6	2.00	3.00	3.19	-2	11	9	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.29	0.00	315.5	315.5	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.55	0.00	315.5	315.5	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.82	0.00	315.5	315.5	2.00	3.00	3.19	1	10	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.51	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.77	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.77	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.29	0.00	112.0	112.0	2.00	3.00	3.19	0	11	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.55	0.00	112.0	112.0	2.00	3.00	3.19	0	10	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.82	0.00	112.0	112.0	2.00	3.00	3.19	0	10	10	
Totals:											-7	200	194

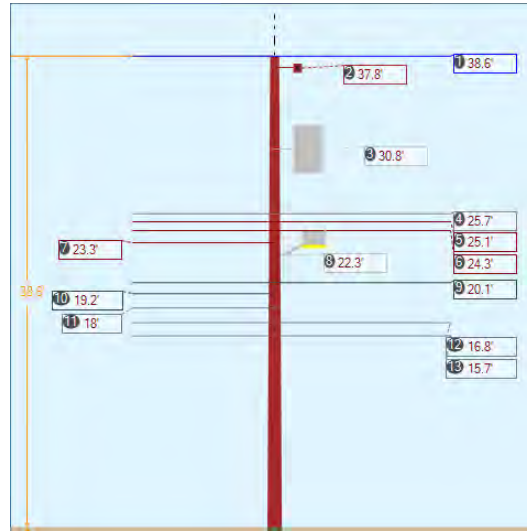
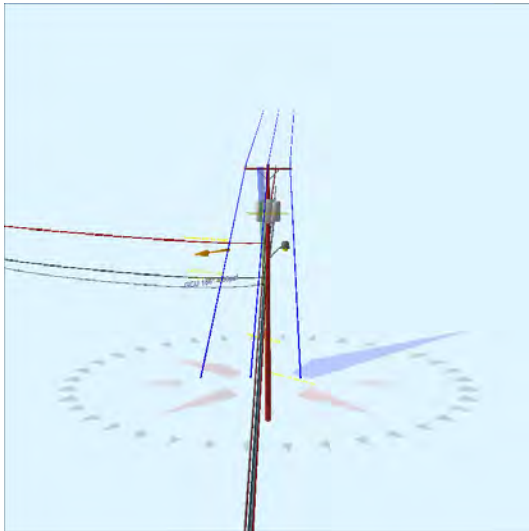
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	22.46	22.46	126.77	0.375	75.00	135.7	0.0	0.273	124.89	5.87

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	8,670	7,882	7,462	0	7,462	-3,477	-77,478	
Totals:											0	7,462	-3,477	-77,478

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	126.77	135.7	20,000	1.00	20,000	7,882	7,462	39.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.00	33.93	10.70	13.19	7.32	11.75	1.60e+6	60.00	57.00	37.39	177,565	1768.30	23.81

Pole Num:	85W - 27285-2033	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.36	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.36	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026064 Deg	Longitude:	-84.457726 Deg	Elevation:	903.472315248087		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	68.8	0.0
Groundline	68.8	0.0
Vertical	25.6	24.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	63,616	161.5
Groundline	63,616	161.5
GL Allowable	93,599	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,028	78.8	47,835	75.2	51.1	3,479	527	5	3,484	51.2
Comms	177	6.9	3,446	5.4	3.7	251	992	9	260	3.8
PowerEquipments	126	4.9	7,434	11.7	7.9	541	2,603	23	564	8.3
Pole	198	7.7	3,830	6.0	4.1	279	2,259	20	299	4.4
Crossarms	20	0.8	717	1.1	0.8	52	95	1	53	0.8
Streetlights	18	0.7	175	0.3	0.2	13	86	1	14	0.2
Insulators	5	0.2	178	0.3	0.2	13	97	1	14	0.2
Pole Load	2,572	100.0	63,616	100.0	68.0	4,627	6,658	60	4,687	68.9
Pole Reserve Capacity			29,983		32.0	2,173			2,113	31.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	2,128	82.8	54,377	85.5	58.1	3,955	3,210	29	3,984	58.6
<Undefined>	69	2.7	1,950	3.1	2.1	142	150	1	143	2.1
Unknown, COMMUNICATION	177	6.9	3,459	5.4	3.7	252	1,039	9	261	3.8
Pole	198	7.7	3,830	6.0	4.1	279	2,259	20	299	4.4
Totals:	2,572	100.0	63,616	100.0	68.0	4,627	6,658	60	4,687	68.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	5.46	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	-15	422	58,933
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	5.46	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	-12	331	-58,599
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	-74	422	58,874
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	-61	331	-58,648
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	44	422	58,992

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.65	45.33	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	36	331	-58,551
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.72	6.93	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	38,926	9	281	39,216
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.72	6.93	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-39,187	7	220	-38,960
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.96	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	47,933	11	298	48,242
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.96	0.3980	0.19	0.145	110.3	316.3	110.3	2,128	-48,255	9	234	-48,012
Secondary	TRIPLEX 4 AWG		25.06	6.96	0.6800	0.65	0.164	63.7	249.0	63.7	100	109	7	491	606
Secondary	TRIPLEX 4 AWG		25.06	6.96	0.6800	0.65	0.164	63.7	249.0	63.7	120	130	7	491	628
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.34	7.01	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	46,558	11	289	46,858
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.34	7.01	0.3980	0.19	0.145	110.3	316.3	110.3	2,128	-46,870	9	227	-46,634
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.34	7.07	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	44,643	24	278	44,944
											Totals:	42,809	13	5,069	47,891

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.07	7.26	1.3300	1.87	0.337	135.0	135.5	135.0	925	16,691	28	486	17,206
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.07	7.26	1.3300	1.47	0.337	110.3	316.3	110.3	925	-16,803	23	381	-16,399
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.79	7.45	1.5000	2.20	0.900	135.0	135.5	135.0	2,000	30,187	50	445	30,681
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.79	7.45	1.5000	1.71	0.900	110.3	316.3	110.3	2,000	-30,389	41	349	-30,000
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.72	7.52	1.5000	2.20	0.900	135.0	135.5	135.0	2,000	28,257	50	416	28,723
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.72	7.52	1.5000	1.71	0.900	110.3	316.3	110.3	2,000	-28,447	41	326	-28,079
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.17	7.31	1.3300	0.80	0.337	63.7	249.0	63.8	120	100	13	582	695
		COMMUNICATION													
Telco	TELE 1.0	Unknown,	18.00	7.38	1.0000	1.00	0.860	63.7	249.0	63.9	200	156	20	448	624
		COMMUNICATION													
											Totals:	-248	265	3,433	3,450

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	30.84	22.12	135.0	135.0	640.00	47.00	--	24.00	--	2,006	1,543	3,550
Transformer	1PH-25KVA		KU, UTILITY	30.84	21.12	135.0	135.0	365.00	39.00	--	22.00	--	1,545	2,348
Totals:												3,552	3,891	7,442

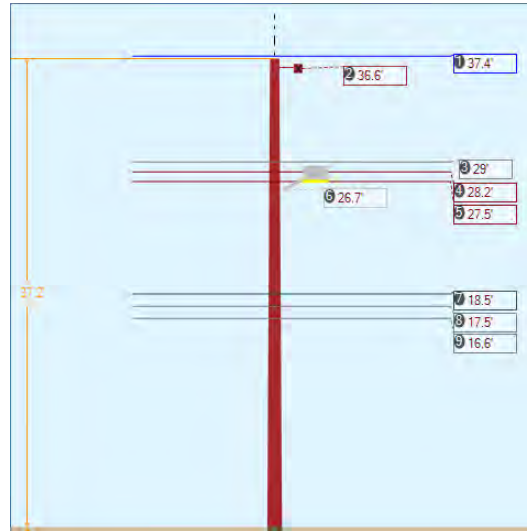
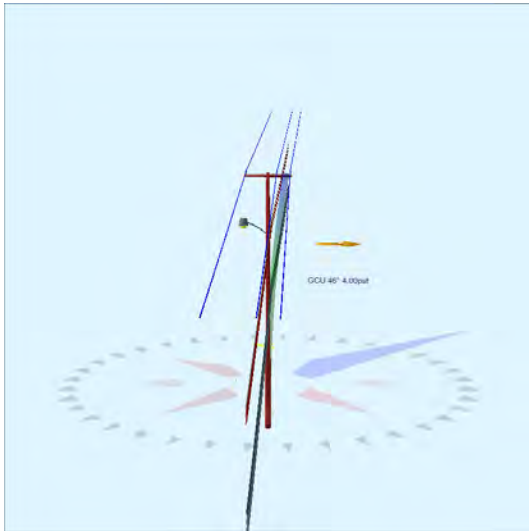
Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		37.84	5.46	315.9	315.9	50.00	4.50	3.50	96.00	-39	757	718	
Totals:												-39	757	718

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	22.28	4.63	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-228	403	175
Totals:												-228	403	175

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	0.00	315.9	0.0	6.00	3.50	7.50	-5	44	40	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	45.00	39.0	0.0	6.00	3.50	7.50	-23	44	21	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	-45.00	232.8	0.0	6.00	3.50	7.50	14	44	58	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.72	0.00	225.9	315.9	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	225.9	315.9	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.34	0.00	225.9	315.9	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.34	0.00	135.5	135.5	2.00	3.00	3.19	2	10	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.07	0.00	225.9	315.9	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.79	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.72	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.17	0.00	225.9	315.9	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.00	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Totals:											3	175	179

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.90	33.72	10.90	20.67	7.32	11.90	1.60e+6	60.00	57.00	38.64	26,047	260.09	3.91

Pole Num:	86W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026282 Deg	Longitude:	-84.457995 Deg	Elevation:	899.09259996709		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.5	0.0
Groundline	33.5	0.0
Vertical	9.0	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,592	46.3
Groundline	29,592	46.3
GL Allowable	89,755	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 46.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	501	41.7	16,518	55.8	18.4	1,254	407	4	1,258	18.5
Comms	466	38.8	8,645	29.2	9.6	657	825	8	664	9.8
Pole	207	17.2	3,870	13.1	4.3	294	2,138	20	314	4.6
Crossarms	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Streetlights	20	1.7	291	1.0	0.3	22	86	1	23	0.3
Insulators	5	0.4	221	0.8	0.3	17	74	1	17	0.3
Pole Load	1,200	100.0	29,592	100.0	33.0	2,247	3,625	34	2,281	33.5
Pole Reserve Capacity			60,163		67.0	4,553			4,519	66.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 46.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	526	43.8	17,014	57.5	19.0	1,292	538	5	1,297	19.1
Unknown, COMMUNICATION	466	38.8	8,663	29.3	9.7	658	853	8	666	9.8
Pole	207	17.2	3,870	13.1	4.3	294	2,138	20	314	4.6
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Totals:	1,200	100.0	29,592	100.0	33.0	2,247	3,625	34	2,281	33.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	18.81	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	45	994	1,060
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	18.81	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	50	1,111	2,021
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	112	994	1,127
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	126	1,111	2,097
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	-112	994	903
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	-125	1,111	1,846

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.04	6.65	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	16	17	771	804
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.04	6.65	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	666	19	862	1,546
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.69	0.3980	0.23	0.145	110.3	136.3	110.3	2,128	20	20	816	856
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.69	0.3980	0.28	0.145	123.3	317.1	123.3	2,128	819	23	912	1,754
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.48	6.74	0.3980	0.23	0.145	110.3	136.3	110.3	2,128	19	20	794	834
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.48	6.74	0.3980	0.28	0.145	123.3	317.1	123.3	2,128	797	23	887	1,707
Totals:											4,980	217	11,358	16,556	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.55	7.27	1.3300	1.48	0.337	110.3	136.3	110.3	925	6	53	1,092	1,150
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.55	7.27	1.3300	1.69	0.337	123.3	317.1	123.4	925	234	59	1,221	1,513
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.55	7.33	1.5000	1.72	0.900	110.3	136.3	110.3	2,000	12	92	1,129	1,233
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.55	7.33	1.5000	1.97	0.900	123.3	317.1	123.4	2,000	478	103	1,262	1,844
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.61	7.38	1.5000	1.72	0.900	110.3	136.3	110.3	2,000	11	93	1,069	1,173
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.61	7.38	1.5000	1.97	0.900	123.3	317.1	123.4	2,000	453	104	1,195	1,751
		COMMUNICATION													
Totals:											1,193	504	6,968	8,665	

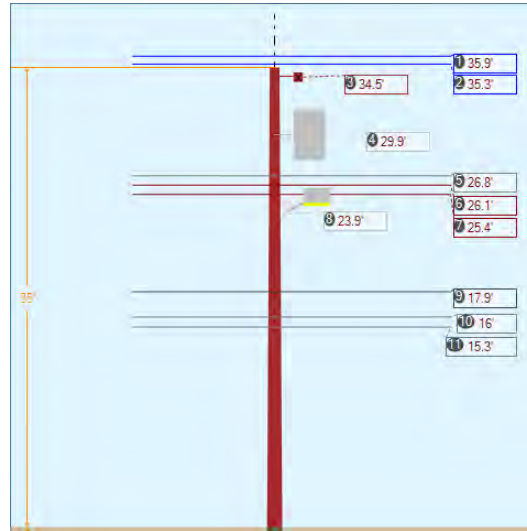
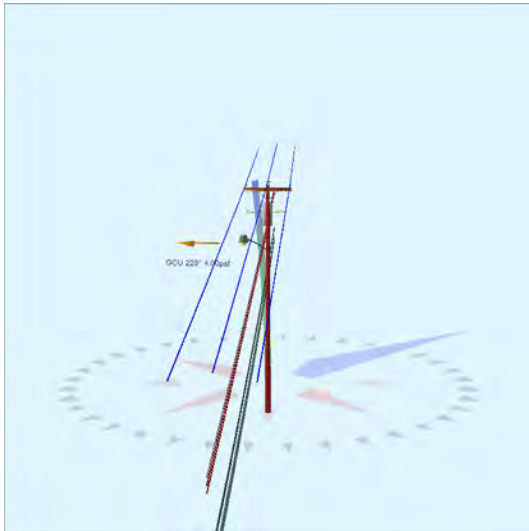
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	36.63	5.45	317.1	317.1	50.00	4.50	3.50	96.00	1	45	46	
Totals:											1	45	46

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.75	4.28	230.0	230.0	45.00	24.00	20.00	3.00	36.00	-238	530	292
Totals:											-238	530	292	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	18.00	30.3	0.0	6.00	3.50	7.50	17	47	64
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	45.00	40.2	0.0	6.00	3.50	7.50	43	47	90
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	-45.00	234.0	0.0	6.00	3.50	7.50	-43	47	4
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.04	0.00	46.7	316.7	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.25	0.00	46.7	316.7	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.48	0.00	46.7	316.7	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	18.55	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.55	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.61	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Totals:										41	181	222

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.18	33.05	10.94	14.15	7.32	11.73	1.60e+6	60.00	57.00	37.24	40,209	402.77	11.11

Pole Num:	87W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.40	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026529 Deg	Longitude:	-84.458292 Deg	Elevation:	904.83089712481		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.9	0.0
Groundline	26.9	0.0
Vertical	15.1	22.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,718	233.0
Groundline	22,718	233.0
GL Allowable	86,519	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 233.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	328	34.9	10,164	44.7	11.8	795	319	3	798	11.7
Comms	335	35.6	5,893	25.9	6.8	461	647	6	467	6.9
PowerEquipments	55	5.8	2,147	9.5	2.5	168	1,216	12	180	2.6
Pole	193	20.5	3,448	15.2	4.0	270	1,980	19	289	4.2
Crossarms	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Streetlights	20	2.1	712	3.1	0.8	56	86	1	57	0.8
Insulators	9	0.9	311	1.4	0.4	24	87	1	25	0.4
Pole Load	940	100.0	22,718	100.0	26.3	1,778	4,430	42	1,820	26.8
Pole Reserve Capacity			63,801		73.7	5,022			4,980	73.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 233.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	411	43.7	13,317	58.6	15.4	1,042	1,680	16	1,058	15.6
Unknown, COMMUNICATION	335	35.6	5,911	26.0	6.8	463	675	6	469	6.9
Pole	193	20.5	3,448	15.2	4.0	270	1,980	19	289	4.2
<Undefined>	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Totals:	940	100.0	22,718	100.0	26.3	1,778	4,430	42	1,820	26.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.92	0.00	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,251	0	1,060	-5,191
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.92	0.00	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,566	0	513	7,079
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,144	123	1,042	-4,979
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,454	60	505	7,018
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,144	-126	1,042	-5,229

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	35.30	45.33	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,454	-61	505	6,897
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.80	6.66	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-4,662	18	791	-3,854
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.80	6.66	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	4,897	9	383	5,289
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.09	6.71	0.3980	0.28	0.145	123.3	137.1	123.3	2,128	-5,736	23	838	-4,876
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.09	6.71	0.3980	0.07	0.145	59.8	316.8	59.8	2,128	6,025	11	406	6,442
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.37	6.75	0.3980	0.28	0.145	123.3	137.1	123.3	2,128	-5,578	23	815	-4,740
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.37	6.75	0.3980	0.07	0.145	59.8	316.8	59.8	2,128	5,859	11	395	6,264
Totals:											1,739	90	8,291	10,121	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.95	7.20	1.3300	1.69	0.337	123.3	137.1	123.4	925	-1,715	58	1,174	-483
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.95	7.20	1.3300	0.75	0.337	59.8	316.8	59.8	925	1,802	28	569	2,399
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.02	7.32	1.5000	1.97	0.900	123.3	137.1	123.4	2,000	-3,311	103	1,146	-2,062
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.02	7.32	1.5000	0.85	0.900	59.8	316.8	59.8	2,000	3,478	50	555	4,082
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.27	7.36	1.5000	1.97	0.900	123.3	137.1	123.4	2,000	-3,155	103	1,092	-1,960
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.27	7.36	1.5000	0.85	0.900	59.8	316.8	59.8	2,000	3,314	50	529	3,893
		COMMUNICATION													
Totals:											412	392	5,064	5,868	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.89	21.97	310.0	310.0	640.00	47.00	--	24.00	--	502	1,635	2,138
Totals:											502	1,635	2,138	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.49	5.44	137.0	137.0	50.00	4.50	3.50	96.00	-5	47	42
Totals:											-5	47	42

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.86	4.34	225.0	225.0	45.00	24.00	20.00	3.00	36.00	237	472	709
Totals:												237	472	709

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.04	0.00	0.0	0.0	13.00	9.00	10.50	0	163	163	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.68	45.00	220.1	0.0	6.00	3.50	7.50	42	44	86	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.68	-45.00	53.9	0.0	6.00	3.50	7.50	-43	44	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.80	0.00	227.0	137.0	2.00	3.00	3.19	2	12	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.09	0.00	227.0	137.0	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.37	0.00	227.0	137.0	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.95	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.02	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.27	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Totals:											22	288	310

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.47	33.54	10.67	16.15	7.32	11.59	1.60e+6	60.00	57.00	35.04	29,351	293.36	6.62

34' 2" - 63W - NT

24' 9" - Lowest Power

21' 5" - Proposed Metronet

20' 9" - Highest Tel Cable

19' 11" - Highest Tel Drop

4' - Base offset

Base

34' 4" - 64W - 28930-2163

23' - Proposed Metronet

4' - Base offset

Base

35' 7" - 65W - 28930-2157

26' 5" - Lowest Power

22' - Proposed Metronet

19' 9" - Highest Tel Cable

18' 9" - Highest Tel Drop

4' - Base offset

Base

34' - 66W - 28930-2151

24' 3" - Lowest Power

20' 11" - Proposed Metronet

18' 4" - Highest Tel Cable

18' - Highest Tel Drop

4' - Base offset

Base

32' 9" - 67W - 28930-2143

24' 1" - Lowest Power

20' 6" - Proposed Metronet

18' 7" - Highest Tel Cable

17' 10" - Highest Tel Drop

4' - Base offset

Base

33' 9" - 68W - 28930-2141

25' 6" - Lowest Power

21' 2" - Proposed Metronet

18' 4" - Highest Tel Cable

4' - Base offset

Base

31' 5" - 69W - 28930-2137

23' 8" - Lowest Power

17' 5" - Proposed Metronet

15' 10" - Highest Tel Cable

4' - Base offset

Base

35' 11" - 70W - 28930-2135

22' 9" - Lowest Power

16' 11" - Proposed Metronet

15' 8" - Highest Tel Cable

13' 3" - Highest Tel Drop

4' - Base offset

Base

38' 11" - 71W - 28930-2129

25' 2" - Lowest Power

23' 1" - Proposed Metronet

22' 1" - Highest Tel Cable

20' - Highest Tel Drop

4' - Base offset

Base

38' 2" - 72W - 28930-2119

23' - Lowest Power

21' 10" - Highest Tel Cable

21' 10" - Highest Tel Drop

21' - Proposed Metronet

4' - Base offset

Base

36' 4" - 73W - 28930-2115

26' 10" - Lowest Power

21' 5" - Proposed Metronet

19' 1" - Highest Tel Cable

17' - Highest Tel Drop

4' - Base offset

Base

38' 8" - 74W - NT

23' 10" - Lowest Power

18' 9" - Proposed Metronet

16' 8" - Highest Tel Cable

4' - Base offset

Base

40' 3" - 75W - 28930-2111

24' 8" - Lowest Power

21' 4" - Proposed Metronet

19' 11" - Highest Tel Cable

19' 11" - Highest Tel Drop

4' - Base offset

Base

34' 8" - 76W - NT

25' - Lowest Power

20' 11" - Proposed Metronet

19' 1" - Highest Tel Cable

19' 1" - Highest Tel Drop

4' - Base offset

Base

33' 5" - 77W - 28930-2109

23' 11" - Lowest Power

20' 4" - Proposed Metronet

18' 11" - Highest Tel Cable

18' 11" - Highest Tel Drop

4' - Base offset

Base

33' 4" - 78W - NT

25' 10" - Lowest Power

21' 2" - Proposed Metronet

19' 1" - Highest Tel Drop

18' 5" - Highest Tel Cable

18' 5" - Base offset

Base

33' 7" - 79W - NT

21' 5" - Lowest Power

20' 11" - Highest Tel Drop

20' 2" - Proposed Metronet

19' 8" - Highest Tel Cable

4' - Base offset

Base

33' 10" - 80W - NT

21' 11" - Lowest Power

20' 3" - Proposed Metronet

17' 10" - Highest Tel Cable

17' 10" - Highest Tel Drop

4' - Base offset

Base

33' 3" - 81W - NT

22' 8" - Lowest Power

19' 11" - Proposed Metronet

18' 3" - Highest Tel Cable

18' 3" - Highest Tel Drop

4' - Base offset

Base

32' 4" - 82W - NT

21' 7" - Lowest Power

20' 8" - Proposed Metronet

18' 3" - Highest Tel Cable

18' 3" - Highest Tel Drop

4' - Base offset

Base

39' 7" - 83W - 27285-2049

25' 2" - Lowest Power

22' 5" - Proposed Metronet

20' 11" - Highest Tel Cable

4' - Base offset

Base

37' 5" - 84W - 27285-2045

23' 10" - Lowest Power

20' 6" - Proposed Metronet

18' 8" - Highest Tel Cable

18' 8" - Highest Tel Drop

4' - Base offset

Base

38' 8" - 85W - 27285-2033

21' 1" - Lowest Power

20' - Proposed Metronet

18' 1" - Highest Tel Cable

4' - Base offset

Base

37' 3" - 86W - NT

25' 9" - Lowest Power

19' 7" - Proposed Metronet

17' 7" - Highest Tel Cable

4' - Base offset

Base

35' - 87W - NT

23' 1" - Lowest Power

18' 11" - Proposed Metronet

16' - Highest Tel Cable

4' - Base offset

Base

From: Edwards, Kimberly
Sent: Friday, March 23, 2018 10:00 AM
To: Lauren.Sandefur@metronetinc.com; Nicole.Sugg@metronetinc.com
Cc: Hays, Sarah K; Lloyd, James; Rucker, Jamie
Subject: FW: METRONET CONSTRUCTION

Importance: High

Lauren/Nicole,

Please see the email string below regarding Windstream cut cables – at 248 Catera Trace and another on Darlington Circle. Is the MetroNet contractor contacting 811 or taking normal precautions before digging? This is impacting Windstream customers in the area and this is completely unacceptable. Windstream has escalating concerns on how many Windstream cables are being cut. What are the next steps to getting these issues addressed and to have the cuts Windstream has identified properly fixed? Will MetroNet please send notification of all cuts to Windstream for inspection and to properly resolve? We would like to have a meeting as soon as possible to discuss this in detail.

Please advise ASAP.

Thank you,

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Williamson, Tim
Sent: Thursday, March 22, 2018 4:50 PM
To: Henson, Jason <Jason.Henson@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>
Cc: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Trimble, David <David.Trimble@windstream.com>; Roberts, Barry <Barry.Roberts@windstream.com>; McAbee, Phillip <Phillip.McAbee@windstream.com>
Subject: RE: METRONET CONSTRUCTION

Thanks Jason! We need to stop these actions.

Timothy Williamson

Director of Field Operations | Windstream Lexington KY

130 W. New Circle Rd. Suite 170 Lexington, KY 40505

O: 859-357-6105 / M: 859-421-9766

tim.williamson@windstream.com | windstreambusiness.com

From: Henson, Jason
Sent: Thursday, March 22, 2018 5:49 PM
To: Williamson, Tim <Tim.Williamson@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>
Cc: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Trimble, David <David.Trimble@windstream.com>;

Roberts, Barry <Barry.Roberts@windstream.com>; McAbee, Phillip <Phillip.McAbee@windstream.com>

Subject: Re: METRONET CONSTRUCTION

Tim,

I have sent this down to James Lloyd as well. Hoping they may have some contacts from the Joint Use discussions they had with Metronet.

Jason Henson
OSP Design Manager KY-NY-PA
c:859-361-0323 o:859-258-2196
jason.henson@windstream.com

On Mar 22, 2018, at 5:41 PM, Williamson, Tim <Tim.Williamson@windstream.com> wrote:

Barry and David,

Who do we address this with? This is just some of what we have.

Timothy Williamson
Director of Field Operations | Windstream Lexington KY
130 W. New Circle Rd. Suite 170 Lexington, KY 40505
O: 859-357-6105 / M: 859-421-9766
tim.williamson@windstream.com | windstreambusiness.com

From: Mateyoke, Charles
Sent: Thursday, March 22, 2018 5:16 PM
To: Williamson, Tim <Tim.Williamson@windstream.com>; Henson, Jason <Jason.Henson@windstream.com>; Trimble, David <David.Trimble@windstream.com>
Subject: METRONET CONSTRUCTION

Just to update everyone Metro net has cut two more cables today. One at 248 Catera Trace a 200 pair cable in the East and one on Darlington Circle in the Lakeside was a 400 pair, possible dead cable though. The other thing that has come up is there are numerous buried drops that have been cut during this process as well. Metronet contractor is putting wire nuts on the pairs and then taping it up with electrical tape and then putting back in the ground and covering it up. We know of 4 – 5 drops, but do not know how many they have done that we do not know about. Without having the Ranger-seal closure on the splice, it will sooner or later go bad and will need replaced. I am not quite sure what steps should be taken either by Metronet to let us know a drop has been cut or to prevent them from splicing them together the way they are.

Tom Mateyoke
Local Manager - Operations | Windstream
1401 Higbee Mill Road | Lexington, KY 40503
o: 859 272-0214 | m: 859 221-7914
charles.mateyoke@windstream.com

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Friday, March 30, 2018 10:58 AM
To: Hays, Sarah K
Subject: Lexington Call

Good Morning Sarah,

We are needing to set up a biweekly call for the Lexington market, any day/time works for me except: Monday 8-10am and Friday 9-10am.

The attendees will just be myself, Addison Burk and Nicole Sugg.

Thanks!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, March 08, 2018 4:29 PM
To: Hays, Sarah K
Subject: LX Pole Photos

Good afternoon Sarah,

As far as our pole photos for PLA do we model the pole as it is today (Existing) or with make ready and proposed Metronet plant installed?

I would assume the second since we are doing our own make ready for these poles?

Thanks,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, March 22, 2018 9:04 AM
To: Windstream Jointuse; Hays, Sarah K
Cc: Permits
Subject: LX132-02W
Attachments: LX132-02W - METRONET POLE INVENTORY REPORT.xlsx; LX132-02W - Windstream Inventory Report.pdf; LX132-02W POLE APP MAP.pdf; O-Calcs.pdf; Pole Photos.pdf; Map Key.pdf

Categories: Rejected

Good morning,
Please see attached for proposal titled LX132-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX132-02W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		74W	505-8	40/ 3	WS	3=Elec
KU	0	74W	505-8		WS	
Windstream	14	74W	505-8		WS	
Total Pole Count	14	74W	505-8		WS	
Total Needing Make Ready	2	74W	505-8		WS	
		74W	505-8		WS	
		74W	505-8		WS	
		74W	505-8		WS	
		74W	505-8		WS	
		81W	505-8-40	35/ 4	WS	1=None
		81W	505-8-40		WS	
		81W	505-8-40		WS	
		81W	505-8-40		WS	
		81W	505-8-40		WS	
		81W	505-8-40		WS	
		81W	505-8-40		WS	
		81W	505-8-40		WS	
		82W	501-69	50/ 2	WS	1=None
		82W	501-69		WS	
		82W	501-69		WS	
		82W	501-69		WS	
		82W	501-69		WS	
		82W	501-69		WS	
		82W	501-69		WS	
		82W	501-69		WS	
		153W	501-67	40/3	WS	1=None
		153W	501-67		WS	
		153W	501-66		WS	
		153W	501-67		WS	
		153W	501-67		WS	
		153W	501-67		WS	
		153W	501-67		WS	
		153W	501-67		WS	

153W 501-67		WS	
153W 501-67		WS	
153W 501-67		WS	
153W 501-67		WS	
153W 501-67		WS	
153W 501-67		WS	
153W 501-67		WS	
153W 501-67		WS	
154W 501-67-60	35/4	WS	1=None
154W 501-67-60		WS	
154W 501-67-60		WS	
154W 501-67-60		WS	
154W 501-67-60		WS	
155W 501-68	35/4	WS	1=None
155W 501-68		WS	
155W 501-68		WS	
155W 501-68		WS	
155W 501-68		WS	
156W NT	45/3	WS	1=None
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
157W 501-54-50	45/3	WS	1=None
157W 501-54-50		WS	
157W 501-54-50		WS	
157W 501-54-50		WS	
157W 501-54-50		WS	
157W 501-54-50		WS	
157W 501-54-50		WS	
158W NT	40/3	WS	2=Comms
158W NT		WS	
158W NT		WS	
158W NT		WS	
158W NT		WS	
158W NT		WS	
158W NT		WS	
158W NT		WS	
158W NT		WS	

159W NT	45/3	WS	1=None
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
159W NT		WS	
160W NT	40/4	WS	1=None
160W NT		WS	
160W NT		WS	
160W NT		WS	
161W 00501-52	35/4	WS	1=None
161W 00501-52		WS	
161W 00501-52		WS	
161W 00501-52		WS	
162W NT	35/4	WS	1=None
162W NT		WS	
162W NT		WS	
162W NT		WS	
162W NT		WS	
173W NT	35/5	WS	1=None
173W NT		WS	
173W NT		WS	
173W NT		WS	
173W NT		WS	
173W NT		WS	
173W NT		WS	
173W NT		WS	
173W NT		WS	
END			

Owner	1=None 4=Comms&Elec	2=Comms 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
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	53.80	796 CADEN LN		38.01246	-84.42666		KU	
				38.01246	-84.42666		KU	
				38.01246	-84.42666		KU	
Raise streetlight				38.01246	-84.42666		KU	
				38.01246	-84.42666		Metronet	
				38.01246	-84.42666		Charter	
				38.01246	-84.42666		Charter	
				38.01246	-84.42666		Windstream	
				38.01246	-84.42666		Windstream	
	18.10	2852 CADENTOWN RD		38.01270	-84.42680		Metronet	
				38.01270	-84.42680		Metronet	
				38.01270	-84.42680		Charter	
				38.01270	-84.42680		Charter	
				38.01270	-84.42680		Charter	
				38.01270	-84.42680		Windstream	
				38.01270	-84.42680		Windstream	
				38.01270	-84.42680		Windstream	
	12.00	3097 OLD TODDS RD		38.00969	-84.42321		Metronet	
				38.00969	-84.42321		Metronet	
				38.00969	-84.42321		Charter	
				38.00969	-84.42321		Charter	
				38.00969	-84.42321		Windstream	
				38.00969	-84.42321		Windstream	
				38.00969	-84.42321		Windstream	
				38.00969	-84.42321		Windstream	
	38.80	2986 OLD TODDS RD		38.00946	-84.42482		KU	
				38.00946	-84.42482		KU	
				38.00946	-84.42482		Metronet	
				38.00946	-84.42482		Metronet	
				38.00946	-84.42482		Level 3	
				38.00946	-84.42482		Level 3	
				38.00946	-84.42482		Charter	
				38.00946	-84.42482		Charter	

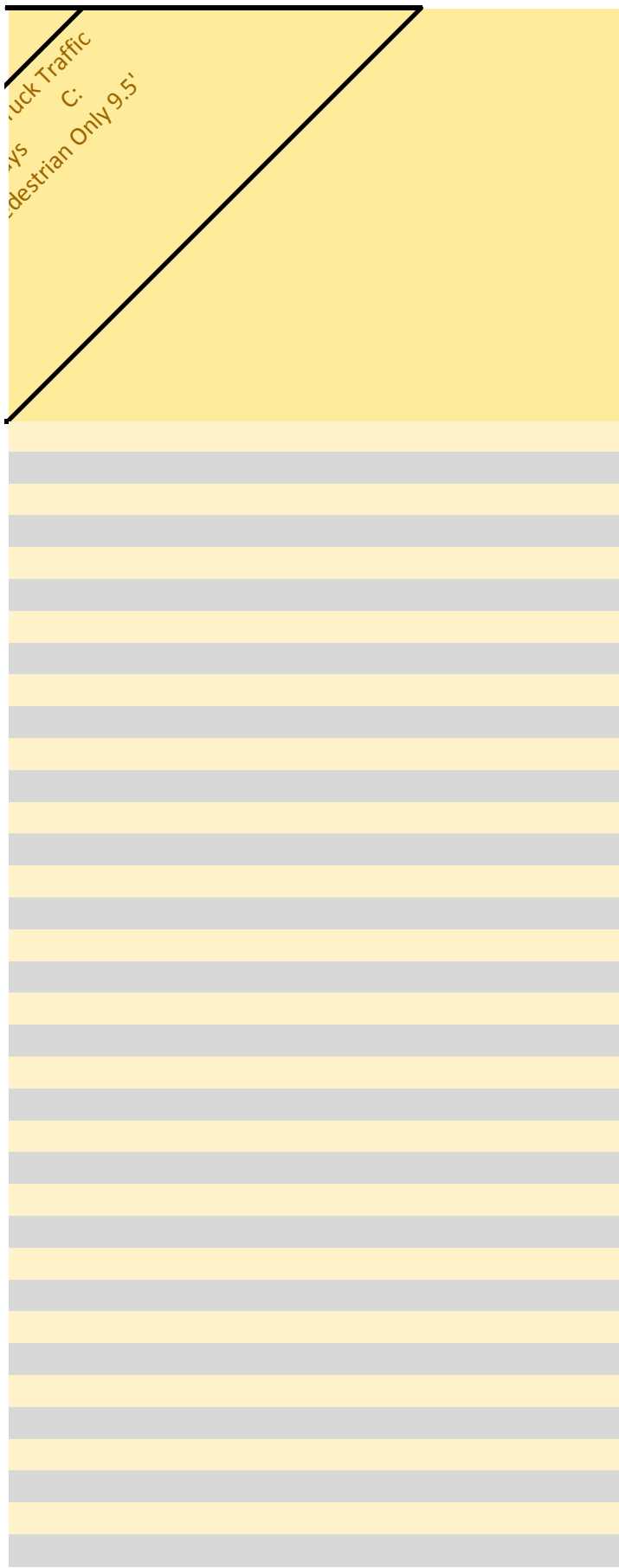
49.60	3019 OLD TODDS RD	38.00892	-84.43145	KU
		38.00892	-84.43145	KU
		38.00892	-84.43145	KU
		38.00892	-84.43145	KU
		38.00892	-84.43145	KU
		38.00892	-84.43145	Metronet
		38.00892	-84.43145	Charter
		38.00892	-84.43145	Windstream
		38.00892	-84.43145	Windstream
		38.00892	-84.43145	Windstream
33.10	3011 OLD TODDS RD	38.00904	-84.43236	KU
		38.00904	-84.43236	KU
		38.00904	-84.43236	KU
		38.00904	-84.43236	Metronet
31.50	3017 OLD TODDS RD	38.00897	-84.43191	Metronet
		38.00897	-84.43191	Charter
		38.00897	-84.43191	Windstream
		38.00897	-84.43191	Windstream
24.40	3025 OLD TODDS RD	38.00891	-84.43240	Metronet
		38.00891	-84.43240	Metronet
		38.00891	-84.43240	Charter
		38.00891	-84.43240	Windstream
		38.00891	-84.43240	Windstream
31.20	212 SHADOW WOOD	38.01000	-84.44363	KU
		38.01000	-84.44363	KU
		38.01000	-84.44363	Metronet
		38.01000	-84.44363	Metronet
		38.01000	-84.44363	Charter
		38.01000	-84.44363	Charter
		38.01000	-84.44363	Windstream
		38.01000	-84.44363	Windstream
		38.01000	-84.44363	Windstream

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
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Primary	33'0"			Y	N		D: Pedestrian Only 9.5'			
Neutral	29'1"			Y	N					
Secondary	28'6"			Y	N					
Streetlight	24'9"	26'2"		Y	N					
Communication		25'2"		Y	N					
Communication	24'2"		51	Y	N					
Communication	23'3"			Y	N					
Communication	21'11"	20'9"		Y	N					
Communication	20'10"			Y	N					
Communication		22'4"	N/A	Y	N/A		B: Residential/Over Driveways			
Communication		22'0"		Y	N/A					
Communication	21'0"			Y	N/A					
Communication	20'6"			Y	N/A					
Communication	20'1"			Y	N/A					
Communication	19'11"			Y	N/A					
Communication	19'8"	17'8"		Y	N/A					
Communication	19'2"			Y	N/A					
Communication		35'0"		N	N		D: Pedestrian Only 9.5'			
Communication		34'8"		N	N					
Communication	33'8"		N/A	N	N					
Communication	32'6"			N	N					
Communication	29'7"			N	N					
Communication	28'4"			N	N					
Communication	27'7"			N	N					
Communication	26'9"	20'0"		N	N					
Secondary	32' 5"			N	N		B: Residential/Over Driveways			
Streetlight	30' 10"			N	N					
Communication		28' 5"		N	N					
Communication		28' 1"		N	N					
Communication	27' 1"		N/A	N	N					
Communication	26' 11"			N	N					
Communication	26' 2"			N	N					
Communication	25' 8"			N	N					

Communication	23' 11"		N	N	
Communication	23' 9"		N	N	
Communication	23' 0"		N	N	
Communication	21' 3"		N	N	
Communication	21' 1"		N	N	
Communication	20' 3"		N	N	
Communication	20' 1"	21'4"	N	N	
Communication		28' 5"	N	N	B:Residential/Over Driveways
Communication	27' 5"	N/A	N	N	
Communication	26' 6"		N	N	
Communication	25' 7"		N	N	
Communication	24' 7"	23'8"	N	N	
Communication		27' 7"	N	N	B:Residential/Over Driveways
Communication	26' 7"	N/A	N	N	
Communication	25' 6"		N	N	
Communication	24' 7"		N	N	
Communication	23' 8"	27'5"	N	N	
Primary	38' 1"		N	N	D: Pedestrian Only 9.5'
Primary	36' 10"		N	N	
Neutral	32' 4"		N	N	
Communication		27' 3"	N	N	
Communication	26' 3"	115	N	N	
Communication	24' 9"		N	N	
Communication	23' 3"		N	N	
Communication	22' 0"		N	N	
Communication	21' 1"		N	N	
Communication	20' 1"	17'2"	N	N	
Primary	37' 0"		N	N	B:Residential/Over Driveways
Neutral	31' 3"		N	N	
Communication		23' 0"	N	N	
Communication	22' 0"	101	N	N	
Communication	20' 6"		N	N	
Communication	19' 5"		N	N	
Communication	18' 4"	16'2"	N	N	
Primary	28' 11"		Y	N	D: Pedestrian Only 9.5'
Streetlight	22' 5"		Y	N	
Neutral	21' 10"		Y	N	
Secondary Riser	19' 6"		Y	N	
Communication		16' 1"	Y	N	
Communication	16' 5"	15' 1"	46	Y	N
Communication	15' 5"	14' 1"		Y	N
Communication	14' 5"	13' 1"		Y	N
Communication	13' 5"	12" 1"	11'3"	Y	N

Primary	37' 3"		N	N	D: Pedestrian Only 9.5'	
Transformer	32' 10"		N	N		
Neutral	31' 3"		N	N		
Secondary	30' 5"		N	N		
Streetlight	27' 8"		N	N		
Communication		23' 0"	N	N		
Communication	22' 0"		N/A	N	N	
Communication	21' 0"		N	N		
Communication	19' 9"		N	N		
Communication	18' 8"	16'10"	N	N		
<hr/>						
Primary	33' 6"		N	N	N/A	
Neutral	30' 1"		N	N		
Secondary	29' 3"		N/A	N	N	
Communication		25' 11"	N/A	N	N	
<hr/>						
Communication		25' 3"		N	N	B:Residential/Over Driveways
Communication	24' 3"		N/A	N	N	
Communication	22' 8"		N	N		
Communication	21' 8"	18'8"	N	N		
<hr/>						
Communication		24' 5"		N	Y	B:Residential/Over Driveways
Communication		24' 1"		N	Y	
Communication	23' 1"		N/A	N	Y	
Communication	22' 1"		N	Y		
Communication	21' 1"	14'7"	N	Y		
<hr/>						
OH Guy	28' 11"		N	N	D: Pedestrian Only 9.5'	
OH Guy	27' 9"		N	N		
Communication		25' 4"	N	N		
Communication		25' 0"	N	N		
Communication	24' 0"		N/A	N	N	
Communication	23' 7"		N	N		
Communication	22' 10"		N	N		
Communication	22' 7"		N	N		
Communication	17' 6"	19'8"	N	N		
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NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!!!

EXHIBIT B PROPOSAL #: LX132-02W

Windstream CORPORATION
APPLICATION FOR POLE LICENSE
Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC
Contact Name: LAUREN SANDEFUR 812-213-1328
Phone #: Phone #
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715
Authorized Signature & Date:

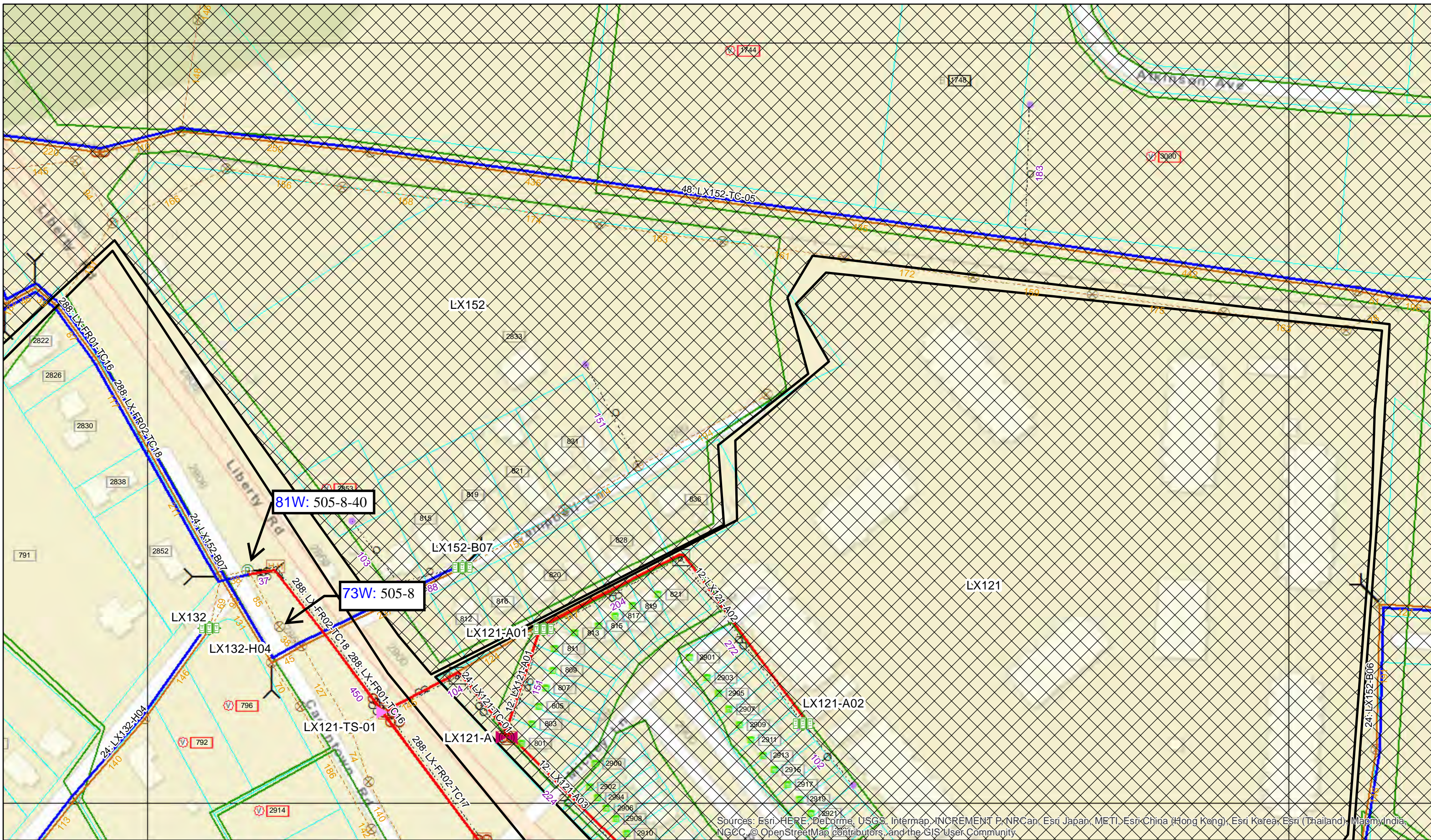
Lauren Sandefur 3/22/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project. If we choose to proceed all ESTIMATED fees, including engineering & makeredy MUST BE PAID IN FULL UP FRONT. NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD. NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachments on poles	# & type of Attachments	Height Licensee to attach at	Licensee Work Description	Bill for Rent Y or N
1	505-8	74W	40, 3, WXXM	21'11"	N/A	24'9"		(1) Fiber/Strand			
2	505-8-40	81W	2852 Cadentown Rd, Lexington, Ky 40509	19'11"	N/A	N/A		(2) Fiber/Strand			
3	501-69	82W	3097 Old Todds Rd, Lexington, Ky 40509	29'7"	N/A	N/A		(2) Fiber/Strand			
4	501-67	153W	2986 Old Todds Rd, Lexington, Ky 40509	23'11"	N/A	30'10"		(2) Fiber/Strand			
5	501-67-60	154W	3097 Old Todds Rd, Lexington, Ky 40509	25'7"	N/A	N/A		(1) Fiber/Strand			
6	501-68	155W	3097 Old Todds Rd, Lexington, Ky 40509	24'7"	N/A	N/A		(1) Fiber/Strand			
7	NT	156W	3041 Old Todds Rd, Lexington, Ky 40509	26'3"	N/A	32'4"		(1) Fiber/Strand			
8	501-54-50	157W	3041 Old Todds Rd, Lexington, Ky 40509	20'6"	N/A	31'3"		(1) Fiber/Strand			
9	NT	158W	3031 Old Todds Rd, Lexington, Ky 40509	15'5"	N/A	19'6"		(1) Fiber/Strand			
10	NT	159W	3019 Old Todds Rd, Lexington, Ky 40509	21'0"	N/A	27'8"		(1) Fiber/Strand			
11	NT	160W	3011 Old Todds Rd, Lexington, Ky 40509	N/A	N/A	29'3"		(1) Fiber/Strand			
12	00501-52	162W	3017 Old Todds Rd, Lexington, Ky 40509	22'8"	N/A	N/A		(1) Fiber/Strand			
13	NT	161W	3025 Old Todds Rd, Lexington, Ky 40509	22'1"	N/A	N/A		(2) Fiber/Strand			
14	NT	173W	212 Shadow Wood Pl, Lexington, Ky 40509	22'10"	N/A	27'9"		(2) Fiber/Strand			

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com
Windstream OSP Construction Manager/Engineer Authorized Signature & Date:



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, OpenStreetMap contributors, and the GIS User Community.

LXAS41
 PROJECT NUMBER:
 LXTNXY.00437.CB
 DATE: 12/13/2017
 USER NAME: arqjls
 DESIGN ENG

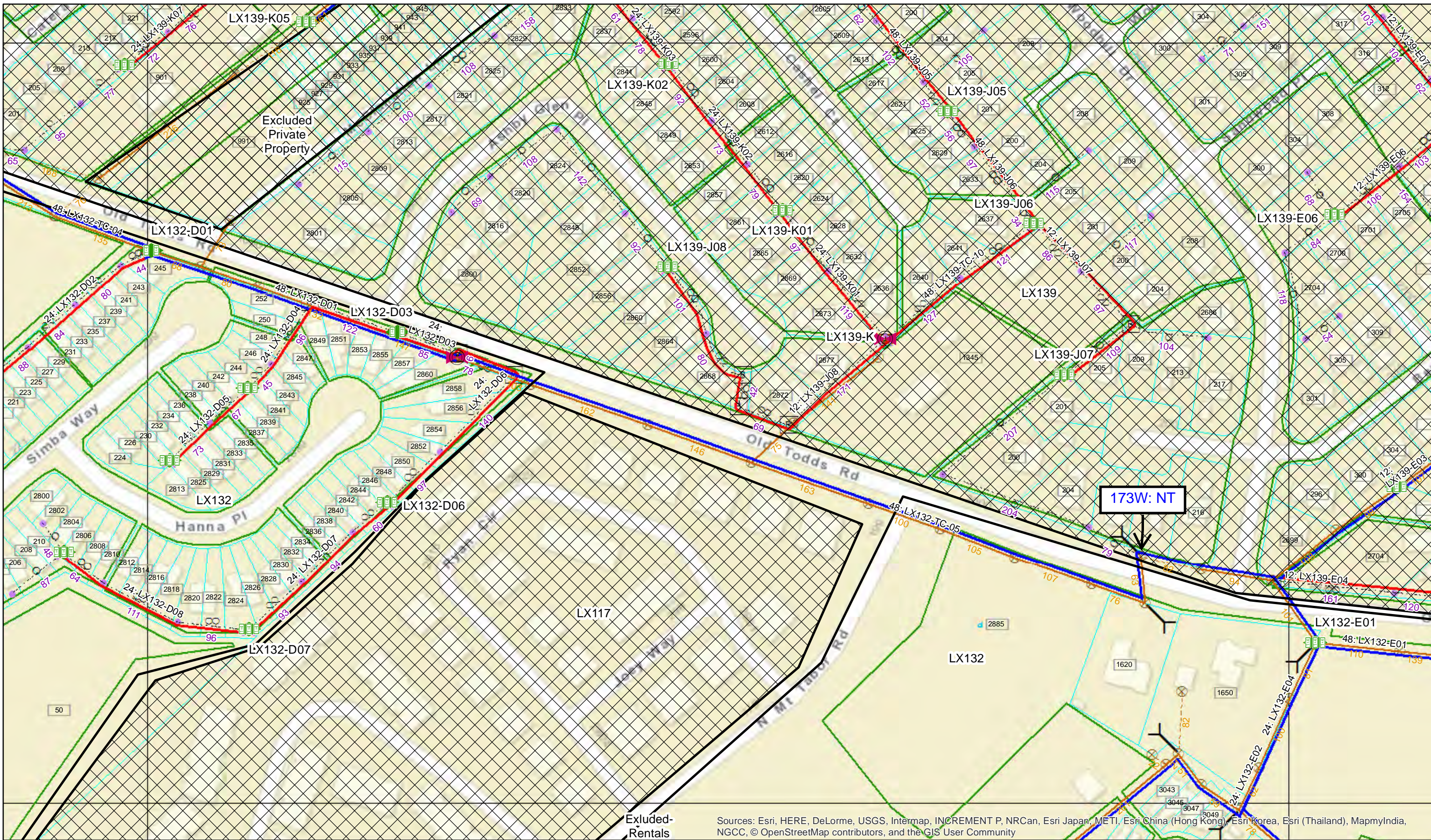
STAKING GRID DRAWING
 ROUTE: LX132 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715





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LXAR37

DESIGN ENG
 USER NAME: argris
 DATE: 12/13/2017
 PROJECT NUMBER:
 LXTNXY.00437.CB

STAKING GRID DRAWING

ROUTE: LX132 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

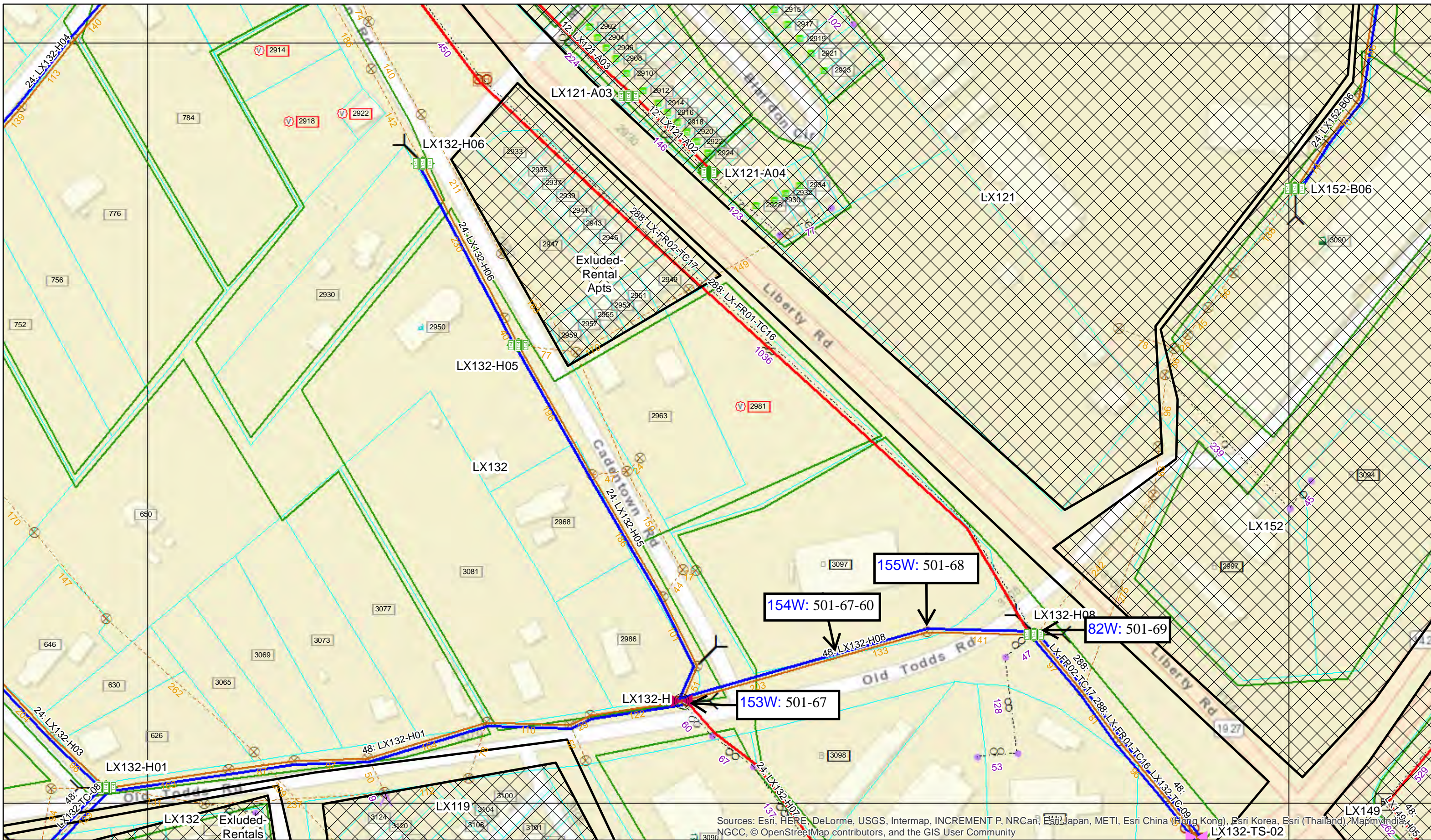
REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAR41
 PROJECT NUMBER:
 LXTNXY.00437.CB

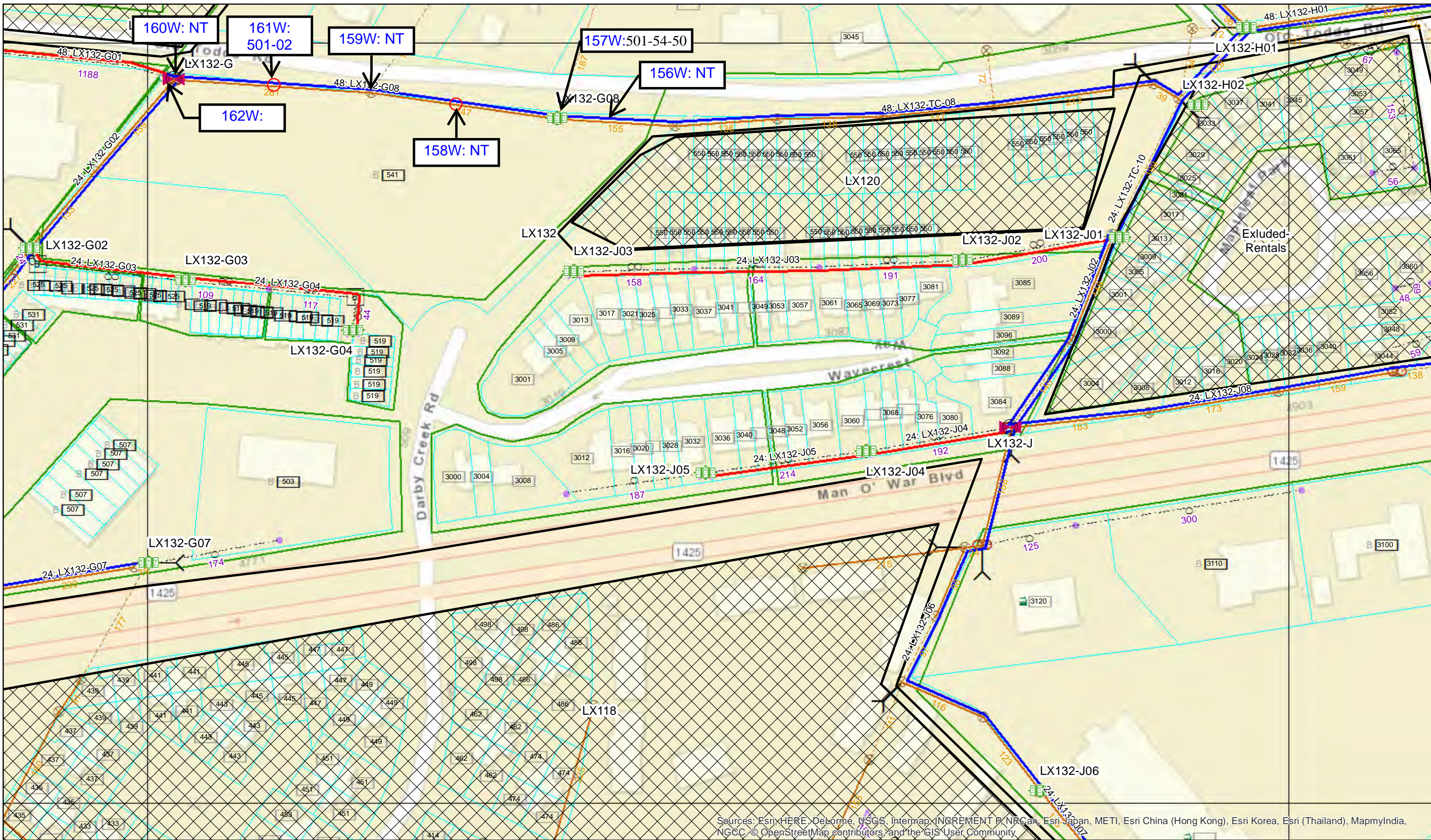
STAKING GRID DRAWING
 ROUTE: LX132 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAQ40
 PROJECT NUMBER:
 LXTNXY00437.CB
 DATE: 12/13/2017
 USER NAME: arqjis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX132 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

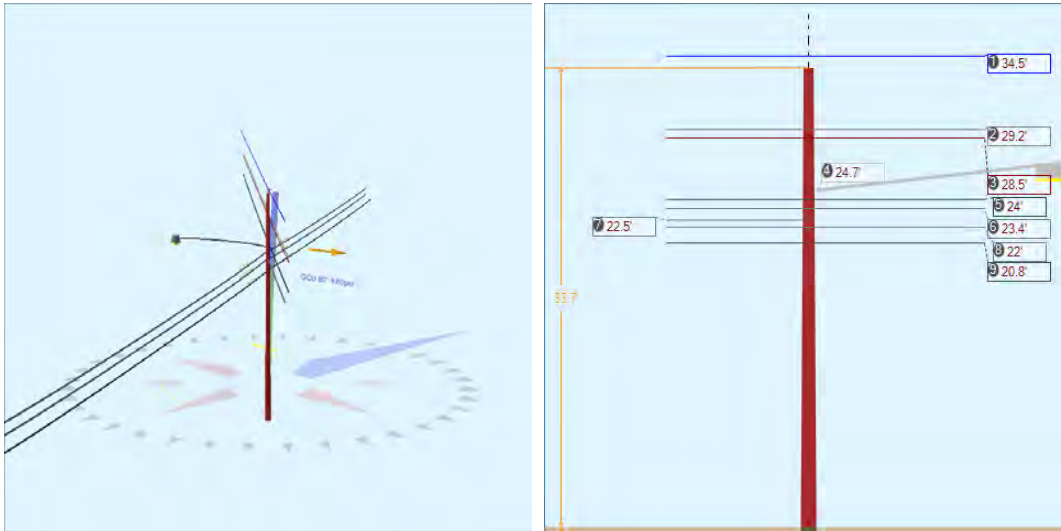
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN) Footage	ROADS
AERIAL (SLACK SPAN) Footage	WORK POINTS
NEW / PROPOSED TRENCH Footage	RAILROADS
EXISTING INHERITED TRENCH Footage	

Pole Num:	74W - 505-8	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.33	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.87	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012464 Deg	Longitude:	-84.426656 Deg	Elevation:	944.504251672185		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	53.8	0.0
Groundline	53.8	0.0
Vertical	7.5	18.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	44,185	113.6
Groundline	44,185	113.6
GL Allowable	82,837	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 113.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	37	1.9	1,160	2.6	1.4	95	112	1	96	1.4
Comms	1,760	88.5	39,573	89.6	47.8	3,243	830	8	3,251	47.8
Pole	153	7.7	2,634	6.0	3.2	216	1,867	18	234	3.4
Streetlights	34	1.7	661	1.5	0.8	54	218	2	56	0.8
Insulators	5	0.2	158	0.4	0.2	13	80	1	14	0.2
Pole Load	1,989	100.0	44,185	100.0	53.3	3,621	3,107	30	3,651	53.7
Pole Reserve Capacity			38,652		46.7	3,179			3,149	46.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 113.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	76	3.8	1,975	4.5	2.4	162	363	4	165	2.4
Unknown, COMMUNICATION	1,760	88.5	39,577	89.6	47.8	3,243	877	9	3,252	47.8
Pole	153	7.7	2,634	6.0	3.2	216	1,867	18	234	3.4
Totals:	1,989	100.0	44,185	100.0	53.3	3,621	3,107	30	3,651	53.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.55	0.00	0.3250	0.02	0.107	35.8	130.9	35.8	1,684	72,230	0	69	72,299
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.55	0.00	0.3250	0.14	0.107	102.1	311.3	102.1	1,684	-72,072	0	202	-71,870
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	29.17	6.43	0.3250	0.02	0.107	35.8	130.9	35.8	1,684	60,975	2	58	61,035
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	29.17	6.43	0.3250	0.14	0.107	102.1	311.3	102.1	1,684	-60,841	4	170	-60,667
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.53	6.47	0.3250	0.02	0.107	35.8	130.9	35.8	1,684	59,634	2	57	59,692
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.53	6.47	0.3250	0.14	0.107	102.1	311.3	102.1	1,684	-59,503	4	166	-59,332
Totals:											424	12	722	1,158

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.04	6.75	1.3300	0.44	0.337	35.8	130.9	35.8	925	27,603	5	106	27,713
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.04	6.75	1.3300	1.35	0.337	102.1	311.3	102.1	925	-27,542	13	311	-27,218
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.37	6.79	1.5000	1.63	0.900	105.7	150.6	105.7	2,000	48,520	-49	818	49,289
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.37	6.79	1.5000	1.26	0.900	84.6	330.6	84.6	2,000	-48,520	-39	655	-47,904
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.52	6.84	1.5000	0.53	0.900	35.8	130.9	35.8	1,250	34,939	27	109	35,074
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.99	6.87	1.5000	1.63	0.900	105.7	150.6	105.7	2,000	45,663	-49	770	46,384
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.99	6.87	1.5000	1.26	0.900	84.6	330.6	84.6	2,000	-45,663	-40	617	-45,086
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.84	6.94	1.3300	1.41	0.337	105.7	150.6	105.7	925	20,015	29	668	20,711
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.84	6.94	1.3300	1.09	0.337	84.6	330.6	84.6	925	-20,015	23	535	-19,458
		COMMUNICATION													
Totals:											34,999	-81	4,588	39,507	

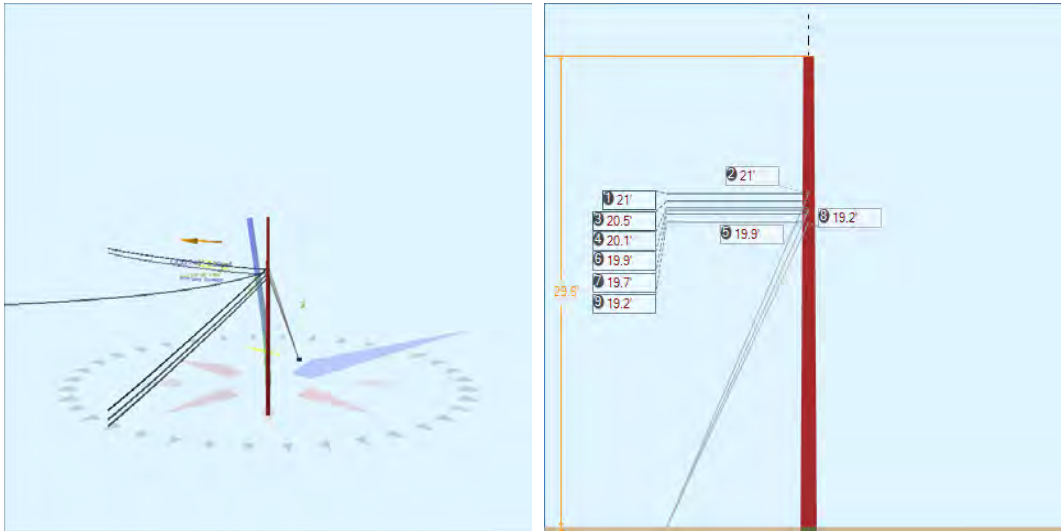
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 15 ft. Arm	KU, UTILITY	24.72	4.21	208.0	208.0	115.00	24.00	20.00	3.00	180.00	-181	841	660
Totals:											-181	841	660	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.67	0.00	0.0	0.0	13.00	9.00	10.50	0	131	131
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.17	0.00	40.6	310.6	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.53	0.00	40.6	310.6	2.00	3.00	3.19	1	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	24.04	0.00	40.6	310.6	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	23.37	0.00	240.1	330.1	5.00	3.00	0.00	-3	0	-3

Bolt	Single Bolt	Unknown, COMMUNICATION	22.52	0.00	129.9	219.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.99	0.00	240.1	330.1	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	20.84	0.00	60.1	330.1	5.00	3.00	0.00	3	0	3
Totals:										5	153	158

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.90	33.02	10.66	12.67	7.32	11.42	1.60e+6	60.00	57.00	33.67	41,363	414.32	13.33

Pole Num:	81W - 505-8-40	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.40	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.72	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.012695 Deg	Longitude:	-84.426803 Deg	Elevation:	937.117140469058		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	18.1	0.0
Groundline	18.1	0.0
Vertical	6.0	19.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,161	201.2
Groundline	9,161	201.2
GL Allowable	57,257	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.3	333.4		42.2	240.0	43.4	150.0
? EHS 1/4 (Down)			21.0	46.4	240.0	52.5	150.0
? EHS 1/4 (Down)			19.9	47.2	240.0	53.3	150.0
? EHS 1/4 (Down)			19.2	47.6	240.0	53.6	150.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 201.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	4,448	572.3	55,661	607.6	97.2	10,505	505	6	10,511	154.6
GuyBraces	-3,784	-486.8	-47,609	-519.7	-83.2	-8,986	9,438	118	-8,868	-130.4
Pole	113	14.5	1,098	12.0	1.9	207	1,314	16	224	3.3
Insulators	0	0.0	12	0.1	0.0	2	57	1	3	0.0
Pole Load	777	100.0	9,161	100.0	16.0	1,729	11,313	141	1,870	27.5
Pole Reserve Capacity			48,096		84.0	5,071			4,930	72.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 201.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Brighthouse Networks, COMMUNICATION	-380	-48.9	-5,015	-54.7	-8.8	-946	3,284	41	-905	-13.3
AT&T, COMMUNICATION	1,044	134.3	13,078	142.8	22.8	2,468	6,716	84	2,552	37.5
Pole	113	14.5	1,098	12.0	1.9	207	1,314	16	224	3.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	777	100.0	9,161	100.0	16.0	1,729	11,313	141	1,870	27.5

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Brighthouse Networks,	20.96	6.34	1.3300	1.12	0.337	86.0	147.0	86.0	925	14,762	21	779	15,562
CATV	CATV 1.0	Brighthouse Networks,	20.50	6.37	1.3300	0.44	0.337	35.8	259.5	35.8	125	1,748	8	111	1,867
Telco	TELE 1.5	AT&T, COMMUNICATION	20.08	6.39	1.5000	1.35	0.900	90.2	212.8	90.7	250	6,393	65	-97	6,360
Telco	TELE 1.5	AT&T, COMMUNICATION	19.92	6.40	1.5000	1.28	0.900	86.0	147.0	86.0	2,000	30,335	37	809	31,181
Telco	TELE 1.5	AT&T, COMMUNICATION	19.69	6.41	1.5000	0.49	0.900	35.8	259.5	35.8	250	3,358	14	117	3,488

Telco	TELE 1.5	AT&T, COMMUNICATION	19.17	6.44	1.5000	1.28	0.900	86.0	147.0	86.0	2,000	29,181	37	778	29,996
											Totals:	85,776	181	2,497	88,454

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Bolt	Single Bolt	Brighthouse Networks, COMMUNICATION	20.96	0.00	147.0	237.0	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	Brighthouse Networks, COMMUNICATION	20.50	0.00	259.5	349.5	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	AT&T, COMMUNICATION	20.08	0.00	212.8	302.8	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	AT&T, COMMUNICATION	19.92	0.00	147.0	237.0	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	AT&T, COMMUNICATION	19.69	0.00	259.5	349.5	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	AT&T, COMMUNICATION	19.17	0.00	147.0	237.0	5.00	3.00	0.00	3	0	3	
										Totals:	19	0	19

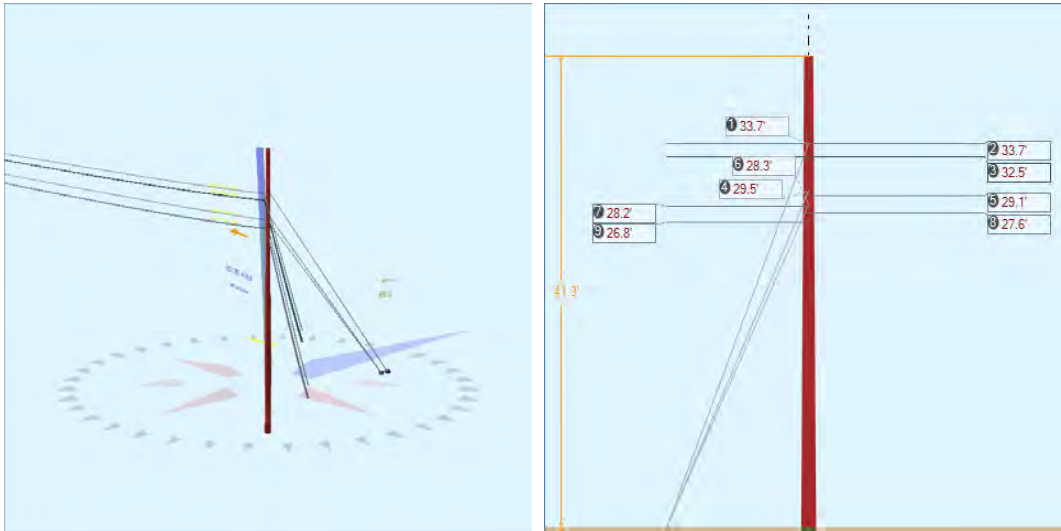
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Brighthouse Networks, COMMUNICATION	20.96	0.00	18.30	0.25	75.00	333.4	48.7	0.121	26.12	1.03
EHS 1/4	Down	AT&T, COMMUNICATION	19.92	0.00	18.30	0.25	75.00	333.4	47.3	0.121	25.33	1.01
EHS 1/4	Down	AT&T, COMMUNICATION	19.17	0.00	18.30	0.25	75.00	333.4	46.2	0.121	24.77	1.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)		
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,145	2,859	2,779	2,088	1,833	-1,232	-25,404	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,188	2,898	2,824	2,075	1,916	-1,287	-25,253	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,208	2,916	2,846	2,053	1,971	-1,324	-25,003	
										Totals:	6,217	5,719	-3,843	-75,659

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	18.30	333.4	20,000	1.00	20,000	8,672	8,447	43.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.33	33.31	9.35	13.92	6.69	10.10	1.60e+6	60.00	57.00	29.60	187,479	1885.53	16.67

Pole Num:	82W - 501-69	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.66	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.97	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009692 Deg	Longitude:	-84.423210 Deg	Elevation:	913.842824861854		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	12.0	289.3
Groundline	12.0	289.3
Vertical	4.3	203.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,364	289.3
Groundline	13,364	289.3
GL Allowable	123,418	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	23.3	22.8		8.6	289.3	10.0	200.0
? EHS 1/4 (Down)			33.7	28.8	289.3	36.9	200.0
? Single Helix Anchor	22.0	23.5		18.8	289.3	21.3	200.0
? EHS 1/4 (Down)			29.5	31.2	289.3	38.8	200.0
? EHS 1/4 (Down)			28.3	31.7	289.3	39.4	200.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 257.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	2,250	375.7	54,078	404.7	43.8	3,816	732	5	3,821	56.2
GuyBraces	-1,867	-311.6	-44,186	-330.6	-35.8	-3,118	6,682	50	-3,068	-45.1
Pole	215	35.9	3,461	25.9	2.8	244	2,889	22	266	3.9
Insulators	0	0.0	11	0.1	0.0	1	57	0	1	0.0
Pole Load	599	100.0	13,364	100.0	10.8	943	10,361	78	1,020	15.0
Pole Reserve Capacity			110,054		89.2	5,857			5,780	85.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 257.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	122	20.4	4,379	32.8	3.6	309	2,511	19	328	4.8
Brighthouse Networks, COMMUNICATION	-80	-13.4	-2,454	-18.4	-2.0	-173	2,340	18	-156	-2.3
AT&T, COMMUNICATION	342	57.1	7,978	59.7	6.5	563	2,620	20	583	8.6
Pole	215	35.9	3,461	25.9	2.8	244	2,889	22	266	3.9
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	599	100.0	13,364	100.0	10.8	943	10,361	78	1,020	15.0

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	33.66	6.95	0.6570	1.24	0.190	99.1	132.6	99.1	750	-18,763	21	365	-18,377
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	33.66	6.95	0.6570	1.87	0.190	140.5	274.5	140.5	750	31,380	30	-119	31,291
CATV	CATV 1.0	Brighthouse Networks, COMMUNICATION	32.51	7.02	1.3300	1.29	0.337	99.1	132.6	99.1	925	-22,351	37	558	-21,756

CATV	CATV 1.0	Brighthouse Networks,	32.51	7.02	1.3300	1.95	0.337	140.5	274.5	140.5	925	37,381	53	-182	37,252
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	28.17	7.29	0.6570	1.24	0.190	99.1	132.6	99.1	750	-15,701	-15	306	-15,410
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.08	7.23	0.6570	1.87	0.190	140.5	274.5	140.5	750	27,113	36	-103	27,046
		COMMUNICATION													
Telco	TELE 1.5	AT&T,	26.75	7.38	1.5000	1.50	0.900	99.1	132.6	99.1	2,000	-39,763	-48	502	-39,308
		COMMUNICATION													
Telco	TELE 1.5	AT&T,	27.58	7.32	1.5000	2.30	0.900	140.5	274.5	140.5	2,000	68,572	112	-169	68,515
		COMMUNICATION													
											Totals:	67,868	227	1,158	69,253

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Single Bolt	Unknown, COMMUNICATION	33.66	0.00	222.6	222.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Brighthouse Networks, COMMUNICATION	32.51	0.00	222.6	222.6	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	28.17	0.00	132.6	222.6	5.00	3.00	0.00	-3	0	-3	
Bolt	Single Bolt	Unknown, COMMUNICATION	29.08	0.00	274.5	364.5	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	AT&T, COMMUNICATION	26.75	0.00	132.6	222.6	5.00	3.00	0.00	-3	0	-3	
Bolt	Single Bolt	AT&T, COMMUNICATION	27.58	0.00	274.5	364.5	5.00	3.00	0.00	6	0	6	
										Totals:	13	0	13

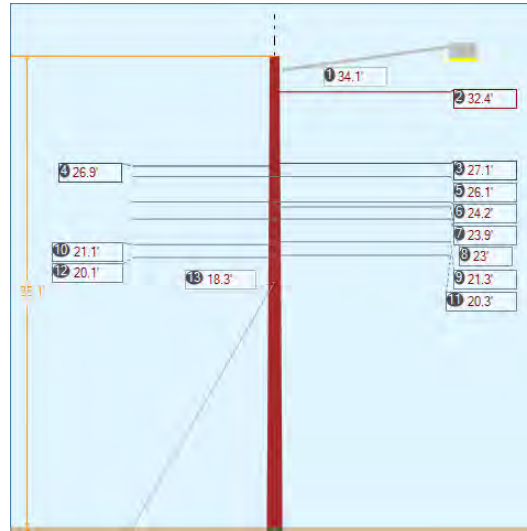
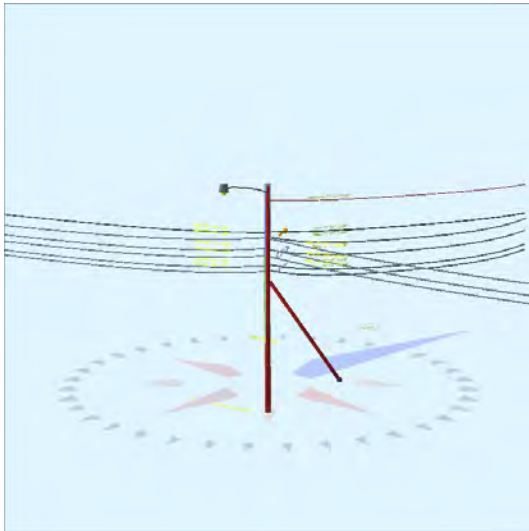
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Brighthouse Networks, COMMUNICATION	33.66	0.00	23.32	0.25	75.00	22.8	55.1	0.121	39.24	0.96
EHS 1/4	Down	Unknown, COMMUNICATION	29.50	0.00	21.96	0.25	75.00	23.5	53.2	0.121	35.04	0.93
EHS 1/4	Down	AT&T, COMMUNICATION	28.33	0.00	21.96	0.25	75.00	23.5	52.0	0.121	34.11	0.92

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,207	2,006	1,722	1,412	986	-569	-18,644
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,323	2,112	1,867	1,494	1,120	-659	-18,948
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,360	2,145	1,898	1,497	1,168	-687	-18,993
Totals:										4,403	3,273	-1,915	-56,585

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	23.32	22.8	20,000	1.00	20,000	2,006	1,722	10.0
Single Helix Anchor		18.00	21.96	23.5	20,000	1.00	20,000	4,257	3,765	21.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	27.44	33.88	11.90	16.01	7.96	13.05	1.60e+6	60.00	57.00	41.34	243,541	2409.48	23.26

Pole Num:	153W - 501-67	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.89	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.43	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009458 Deg	Longitude:	-84.424825 Deg	Elevation:	915.47967387105		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.8	0.0
Groundline	38.8	0.0
Vertical	2.8	19.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,613	293.2
Groundline	32,613	293.2
GL Allowable	86,714	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.1	30.2		17.5	327.9	18.6	0.0
? EHS 9/16 (Pushbrace)			18.3	11.1	327.9	13.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 293.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	16	1.3	718	2.2	0.8	40	19	0	40	0.6
Comms	1,216	102.8	33,853	103.8	39.0	1,895	2,257	21	1,916	28.2
GuyBraces	-237	-20.0	-6,081	-18.7	-7.0	-340	4,316	41	-299	-4.4
Pole	159	13.5	3,980	12.2	4.6	223	1,986	19	242	3.6
Streetlights	29	2.5	121	0.4	0.1	7	180	2	8	0.1
Insulators	0	0.0	22	0.1	0.0	1	108	1	2	0.0
Pole Load	1,183	100.0	32,613	100.0	37.6	1,825	8,867	84	1,909	28.1
Pole Reserve Capacity			54,101		62.4	4,975			4,891	71.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 293.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	45	3.8	858	2.6	1.0	48	203	2	50	0.7
Unknown, COMMUNICATION	979	82.7	27,775	85.2	32.0	1,555	6,678	63	1,618	23.8
Pole	159	13.5	3,980	12.2	4.6	223	1,986	19	242	3.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,183	100.0	32,613	100.0	37.6	1,825	8,867	84	1,909	28.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	DUPLEX 4 AWG	KU, UTILITY	32.44	6.32	0.6300	0.49	0.107	51.5	21.4	51.5	50	65	6	442	513
Totals:											65	6	442	513	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	27.12	6.65	1.3300	0.64	0.337	51.5	21.4	51.5	150	162	1	599	762

CATV	CATV 1.0	Unknown, COMMUNICATION	26.91	6.66	1.3300	2.05	0.337	144.9	257.5	145.0	450	12,792	51	1,143	13,987
Telco	TELE 1.5	Unknown, COMMUNICATION	26.13	6.71	1.5000	3.74	0.900	200.7	75.3	201.0	1,250	-33,526	-84	1,792	-31,818
Telco	TELE 1.5	Unknown, COMMUNICATION	26.13	6.71	1.5000	2.41	0.900	144.9	257.5	145.2	750	20,701	-61	1,213	21,853
Telco	TELE 1.5	Unknown, COMMUNICATION	26.13	6.71	1.5000	0.72	0.900	51.5	21.4	51.8	150	156	-17	631	770
Telco	TELE 1.5	Unknown, COMMUNICATION	24.25	6.82	1.5000	3.74	0.900	200.7	75.3	201.0	1,250	-31,114	-96	1,663	-29,547
Telco	TELE 1.5	Unknown, COMMUNICATION	24.25	6.82	1.5000	2.41	0.900	144.9	257.5	145.2	750	19,211	-69	1,126	20,268
Telco	TELE 1.5	Unknown, COMMUNICATION	23.88	6.84	1.5000	0.72	0.900	51.5	21.4	51.8	150	143	1	576	720
Telco	TELE 1.5	Unknown, COMMUNICATION	22.98	6.90	1.5000	3.74	0.900	200.7	75.3	201.0	1,250	-29,478	-97	1,575	-27,999
Telco	TELE 1.5	Unknown, COMMUNICATION	22.98	6.90	1.5000	2.41	0.900	144.9	257.5	145.1	750	18,201	-70	1,066	19,197
Telco	TELE 1.5	Unknown, COMMUNICATION	21.27	7.00	1.5000	0.72	0.900	51.5	21.4	51.8	150	127	1	513	642
Telco	TELE 1.5	Unknown, COMMUNICATION	21.07	7.01	1.5000	2.41	0.900	144.9	257.5	145.2	750	16,695	94	978	17,767
Telco	TELE 1.5	Unknown, COMMUNICATION	20.26	7.06	1.5000	0.72	0.900	51.5	21.4	51.8	150	121	1	489	611
Telco	TELE 1.5	Unknown, COMMUNICATION	20.10	7.07	1.5000	2.41	0.900	144.9	257.5	145.2	750	15,920	95	933	16,948
Totals:											10,112	-249	14,297	24,160	

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 12 ft. Arm	KU, UTILITY	34.09	3.72	168.0	168.0	95.00	24.00	20.00	3.00	144.00	-911	997	86
Totals:											-911	997	86	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.44	0.00	347.5	257.5	2.00	3.00	3.19	1	12	14

Bolt	Single Bolt	Unknown, COMMUNICATION	27.12	0.00	21.4	111.4	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	26.91	0.00	257.5	347.5	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	26.13	0.00	170.0	260.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	26.13	0.00	48.4	-41.6	5.00	3.00	0.00	-2	0	-2
Bolt	Single Bolt	Unknown, COMMUNICATION	24.25	0.00	165.3	165.3	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	23.88	0.00	21.4	21.4	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	22.98	0.00	165.3	165.3	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	21.27	0.00	21.4	111.4	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	21.07	0.00	257.5	347.5	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	20.26	0.00	21.4	111.4	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	20.10	0.00	257.5	347.5	5.00	3.00	0.00	5	0	5
Totals:										3	12	16

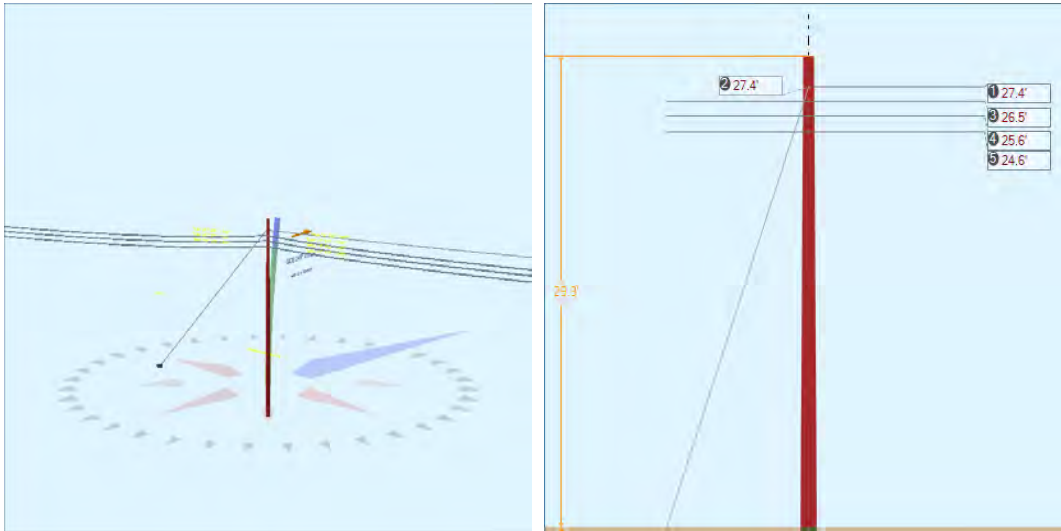
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 9/16 Pushbrace	Unknown, COMMUNICATION	18.30	0.00	13.08	0.562	75.00	30.2	54.3	0.67	20.77	0.20

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 9/16 Pushbrace	2.30e+7	35,000	0.90	31,500	700	4,091	3,720	3,493	2,835	2,040	-249	-4,340	
Totals:										2,835	2,040	-249	-4,340

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	13.08	30.2	20,000	1.00	20,000	3,720	3,493	18.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.77	33.11	10.80	12.61	7.32	11.60	1.60e+6	60.00	57.00	35.11	318,245	3166.67	35.71

Pole Num:	154W - 501-67-60	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.61	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009618 Deg	Longitude:	-84.424156 Deg	Elevation:	915.416475490827		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.7	0.0
Groundline	40.7	0.0
Vertical	3.6	23.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,636	350.7
Groundline	22,636	350.7
GL Allowable	56,685	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	23.5	257.1		6.5	344.9	7.2	100.0
? EHS 1/4 (Down)			27.4	21.8	344.9	26.3	100.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 350.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	868	89.9	21,694	95.8	38.3	2,616	1,431	18	2,634	38.7
GuyBraces	-45	-4.6	-1,214	-5.4	-2.1	-146	1,503	19	-128	-1.9
Pole	143	14.7	2,170	9.6	3.8	262	1,295	16	278	4.1
Insulators	0	0.0	-14	-0.1	0.0	-2	38	0	-1	0.0
Pole Load	966	100.0	22,636	100.0	39.9	2,729	4,267	54	2,783	40.9
Pole Reserve Capacity			34,049		60.1	4,071			4,017	59.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 350.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	824	85.3	20,466	90.4	36.1	2,468	2,972	37	2,505	36.8
Pole	143	14.7	2,170	9.6	3.8	262	1,295	16	278	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	966	100.0	22,636	100.0	39.9	2,729	4,267	54	2,783	40.9

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	27.40	5.95	0.6570	1.83	0.190	132.6	73.8	132.6	750	3,201	4	1,216	4,421
Telco	TELE 1.5	Unknown,	26.50	6.00	1.5000	2.55	0.900	132.6	73.8	132.6	1,250	5,160	-90	2,034	7,104
Telco	TELE 1.5	Unknown,	26.50	6.00	1.5000	4.75	0.900	200.7	255.3	201.0	1,250	-4,039	-137	3,089	-1,087
Telco	TELE 1.5	Unknown,	25.59	6.06	1.5000	2.55	0.900	132.6	73.8	132.6	1,250	4,983	-91	1,964	6,856
Telco	TELE 1.5	Unknown,	25.59	6.06	1.5000	4.75	0.900	200.7	255.3	201.0	1,250	-3,901	-138	2,983	-1,055
Telco	TELE 1.5	Unknown,	24.60	6.11	1.5000	2.55	0.900	132.6	73.8	132.6	1,250	4,790	-92	1,888	6,586

Telco	TELE 1.5	Unknown,	24.60	6.11	1.5000	4.75	0.900	200.7	255.3	201.0	1,250	-3,749	-139	2,868	-1,021	
COMMUNICATION												Totals:	6,445	-684	16,044	21,804

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Single Bolt	Unknown, COMMUNICATION	27.40	0.00	73.8	163.8	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	26.50	0.00	164.5	254.5	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	25.59	0.00	163.8	73.8	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	24.60	0.00	163.8	73.8	5.00	3.00	0.00	-5	0	-5
Totals:										-14	0	-14

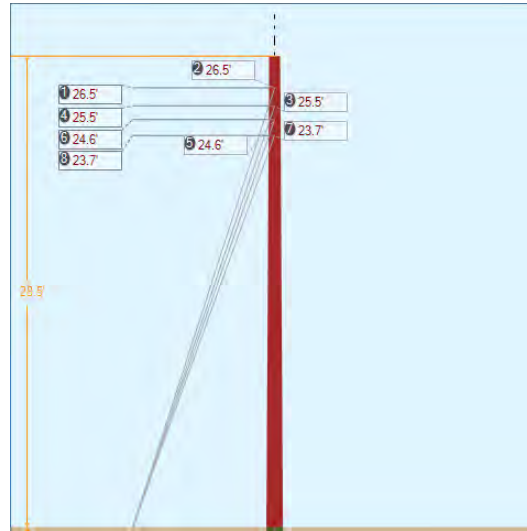
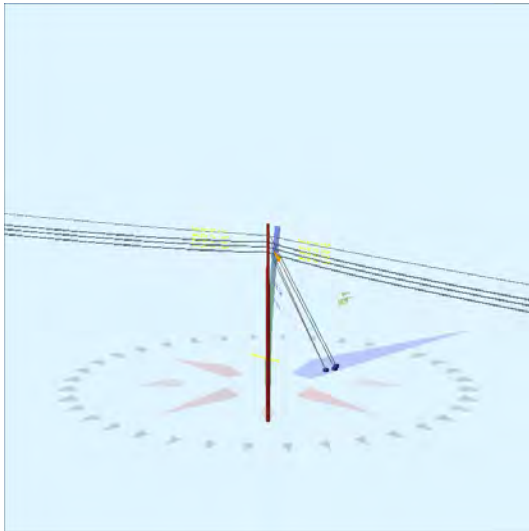
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	27.40	0.00	23.48	0.25	75.00	257.1	49.2	0.121	34.40	0.64

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,575	1,431	1,307	990	853	-53	-1,221
Totals:										990	853	-53	-1,221

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load² (lbs)	Load at Pole MCU³ (lbs)	Max Required Capacity² (%)
Single Helix Anchor		18.00	23.48	257.1	20,000	1.00	20,000	1,431	1,307	7.2

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.24	33.99	9.15	9.44	6.69	10.07	1.60e+6	60.00	57.00	29.31	118,860	1185.38	27.78

Pole Num:	155W - 501-68	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.54	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009720 Deg	Longitude:	-84.423710 Deg	Elevation:	919.194669279514		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.5	0.0
Groundline	21.5	0.0
Vertical	6.3	23.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	11,102	102.1
Groundline	11,102	102.1
GL Allowable	55,041	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.8	359.7		6.1	127.7	6.4	160.0
? EHS 1/4 (Down)			26.5	20.4	127.7	23.4	160.0
? Single Helix Anchor	16.4	3.1		3.4	127.7	3.9	190.0
? EHS 1/4 (Down)			25.5	11.3	127.7	14.3	190.0
? Single Helix Anchor	14.3	2.3		8.2	127.7	9.1	180.0
? EHS 1/4 (Down)			24.6	13.3	127.7	16.2	180.0
? EHS 1/4 (Down)			23.7	14.0	127.7	17.1	180.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 102.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	718	137.5	17,000	153.1	30.9	2,234	1,253	16	2,250	33.1
GuyBraces	-320	-61.4	-7,647	-68.9	-13.9	-1,005	4,521	58	-947	-13.9
Pole	125	23.9	1,744	15.7	3.2	229	1,242	16	245	3.6
Insulators	0	0.0	6	0.1	0.0	1	38	0	1	0.0
Pole Load	522	100.0	11,102	100.0	20.2	1,459	7,054	90	1,550	22.8
Pole Reserve Capacity			43,939		79.8	5,341			5,250	77.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 102.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	397	76.1	9,358	84.3	17.0	1,230	5,812	75	1,305	19.2
Pole	125	23.9	1,744	15.7	3.2	229	1,242	16	245	3.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	522	100.0	11,102	100.0	20.2	1,459	7,054	90	1,550	22.8

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.54	5.95	0.6570	1.91	0.190	142.0	90.2	142.0	750	25,322	7	160	25,488
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.54	5.95	0.6570	1.79	0.190	132.6	253.8	132.6	750	-22,781	6	455	-22,320
Telco	TELE 1.5	Unknown,	25.46	6.02	1.5000	2.80	0.900	142.0	90.2	142.1	1,250	40,477	34	266	40,776
Telco	TELE 1.5	Unknown,	25.46	6.02	1.5000	2.54	0.900	132.6	253.8	132.6	1,250	-36,416	31	755	-35,629
Telco	TELE 1.5	Unknown,	24.62	6.06	1.5000	2.80	0.900	142.0	90.2	142.1	1,250	39,149	34	257	39,440
Telco	TELE 1.5	Unknown,	24.62	6.06	1.5000	2.54	0.900	132.6	253.8	132.6	1,250	-35,221	32	730	-34,459
Telco	TELE 1.5	Unknown,	23.67	6.12	1.5000	2.80	0.900	142.0	90.2	142.1	1,250	37,629	34	247	37,910
Telco	TELE 1.5	Unknown,	23.67	6.12	1.5000	2.54	0.900	132.6	253.8	132.6	1,250	-33,854	32	702	-33,120
Totals:											14,304	209	3,572	18,086	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown,	26.54	0.00	180.2	90.2	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown,	25.46	0.00	172.0	82.0	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown,	24.62	0.00	172.0	82.0	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown,	23.67	0.00	172.0	82.0	5.00	3.00	0.00	2	0	2
Totals:										6	0	6

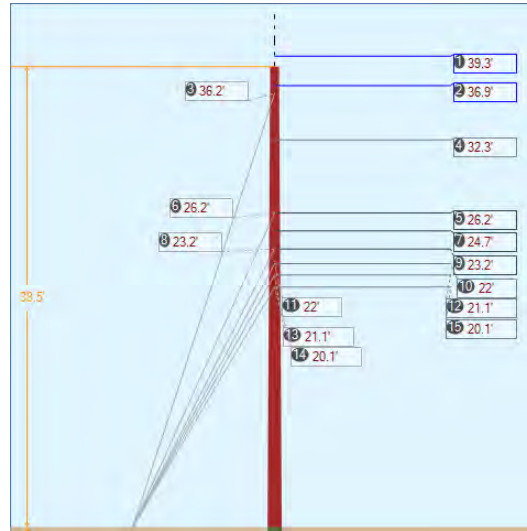
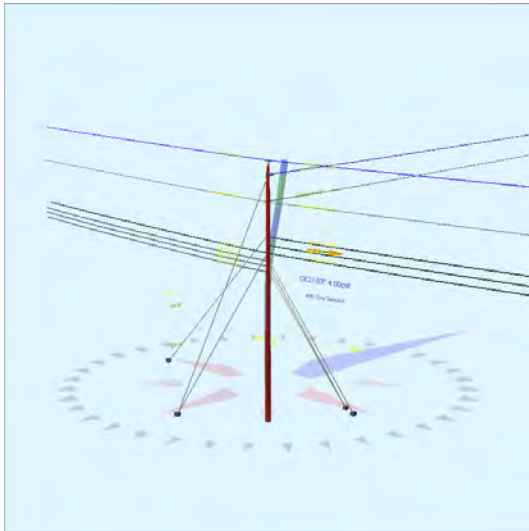
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Unknown, COMMUNICATION	26.54	0.00	17.84	0.25	75.00	359.7	55.9	0.121	30.32	0.52
EHS 1/4	Down	Unknown, COMMUNICATION	25.46	0.00	16.36	0.25	75.00	3.1	57.1	0.121	28.60	0.27
EHS 1/4	Down	Unknown, COMMUNICATION	24.62	0.00	14.29	0.25	75.00	2.3	59.7	0.121	26.82	0.30
EHS 1/4	Down	Unknown, COMMUNICATION	23.67	0.00	14.29	0.25	75.00	2.3	58.7	0.121	25.99	0.31

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,398	1,271	1,220	1,010	684	-147	-3,698
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	859	781	676	567	367	-58	-1,307
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	971	882	795	686	402	-68	-1,528
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,021	928	836	714	434	-74	-1,603
Totals:										2,977	1,887	-347	-8,136

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	17.84	359.7	20,000	1.00	20,000	1,271	1,220	6.4
Single Helix Anchor			18.00	16.36	3.1	20,000	1.00	20,000	781	676	3.9
Single Helix Anchor			18.00	14.29	2.3	20,000	1.00	20,000	1,811	1,631	9.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.40	34.06	9.05	12.09	6.69	9.97	1.60e+6	60.00	57.00	28.46	111,912	1119.70	15.87

Pole Num:	156W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.008804 Deg	Longitude:	-84.430336 Deg	Elevation:	935.20373368083		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.3	21.0
Groundline	15.8	0.0
Vertical	14.5	317.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,156	78.0
Groundline	14,216	294.4
GL Allowable	93,090	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.8	175.1		50.2	83.4	52.8	5.0
? EHS 3/8 (Down)			36.2	51.7	83.4	58.8	0.0
? EHS 1/4 (Down)			23.2	48.8	83.4	59.0	10.0
? Single Helix Anchor	24.8	266.8		0.0	83.4	0.0	0.0
? EHS 1/4 (Down)			26.2	0.0	83.4	0.0	0.0
? Single Helix Anchor	22.1	96.0		8.2	83.4	10.6	260.0
? EHS 1/4 (Down)			22.0	27.4	83.4	38.9	260.0
? Single Helix Anchor	18.9	92.2		18.1	83.4	21.6	260.0
? EHS 1/4 (Down)			21.1	28.3	83.4	38.5	260.0
? EHS 1/4 (Down)			20.1	32.1	83.4	40.9	260.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 294.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,390	162.3	47,874	336.8	51.4	6,063	183	2	6,064	89.2
Comms	5,464	371.0	61,138	430.1	65.7	7,742	553	5	7,747	113.9
GuyBraces	-6,190	-420.3	-92,602	-651.4	-99.5	-11,727	18,111	164	-11,563	-170.0
Pole	-185	-12.5	-2,056	-14.5	-2.2	-260	2,243	20	-240	-3.5
Insulators	-7	-0.5	-138	-1.0	-0.2	-18	95	1	-17	-0.2
Pole Load	1,473	100.0	14,216	100.0	15.3	1,800	21,186	191	1,992	29.3
Pole Reserve Capacity			78,874		84.7	5,000			4,808	70.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 294.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	525	35.6	8,896	62.6	9.6	1,127	9,365	85	1,211	17.8
Unknown, COMMUNICATION	1,133	76.9	7,376	51.9	7.9	934	9,578	87	1,021	15.0
Pole	-185	-12.5	-2,056	-14.5	-2.2	-260	2,243	20	-240	-3.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,473	100.0	14,216	100.0	15.3	1,800	21,186	191	1,992	29.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	39.33	0.00	0.2316	0.11	0.129	74.5	85.4	74.5	1,064	-47,594	0	11	-47,583
Primary	#4 COPPER 7 STRAND KU, UTILITY	39.33	0.00	0.2316	0.12	0.129	76.9	277.3	76.9	1,064	52,010	0	46	52,056
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.87	16.50	0.3250	0.60	0.107	190.3	353.6	190.3	1,684	41,323	8	-1,450	39,881
Neutral	#4 COPPER 7 STRAND KU, UTILITY	32.33	6.52	0.2316	0.11	0.129	74.5	85.4	74.5	1,064	-39,110	-4	9	-39,106
Neutral	#4 COPPER 7 STRAND KU, UTILITY	32.33	6.52	0.2316	0.12	0.129	76.9	277.3	76.9	1,064	42,739	-4	38	42,772
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	32.33	6.52	0.3250	0.60	0.107	190.3	353.6	190.3	1,684	36,230	14	-1,271	34,973
										Totals:	85,598	14	-2,618	82,993

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	26.23	6.88	1.3300	0.94	0.337	74.5	85.4	74.5	925	-27,592	-29	18	-27,604
CATV	CATV 1.0 Unknown, COMMUNICATION	24.74	6.97	1.3300	0.94	0.337	74.5	85.4	74.5	925	-26,025	-30	17	-26,038
CATV	CATV 1.0 Unknown, COMMUNICATION	23.23	7.06	1.3300	0.94	0.337	74.5	85.4	74.5	925	-24,434	14	16	-24,405
CATV	CATV 1.0 Unknown, COMMUNICATION	23.23	7.06	1.3300	0.98	0.337	76.9	277.3	76.9	925	26,701	14	67	26,783

Telco	TELE 1.5	Unknown, COMMUNICATION	22.00	7.13	1.5000	1.12	0.900	76.9	277.3	76.9	2,000	54,679	60	70	54,809
Telco	TELE 1.5	Unknown, COMMUNICATION	21.07	7.19	1.5000	1.12	0.900	76.9	277.3	76.9	2,000	52,358	60	67	52,485
Telco	TELE 1.5	Unknown, COMMUNICATION	20.05	7.25	1.5000	1.12	0.900	76.9	277.3	76.9	2,000	49,831	61	64	49,956
Totals:												105,519	149	319	105,987

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	38.45	0.00	0.0	0.0	13.00	9.00	10.50	0	-153	-153	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	36.87	0.00	353.6	353.6	3.00	3.80	12.75	4	-74	-70	
Spool	Spool Insulator - 25 kV KU, UTILITY	32.33	0.00	181.3	271.3	2.00	3.00	3.19	-1	-13	-14	
Spool	Spool Insulator - 25 kV KU, UTILITY	32.33	0.00	353.6	353.6	2.00	3.00	3.19	1	-13	-12	
Bolt	Single Bolt Unknown, COMMUNICATION	26.23	0.00	85.4	175.4	5.00	3.00	0.00	-5	0	-5	
Bolt	Single Bolt Unknown, COMMUNICATION	24.74	0.00	85.4	175.4	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt Unknown, COMMUNICATION	23.23	0.00	1.3	271.3	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	22.00	0.00	277.3	367.3	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt Unknown, COMMUNICATION	21.07	0.00	277.3	367.3	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt Unknown, COMMUNICATION	20.05	0.00	277.3	367.3	5.00	3.00	0.00	5	0	5	
Totals:										13	-253	-240

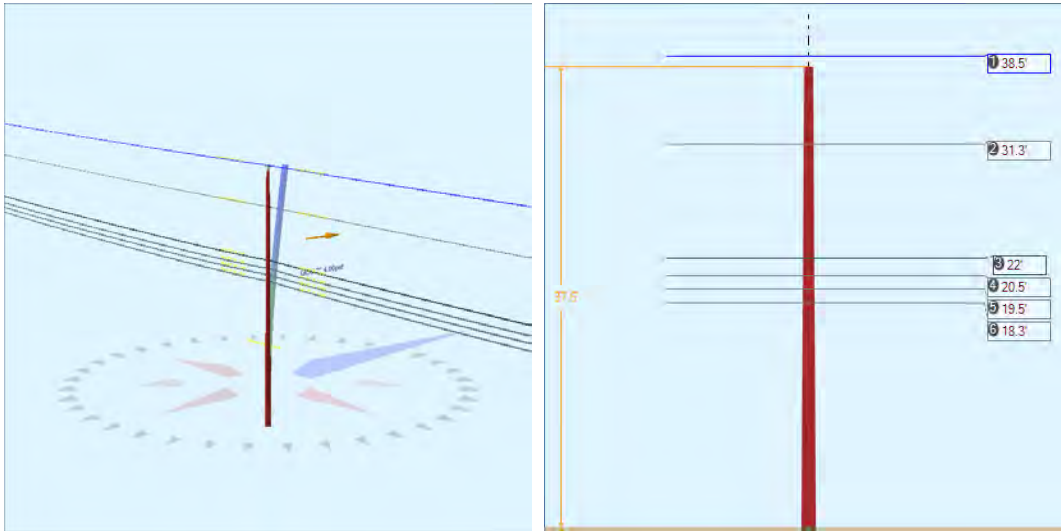
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down KU, UTILITY	36.22	0.00	22.80	0.375	75.00	175.1	57.6	0.273	41.13	1.86
EHS 1/4	Down Unknown, COMMUNICATION	23.23	0.00	22.80	0.25	75.00	175.1	45.4	0.121	30.79	1.28
EHS 1/4	Down Unknown, COMMUNICATION	26.23	0.00	24.81	0.25	75.00	266.8	46.5	0.121	34.36	0.00
EHS 1/4	Down Unknown, COMMUNICATION	22.00	0.00	22.05	0.25	75.00	96.0	44.8	0.121	29.38	0.68
EHS 1/4	Down Unknown, COMMUNICATION	21.07	0.00	18.86	0.25	75.00	92.2	48.0	0.121	26.52	0.64
EHS 1/4	Down Unknown, COMMUNICATION	20.05	0.00	18.86	0.25	75.00	92.2	46.6	0.121	25.76	0.70

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,151	7,410	7,164	6,049	3,838	-1,878	-67,322
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,528	3,208	2,923	2,081	2,053	-1,004	-23,231
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	31
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,326	2,114	1,642	1,157	1,165	-1,106	-24,068
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,304	2,094	1,694	1,259	1,133	-1,049	-21,788
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,448	2,225	1,920	1,395	1,319	-1,221	-24,155
Totals:										11,942	9,508	-6,258	-160,532

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.80	175.1	20,000	1.00	20,000	10,557	10,030	52.8
Single Helix Anchor		18.00	24.81	266.8	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	22.05	96.0	20,000	1.00	20,000	2,114	1,642	10.6
Single Helix Anchor		18.00	18.86	92.2	20,000	1.00	20,000	4,319	3,613	21.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	28.70	34.29	10.71	23.14	7.32	11.88	1.60e+6	60.00	57.00	38.45	146,057	1461.08	6.90

Pole Num:	157W - 501-54-50	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.40	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.98	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.008838 Deg	Longitude:	-84.430599 Deg	Elevation:	925.62652769099		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.0	7.7
Groundline	22.0	7.7
Vertical	6.5	7.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,539	7.7
Groundline	19,539	7.7
GL Allowable	90,727	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 7.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	112	13.0	3,962	20.3	4.4	295	102	1	296	4.4
Comms	538	62.2	11,380	58.2	12.5	848	947	9	857	12.6
Pole	209	24.2	3,982	20.4	4.4	297	2,169	20	317	4.7
Insulators	5	0.6	215	1.1	0.2	16	66	1	17	0.2
Pole Load	864	100.0	19,539	100.0	21.5	1,456	3,284	30	1,487	21.9
Pole Reserve Capacity			71,188		78.5	5,344			5,313	78.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 7.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	117	13.6	4,154	21.3	4.6	310	131	1	311	4.6
Unknown, COMMUNICATION	538	62.2	11,403	58.4	12.6	850	985	9	859	12.6
Pole	209	24.2	3,982	20.4	4.4	297	2,169	20	317	4.7
Totals:	864	100.0	19,539	100.0	21.5	1,456	3,284	30	1,487	21.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	38.47	0.00	0.2316	0.13	0.129	76.9	97.3	76.9	1,064	333	0	631	965
Primary	#4 COPPER 7 STRAND KU, UTILITY	38.47	0.00	0.2316	0.31	0.129	116.3	278.1	116.3	1,064	238	0	955	1,193
Neutral	#4 COPPER 7 STRAND KU, UTILITY	31.29	6.53	0.2316	0.13	0.129	76.9	97.3	76.9	1,064	271	11	513	795
Neutral	#4 COPPER 7 STRAND KU, UTILITY	31.29	6.53	0.2316	0.31	0.129	116.3	278.1	116.3	1,064	194	17	776	987
										Totals:	1,037	28	2,875	3,940

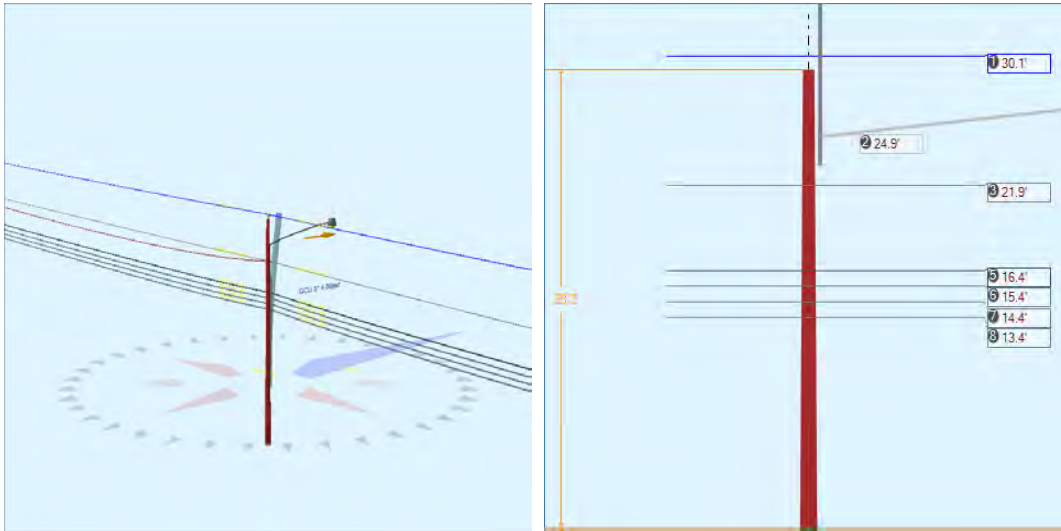
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.99	7.08	1.3300	0.99	0.337	76.9	97.3	76.9	925	166	36	902	1,103
CATV	CATV 1.0 Unknown, COMMUNICATION	21.99	7.08	1.3300	1.58	0.337	116.3	278.1	116.3	925	118	54	1,364	1,537
Telco	TELE 1.5 Unknown, COMMUNICATION	20.53	7.17	1.5000	1.83	0.900	116.3	278.1	116.3	2,000	239	95	1,392	1,727
Telco	TELE 1.5 Unknown, COMMUNICATION	20.53	7.17	1.5000	1.13	0.900	76.9	97.3	76.9	2,000	334	63	921	1,318
Telco	TELE 1.5 Unknown, COMMUNICATION	19.45	7.23	1.5000	1.83	0.900	116.3	278.1	116.3	2,000	226	96	1,319	1,642
Telco	TELE 1.5 Unknown, COMMUNICATION	19.45	7.23	1.5000	1.13	0.900	76.9	97.3	76.9	2,000	317	64	872	1,252

Telco	TELE 1.5	Unknown,	18.33	7.30	1.5000	1.83	0.900	116.3	278.1	116.3	2,000	213	97	1,243	1,554
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.33	7.30	1.5000	1.13	0.900	76.9	97.3	76.9	2,000	299	64	822	1,185
		COMMUNICATION													
Totals:											1,912	569	8,836	11,317	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	37.60	0.00	0.0	0.0	13.00	9.00	10.50	0	175	175
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.29	0.00	7.7	277.7	2.00	3.00	3.19	2	15	17
Bolt	Three Bolt	Unknown, COMMUNICATION	21.99	0.00	7.7	277.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.53	0.00	8.1	278.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.45	0.00	8.1	278.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.33	0.00	8.1	278.1	5.00	3.00	0.00	6	0	6
Totals:										25	189	214

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.35	32.77	11.06	13.06	7.32	11.78	1.60e+6	60.00	57.00	37.60	50,844	505.30	15.38

Pole Num:	158W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	10.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.18	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.008883 Deg	Longitude:	-84.430992 Deg	Elevation:	921.977428033123		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.0	0.0
Groundline	24.0	0.0
Vertical	6.4	15.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,827	354.6
Groundline	16,827	354.6
GL Allowable	71,636	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 354.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	142	17.8	3,455	20.5	4.8	327	191	2	329	4.8
Comms	429	53.8	7,139	42.4	10.0	675	1,231	13	688	10.1
Pole	153	19.2	2,347	14.0	3.3	222	1,525	16	238	3.5
Streetlights	40	5.0	3,361	20.0	4.7	318	218	2	320	4.7
Risers	28	3.5	357	2.1	0.5	34	37	0	34	0.5
Insulators	5	0.6	169	1.0	0.2	16	66	1	17	0.2
Pole Load	797	100.0	16,827	100.0	23.5	1,590	3,269	35	1,625	23.9
Pole Reserve Capacity			54,809		76.5	5,210			5,175	76.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 354.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	215	27.0	7,319	43.5	10.2	692	475	5	697	10.2
Unknown, COMMUNICATION	429	53.8	7,160	42.6	10.0	677	1,269	14	690	10.2
Pole	153	19.2	2,347	14.0	3.3	222	1,525	16	238	3.5
Totals:	797	100.0	16,827	100.0	23.5	1,590	3,269	35	1,625	23.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	30.11	0.00	0.2316	0.31	0.129	116.3	98.1	116.3	1,064	-7,499	0	725	-6,774
Primary	#4 COPPER 7 STRAND KU, UTILITY	30.11	0.00	0.2316	0.41	0.129	134.9	277.0	134.9	1,064	6,899	0	846	7,745
Neutral	#4 COPPER 7 STRAND KU, UTILITY	21.86	6.61	0.2316	0.31	0.129	116.3	98.1	116.3	1,064	-5,442	17	526	-4,899
Neutral	#4 COPPER 7 STRAND KU, UTILITY	21.86	6.61	0.2316	0.41	0.129	134.9	277.0	134.9	1,064	5,006	19	614	5,640
Secondary	TRIPLEX 4 AWG KU, UTILITY	21.86	6.61	0.6800	1.50	0.164	134.9	277.0	135.1	150	706	31	990	1,727
										Totals:	-329	67	3,702	3,440

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.38	6.94	1.3300	1.58	0.337	116.3	98.1	116.3	925	-3,546	52	987	-2,508
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.38	6.94	1.3300	1.88	0.337	134.9	277.0	134.9	925	3,263	60	1,151	4,474
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.43	7.00	1.5000	1.83	0.900	116.3	98.1	116.3	2,000	-7,219	91	1,015	-6,112
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.43	7.00	1.5000	2.20	0.900	134.9	277.0	134.9	2,000	6,641	105	1,184	7,931
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.40	7.06	1.5000	1.83	0.900	116.3	98.1	116.3	2,000	-6,740	91	948	-5,700
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.40	7.06	1.5000	2.20	0.900	134.9	277.0	134.9	2,000	6,201	106	1,106	7,413
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	13.41	7.12	1.5000	1.83	0.900	116.3	98.1	116.3	2,000	-6,277	92	883	-5,302
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	13.41	7.12	1.5000	2.20	0.900	134.9	277.0	134.9	2,000	5,775	107	1,030	6,912
		COMMUNICATION													
Totals:											-1,901	704	8,305	7,107	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 15 ft. Arm	KU, UTILITY	24.95	3.92	360.0	360.0	115.00	24.00	20.00	3.00	180.00	2,343	1,003	3,346
Totals:											2,343	1,003	3,346	

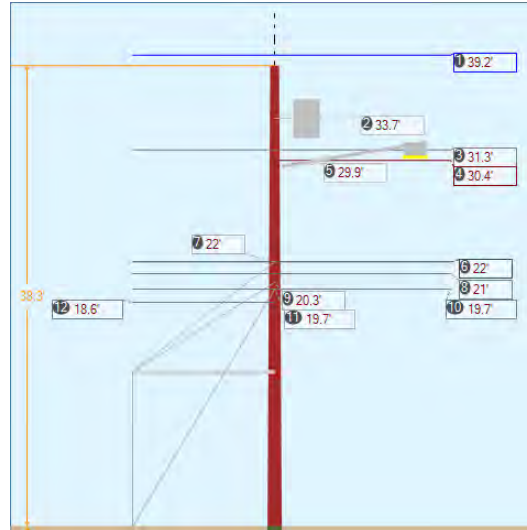
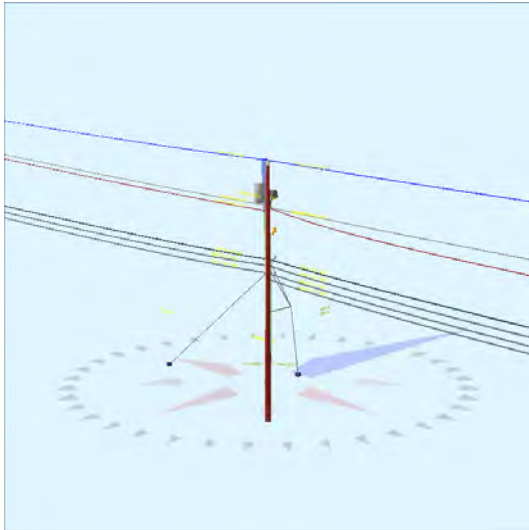
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 103.0°	Riser	KU, UTILITY	19.53	5.85	103.0	103.0	19.53	234.32	2.50	2.50	234.32	-6	361	355
Totals:											-6	361	355	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	29.24	0.00	0.0	0.0	13.00	9.00	10.50	0	134	134
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.86	0.00	7.6	97.6	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	16.38	0.00	7.6	97.6	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	15.43	0.00	7.6	97.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	14.40	0.00	7.6	97.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	13.41	0.00	7.6	97.6	5.00	3.00	0.00	5	0	5
Totals:										24	144	168

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	15.74	32.64	10.25	11.81	7.32	10.88	1.60e+6	60.00	57.00	29.24	51,041	510.78	15.63

Pole Num:	159W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.24	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.008921 Deg	Longitude:	-84.431446 Deg	Elevation:	933.354306172766		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	49.6	18.7
Groundline	28.3	0.0
Vertical	1.9	23.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,314	293.1
Groundline	19,377	338.9
GL Allowable	92,661	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	8.0	357.1		0.0	320.0	10.5	180.0
? EHS 1/4 (Sidewalk)			22.0	0.0	320.0	19.0	180.0
? Sidewalk Strut	6.0	357.1	12.8	0.0	320.0	37.8	180.0
? EHS 1/4 (Sidewalk)			20.3	0.0	320.0	19.7	180.0
? Single Helix Anchor	22.5	261.0		0.0	320.0	0.0	0.0
? EHS 5/16 (Down)			19.7	0.0	320.0	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 338.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,098	608.4	35,060	180.9	37.8	2,574	344	3	2,577	37.9
Comms	-1,212	-671.4	-22,544	-116.3	-24.3	-1,655	1,120	10	-1,645	-24.2
GuyBraces	12	6.5	239	1.2	0.3	18	43	0	18	0.3
PowerEquipments	40	21.9	295	1.5	0.3	22	694	6	28	0.4
Pole	203	112.3	3,900	20.1	4.2	286	2,230	20	306	4.5
Streetlights	30	16.8	2,047	10.6	2.2	150	162	1	152	2.2
Insulators	10	5.5	380	2.0	0.4	28	118	1	29	0.4
Pole Load	181	100.0	19,377	100.0	20.9	1,422	4,709	43	1,465	21.5
Pole Reserve Capacity			73,284		79.1	5,378			5,335	78.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 338.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,178	652.7	37,781	195.0	40.8	2,773	1,260	11	2,785	40.9
Unknown, COMMUNICATION	-1,200	-664.9	-22,303	-115.1	-24.1	-1,637	1,220	11	-1,626	-23.9
Pole	203	112.3	3,900	20.1	4.2	286	2,230	20	306	4.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	181	100.0	19,377	100.0	20.9	1,422	4,709	43	1,465	21.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	39.18	0.00	0.3250	1.44	0.107	263.9	279.1	263.9	1,184	30,349	0	1,408	31,757
Primary	#4 COPPER 7 STRAND KU, UTILITY	39.18	0.00	0.2316	0.37	0.129	134.9	97.0	134.9	1,064	-25,535	0	678	-24,857
Neutral	#4 COPPER 7 STRAND KU, UTILITY	31.29	6.58	0.2316	0.37	0.129	134.9	97.0	134.9	1,064	-20,391	-17	542	-19,867
Secondary	TRIPLEX 4 AWG KU, UTILITY	31.29	6.58	0.6800	1.46	0.164	134.9	97.0	135.1	150	-2,875	-28	874	-2,029
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	31.29	6.58	0.3250	1.44	0.107	263.9	279.1	263.9	1,184	24,233	34	1,124	25,391
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	30.42	6.63	0.3250	1.44	0.107	263.9	279.1	263.9	1,184	23,559	20	1,093	24,672
										Totals:	29,339	8	5,720	35,068

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.99	7.13	1.3300	1.86	0.337	134.9	97.0	134.9	925	-12,455	56	952	-11,447
CATV	CATV 1.0 Unknown, COMMUNICATION	21.99	7.13	1.3300	1.78	0.337	129.8	273.8	129.8	925	11,147	54	997	12,198
Telco	TELE 1.5 Unknown, COMMUNICATION	21.01	7.18	1.5000	2.09	0.900	129.8	273.8	129.9	2,000	23,027	45	1,041	24,112
Telco	TELE 1.5 Unknown, COMMUNICATION	21.01	7.18	1.5000	2.19	0.900	134.9	97.0	134.9	2,000	-25,730	-52	994	-24,788

Telco	TELE 1.5	Unknown, COMMUNICATION	19.71	7.26	1.5000	2.09	0.900	129.8	273.8	129.9	2,000	21,611	45	977	22,633
Telco	TELE 1.5	Unknown, COMMUNICATION	19.71	7.26	1.5000	2.19	0.900	134.9	97.0	134.9	2,000	-24,148	-53	933	-23,267
Telco	TELE 1.5	Unknown, COMMUNICATION	18.63	7.32	1.5000	2.19	0.900	134.9	97.0	134.9	2,000	-22,818	-53	882	-21,989
Totals:												-29,366	43	6,775	-22,549

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	33.72	20.93	190.0	190.0	365.00	39.00	--	22.00	--	-1,036	1,331	295
Totals:												-1,036	1,331	295

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 10 ft. Arm	KU, UTILITY	29.93	4.16	320.0	320.0	85.00	24.00	20.00	3.00	120.00	1,139	909	2,047
Totals:												1,139	909	2,047

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.30	0.00	0.0	0.0	13.00	9.00	10.50	0	168	168
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.30	0.00	0.0	0.0	13.00	9.00	10.50	0	168	168
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.29	0.00	187.0	97.0	2.00	3.00	3.19	-2	14	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.29	0.00	9.1	279.1	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.42	0.00	279.1	279.1	2.00	3.00	3.19	1	13	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.99	0.00	5.4	95.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	21.01	0.00	273.8	363.8	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	21.01	0.00	97.0	97.0	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	19.71	0.00	273.8	363.8	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	19.71	0.00	97.0	97.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	18.63	0.00	97.0	97.0	5.00	3.00	0.00	-3	0	-3
Totals:										3	378	380

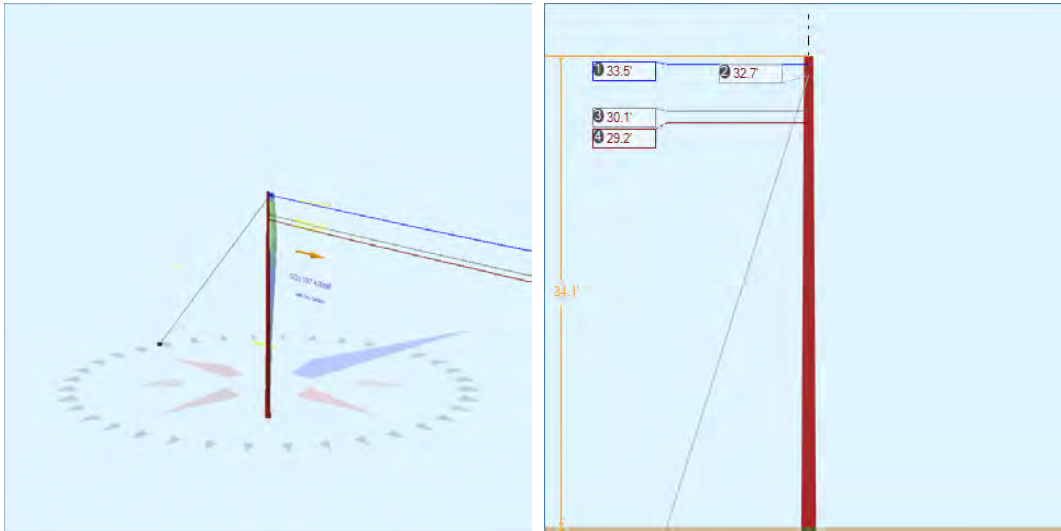
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Sidewalk	Unknown, COMMUNICATION	21.99	0.00	8.03	0.25	75.00	357.1	56.3	0.121	22.23	0.00
EHS 1/4	Sidewalk	Unknown, COMMUNICATION	20.28	0.00	8.03	0.25	75.00	357.1	50.7	0.121	20.81	0.00
EHS 5/16	Down	Unknown, COMMUNICATION	19.71	0.00	22.46	0.312	75.00	261.0	41.2	0.205	28.09	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Sidewalk	2.30e+7	6,650	0.90	5,985	700	1,136	1,033	0	0	0	0	61
EHS 1/4	Sidewalk	2.30e+7	6,650	0.90	5,985	700	1,178	1,071	0	0	0	0	57
EHS 5/16	Down	2.30e+7	11,200	0.90	10,080	700	0	0	0	0	0	0	120
Totals:										0	0	0	239

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	8.03	357.1	20,000	1.00	20,000	2,102	0	10.5
Single Helix Anchor			18.00	22.46	261.0	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.02	33.45	10.94	10.07	7.32	11.86	1.60e+6	60.00	57.00	38.30	247,493	2478.68	52.63

Pole Num:	160W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Deadend
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.93	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009042 Deg	Longitude:	-84.432357 Deg	Elevation:	932.775750961092		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.1	29.3
Groundline	19.0	0.0
Vertical	8.1	29.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	6,507	278.8
Groundline	9,415	101.3
GL Allowable	67,608	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	36.0	279.0		25.0	100.0	25.0	98.6
? EHS 3/8 (Down)			32.7	36.0	100.0	39.6	98.6
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 101.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,225	589.8	91,056	967.1	134.7	13,151	215	2	13,154	193.4
GuyBraces	-3,684	-514.3	-83,799	-890.1	-124.0	-12,103	5,068	57	-12,046	-177.2
Pole	172	24.1	2,076	22.1	3.1	300	1,623	18	318	4.7
Insulators	3	0.5	82	0.9	0.1	12	13	0	12	0.2
Pole Load	716	100.0	9,415	100.0	13.9	1,360	6,919	77	1,437	21.1
Pole Reserve Capacity			58,193		86.1	5,440			5,363	78.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 101.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	544	75.9	7,339	78.0	10.9	1,060	5,295	59	1,119	16.5
Pole	172	24.1	2,076	22.1	3.1	300	1,623	18	318	4.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	716	100.0	9,415	100.0	13.9	1,360	6,919	77	1,437	21.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.46	16.13	0.3250	1.52	0.107	263.9	99.1	263.9	1,084	47,121	20	1	47,142
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.09	6.08	0.3250	1.52	0.107	263.9	99.1	263.9	1,084	42,372	36	1	42,409
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.23	6.13	0.3250	1.52	0.107	263.9	99.1	263.9	1,084	41,166	36	1	41,203
										Totals:	130,659	93	4	130,755	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.46	0.00	99.1	99.1	3.00	3.80	12.75	8	79	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.09	0.00	99.1	99.1	2.00	3.00	3.19	2	14	16

Spool	Spool Insulator - 25 kV	KU, UTILITY	29.23	0.00	99.1	99.1	2.00	3.00	3.19	2	14	16
Totals:										12	106	118

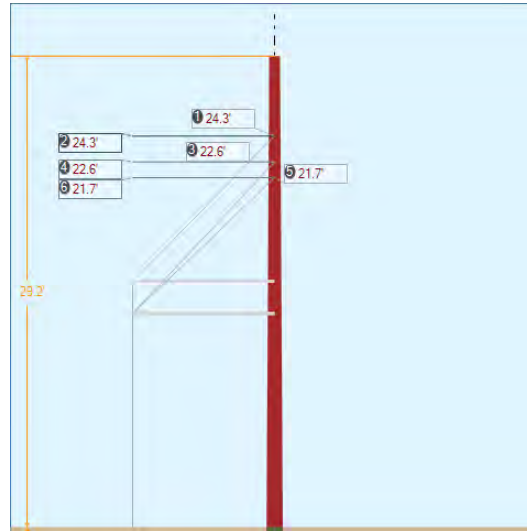
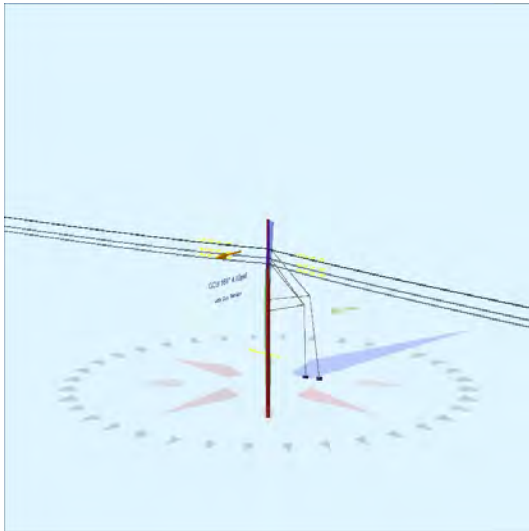
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	32.66	0.00	36.03	0.375	75.00	279.0	42.1	0.273	46.92	1.48

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,492	4,993	4,993	3,346	3,707	-3,704	-120,335
Totals:										3,346	3,707	-3,704	-120,335

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	36.03	279.0	20,000	1.00	20,000	4,993	4,993	25.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.36	34.83	9.47	13.43	6.69	10.68	1.60e+6	60.00	57.00	34.07	85,521	854.17	12.35

Pole Num:	161W - 00501-52	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.79	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.58	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.008967 Deg	Longitude:	-84.431915 Deg	Elevation:	927.650533382992		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.5	0.0
Groundline	31.5	0.0
Vertical	3.4	20.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,235	160.4
Groundline	17,235	160.4
GL Allowable	56,487	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	10.0	20.5		1.2	167.7	1.8	240.0
? EHS 1/4 (Sidewalk)			24.3	4.0	167.7	6.4	240.0
? Sidewalk Strut	8.0	20.5	15.3	5.3	167.7	7.8	240.0
? Single Helix Anchor	8.4	7.5		12.8	167.7	12.8	168.8
? EHS 1/4 (Sidewalk)			22.7	21.2	167.7	23.3	167.7
? Sidewalk Strut	8.0	7.5	13.3	66.1	167.7	66.1	167.7
? EHS 1/4 (Sidewalk)			21.7	21.6	167.7	23.8	169.8
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 160.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	1,628	87.7	24,786	143.8	43.9	4,488	953	12	4,500	66.2
GuyBraces	87	4.7	-8,994	-52.2	-15.9	-1,629	3,195	40	-1,588	-23.4
Pole	141	7.6	1,435	8.3	2.5	260	1,289	16	276	4.1
Insulators	0	0.0	9	0.1	0.0	2	28	0	2	0.0
Pole Load	1,856	100.0	17,235	100.0	30.5	3,121	5,465	69	3,190	46.9
Pole Reserve Capacity			39,252		69.5	3,679			3,610	53.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 160.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	1,715	92.4	15,800	91.7	28.0	2,861	4,176	53	2,914	42.8
Pole	141	7.6	1,435	8.3	2.5	260	1,289	16	276	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,856	100.0	17,235	100.0	30.5	3,121	5,465	69	3,190	46.9

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 24.25	6.13	1.3300	1.79	0.337	129.8	93.8	129.8	925	11,573	50	1,482	13,105
		COMMUNICATION												
CATV	CATV 1.0	Unknown, 24.25	6.13	1.3300	1.97	0.337	140.1	262.5	140.1	925	-6,103	54	1,767	-4,282
		COMMUNICATION												
Telco	TELE 1.5	Unknown, 22.65	6.22	1.5000	2.10	0.900	129.8	93.8	129.9	2,000	23,366	85	1,513	24,964
		COMMUNICATION												
Telco	TELE 1.5	Unknown, 22.65	6.22	1.5000	2.31	0.900	140.1	262.5	140.1	2,000	-12,323	91	1,804	-10,427
		COMMUNICATION												
Telco	TELE 1.5	Unknown, 21.68	6.28	1.5000	2.10	0.900	129.8	93.8	129.9	2,000	22,366	85	1,448	23,900
		COMMUNICATION												
Telco	TELE 1.5	Unknown, 21.68	6.28	1.5000	2.31	0.900	140.1	262.5	140.1	2,000	-11,795	92	1,727	-9,976
		COMMUNICATION												
										Totals:	27,084	457	9,741	37,283

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, 24.25	0.00	178.2	88.2	5.00	3.00	0.00	5	0	5	
		COMMUNICATION										
Bolt	Single Bolt	Unknown, 22.65	0.00	183.8	183.8	5.00	3.00	0.00	5	0	5	
		COMMUNICATION										
Bolt	Single Bolt	Unknown, 21.68	0.00	183.8	183.8	5.00	3.00	0.00	5	0	5	
		COMMUNICATION										
									Totals:	14	0	14

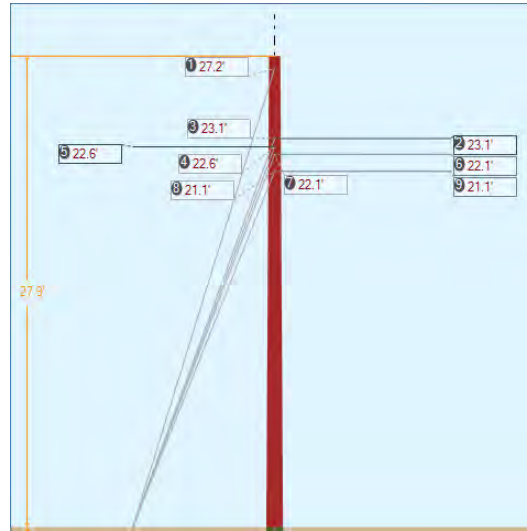
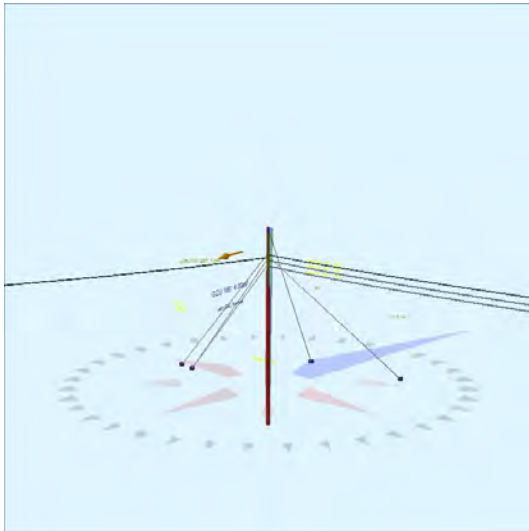
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Sidewalk	Unknown, 24.25	0.00	9.99	0.25	75.00	20.5	48.0	0.121	25.72	0.08
		COMMUNICATION									
EHS 1/4	Sidewalk	Unknown, 22.65	0.00	8.42	0.25	75.00	7.5	49.2	0.121	23.90	0.41
		COMMUNICATION									
EHS 1/4	Sidewalk	Unknown, 21.68	0.00	8.42	0.25	75.00	7.5	46.1	0.121	23.16	0.39
		COMMUNICATION									

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Sidewalk	2.30e+7	6,650	0.90	5,985	700	386	351	238	177	159	-122	-1,177
EHS 1/4	Sidewalk	2.30e+7	6,650	0.90	5,985	700	1,396	1,270	1,270	961	829	-738	-6,319
EHS 1/4	Sidewalk	2.30e+7	6,650	0.90	5,985	700	1,425	1,295	1,295	934	898	-799	-6,033
Totals:										2,071	1,886	-1,659	-13,529

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.99	20.5	20,000	1.00	20,000	351	238	1.8
Single Helix Anchor		18.00	8.42	7.5	20,000	1.00	20,000	2,564	2,564	12.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.48	33.52	9.26	10.03	6.69	10.06	1.60e+6	60.00	57.00	29.21	160,439	1607.34	29.41

Pole Num:	162W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.06	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.008912 Deg	Longitude:	-84.432395 Deg	Elevation:	934.692367719944		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.4	21.0
Groundline	14.7	0.0
Vertical	10.0	22.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	4,705	305.6
Groundline	7,932	125.5
GL Allowable	54,047	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 1/4 (Down)	17.6	342.0	27.2	6.7	165.6	6.7	162.5
? Single Helix Anchor ? EHS 1/4 (Down)	21.1	266.2	23.1	12.5	165.6	12.8	90.0
? Single Helix Anchor ? EHS 1/4 (Down)	23.8	35.4	22.6	41.6	165.6	46.9	90.0
? Single Helix Anchor ? EHS 1/4 (Down)	23.8	35.4	22.6	0.0	165.6	0.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.8	263.9	22.1	0.0	165.6	0.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.8	263.9	21.1	25.7	165.6	26.4	85.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.8	263.9	21.1	41.9	165.6	47.4	80.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.8	263.9	21.1	44.1	165.6	49.7	90.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 125.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	5,041	581.6	59,722	752.9	110.5	13,922	725	9	13,931	204.9
GuyBraces	-4,278	-493.5	-52,612	-663.3	-97.3	-12,265	10,492	136	-12,128	-178.4
Pole	103	11.9	816	10.3	1.5	190	1,210	16	206	3.0
Insulators	0	0.0	6	0.1	0.0	1	38	0	2	0.0
Pole Load	867	100.0	7,932	100.0	14.7	1,849	12,465	162	2,011	29.6
Pole Reserve Capacity			46,115		85.3	4,951			4,789	70.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 125.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	763	88.1	7,116	89.7	13.2	1,659	11,255	146	1,805	26.5
Pole	103	11.9	816	10.3	1.5	190	1,210	16	206	3.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	867	100.0	7,932	100.0	14.7	1,849	12,465	162	2,011	29.6

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.05	6.12	1.3300	1.97	0.337	140.1	82.5	140.1	925	20,270	41	1,167	21,479
CATV	CATV 1.0	Unknown, COMMUNICATION	22.56	6.15	1.3300	5.39	0.337	293.3	211.4	293.5	925	1,944	9	2,524	4,477
Telco	TELE 1.5	Unknown, COMMUNICATION	22.11	6.18	1.5000	2.31	0.900	140.1	82.5	140.1	2,000	42,034	72	1,224	43,330
Telco	TELE 1.5	Unknown, COMMUNICATION	21.11	6.24	1.5000	2.31	0.900	140.1	82.5	140.1	2,000	40,127	73	1,168	41,368
Totals:											104,376	195	6,084	110,654	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.05	0.00	82.5	82.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	22.56	0.00	211.4	301.4	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	22.11	0.00	82.5	82.5	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	21.11	0.00	82.5	82.5	5.00	3.00	0.00	4	0	4
Totals:										11	0	11

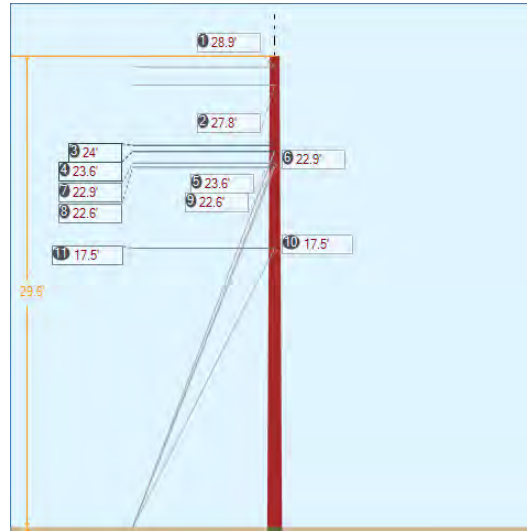
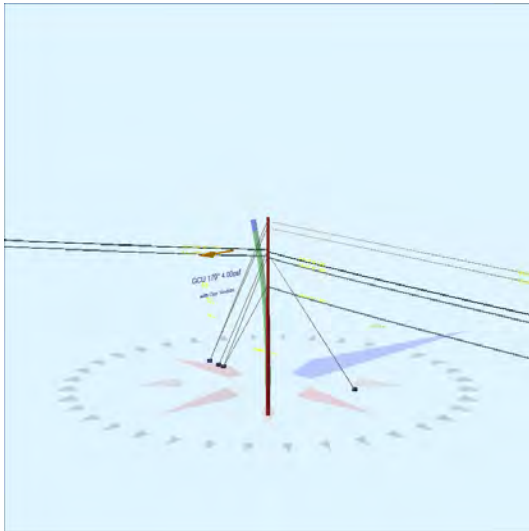
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	27.20	0.00	17.59	0.25	75.00	342.0	56.9	0.121	30.74	0.58
EHS 1/4	Down	Unknown, COMMUNICATION	23.05	0.00	21.12	0.25	75.00	266.2	47.4	0.121	29.56	1.04
EHS 1/4	Down	Unknown, COMMUNICATION	22.56	0.00	23.80	0.25	75.00	35.4	43.3	0.121	31.07	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	22.11	0.00	17.82	0.25	75.00	263.9	51.0	0.121	26.71	0.95
EHS 1/4	Down	Unknown, COMMUNICATION	21.11	0.00	17.82	0.25	75.00	263.9	49.7	0.121	25.92	0.97

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,475	1,341	1,340	1,122	731	-588	-15,755
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,805	2,550	2,491	1,832	1,688	-1,306	-29,696
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	123
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,837	2,579	2,507	1,947	1,579	-1,180	-25,640
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,973	2,703	2,640	2,012	1,709	-1,277	-26,512
Totals:										6,914	5,706	-4,349	-97,481

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	17.59	342.0	20,000	1.00	20,000	1,341	1,340	6.7
Single Helix Anchor		18.00	21.12	266.2	20,000	1.00	20,000	2,550	2,491	12.7
Single Helix Anchor		18.00	23.80	35.4	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	17.82	263.9	20,000	1.00	20,000	5,282	5,147	26.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.11	33.86	9.04	15.57	6.69	9.91	1.60e+6	60.00	57.00	27.94	125,031	1246.51	10.00

Pole Num:	173W - NT	Pole Length / Class:	35 / 5	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.40	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.21	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.009999 Deg	Longitude:	-84.443631 Deg	Elevation:	926.004102817506		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	179.3
Groundline	0.0	174.2
Vertical	22.2	132.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	11,055	153.6
Groundline	11,055	153.6
GL Allowable	44,696	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	92.6	96.8		2.7	179.3	2.8	198.5
? EHS 3/8 (Span/Head)			28.9	3.7	179.3	4.1	186.9
? EHS 3/8 (Span/Head)			27.8	0.3	179.3	0.3	210.0
? Single Helix Anchor	19.5	281.0		9.7	179.3	9.7	177.5
? EHS 3/8 (Down)			28.9	4.3	179.3	4.8	179.3
? EHS 3/8 (Down)			27.8	9.7	179.3	10.6	175.6
? Single Helix Anchor	16.3	281.0		9.5	179.3	9.5	171.2
? EHS 1/4 (Down)			23.6	31.8	179.3	35.0	171.2
? Single Helix Anchor	15.3	56.0		25.9	179.3	25.9	181.2
? EHS 1/4 (Down)			22.9	86.5	179.3	95.1	181.2
? Single Helix Anchor	14.7	281.0		27.6	179.3	27.6	165.0
? EHS 1/4 (Down)			22.6	36.1	179.3	39.8	170.0
? EHS 1/4 (Down)			17.5	56.2	179.3	61.9	160.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 153.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	4,102	453.4	54,373	491.8	121.7	13,138	465	7	13,145	193.3
GuyBraces	-3,316	-366.6	-44,481	-402.4	-99.5	-10,748	17,973	265	-10,483	-154.2
Pole	119	13.2	1,158	10.5	2.6	280	1,099	16	296	4.4
Insulators	0	0.0	6	0.1	0.0	1	48	1	2	0.0
Pole Load	905	100.0	11,055	100.0	24.7	2,671	19,584	289	2,960	43.5
Pole Reserve Capacity			33,641		75.3	4,129			3,840	56.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 153.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	1,097	121.3	15,277	138.2	34.2	3,692	16,022	236	3,928	57.8
KU, UTILITY	-312	-34.5	-5,380	-48.7	-12.0	-1,300	2,463	36	-1,264	-18.6
Pole	119	13.2	1,158	10.5	2.6	280	1,099	16	296	4.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	905	100.0	11,055	100.0	24.7	2,671	19,584	289	2,960	43.5

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	23.99	5.83	1.3300	0.80	0.337	63.8	237.5	63.8	925	3,046	3	691	3,739
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.61	5.85	1.3300	1.21	0.337	92.6	96.8	92.6	925	15,562	19	967	16,549
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.87	5.89	1.5000	0.92	0.900	63.8	237.5	63.8	2,000	6,278	5	720	7,003
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.61	5.91	1.5000	1.40	0.900	92.6	96.8	92.6	2,000	32,222	34	1,012	33,269
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.53	6.19	1.5000	1.40	0.900	92.6	96.8	92.6	2,000	24,976	36	785	25,797
		COMMUNICATION													
Totals:											82,085	97	4,175	86,357	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Single Bolt	Unknown, COMMUNICATION	23.99	0.00	237.5	327.5	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	23.61	0.00	96.8	186.8	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	22.87	0.00	237.5	327.5	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	22.61	0.00	96.8	186.8	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	17.53	0.00	96.8	186.8	5.00	3.00	0.00	3	0	3
Totals:										9	0	9

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	28.92	28.92	92.57	0.375	75.00	96.8	0.0	0.273	90.82	0.29
EHS 3/8	Span/Head	KU, UTILITY	27.77	27.77	92.57	0.375	75.00	96.8	0.0	0.273	90.81	0.02
EHS 3/8	Down	KU, UTILITY	28.92	0.00	19.48	0.375	75.00	281.0	55.9	0.273	33.23	0.13
EHS 3/8	Down	KU, UTILITY	27.77	0.00	19.48	0.375	75.00	281.0	54.8	0.273	32.27	0.27
EHS 1/4	Down	Unknown, COMMUNICATION	23.61	0.00	16.25	0.25	75.00	281.0	55.3	0.121	27.01	0.73
EHS 1/4	Down	Unknown, COMMUNICATION	22.87	0.00	15.27	0.25	75.00	56.0	56.1	0.121	25.84	1.90
EHS 1/4	Down	Unknown, COMMUNICATION	22.61	0.00	14.66	0.25	75.00	281.0	56.9	0.121	25.29	0.78
EHS 1/4	Down	Unknown, COMMUNICATION	17.53	0.00	14.66	0.25	75.00	281.0	49.9	0.121	21.15	1.01

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	563	512	512	0	512	281	8,694
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	42	38	35	0	35	19	1,099
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	659	599	599	496	336	-204	-5,652
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,472	1,338	1,338	1,093	772	-469	-12,686
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,093	1,903	1,901	1,563	1,083	-658	-15,192
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,693	5,175	5,174	4,294	2,887	-380	-8,425
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,380	2,163	2,161	1,810	1,182	-718	-15,852
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,706	3,369	3,361	2,572	2,163	-1,315	-22,632
Totals:										11,828	8,970	-3,445	-70,646

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load² (lbs)	Load at Pole MCU³ (lbs)	Max Required Capacity² (%)
Single Helix Anchor		18.00	92.57	96.8	20,000	1.00	20,000	551	547	2.8
Single Helix Anchor		18.00	19.48	281.0	20,000	1.00	20,000	1,937	1,937	9.7
Single Helix Anchor		18.00	16.25	281.0	20,000	1.00	20,000	1,903	1,901	9.5
Single Helix Anchor		18.00	15.27	56.0	20,000	1.00	20,000	5,175	5,174	25.9
Single Helix Anchor		18.00	14.66	281.0	20,000	1.00	20,000	5,523	5,512	27.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.24	33.94	8.47	19.54	6.05	9.30	1.60e+6	60.00	57.00	29.60	95,102	950.69	4.85

33' 8" - 74W - 505-8

24' 9" - Lowest Power

25' 2" - Proposed Metronet

21' 11" - Highest Tel Cable

4' - Base offset

Base

29' 6" - 81W - 505-8-40

22' - Proposed Metronet

19' 11" - Highest Tel Cable

4' - Base offset

Base

41' - 82W - 501-69

35' - Proposed Metronet

34' 8" - Proposed Metronet

29' 7" - Highest Tel Cable

4' - Base offset

Base

WIN5137



35' 1" - 153W - 501-67

30' 10" - Lowest Power

28' 5" - Proposed Metronet

28' 1" - Proposed Metronet

23' 11" - Highest Tel Cable

Old Todds Dr

CADENTOWN
MISSIONARY
BAPTIST CHURCH

4' - Base offset

Base

TODD'S
CENTER

29' 4" - 154W - 501-67-60

28' 5" - Proposed Metronet

25' 7" - Highest Tel Cable

4' - Base offset

Base

28' 6" - 155W - 501-68

27' 7" - Proposed Metronet

24' 7" - Highest Tel Cable

4' - Base offset

Base

38' 5" - 156W - NT

32' 4" - Lowest Power

27' 3" - Proposed Metronet

26' 3" - Highest Tel Cable

4' - Base offset

Base

37' 7" - 157W - 501-54-50

31' 3" - Lowest Power

23' - Proposed Metronet

20' 6" - Highest Tel Cable

4' - Base offset

Base

29' 3" - 158W - NT

19' 6" - Lowest Power

16' 1" - Proposed Metronet

15' 5" - Highest Tel Cable

4' - Base offset

Base

38' 4" - 159W - NT

27' 8" - Lowest Power

23' - Proposed Metronet

21' - Highest Tel Cable

4' - Base offset

Base

34' 1" - 160W - NT

29' 3" - Lowest Power

25' 11" - Proposed Metronet

4' - Base offset

Base

29' 3" - 161W - 00501-52

25' 3" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

Base



27' 11" - 162W - NT

24' 5" - Proposed Metronet

24' 1" - Proposed Metronet

22' 1" - Highest Tel Cable

4' - Base offset

Base

29' 7" - 173W - NT

27' 9" - Lowest Power

25' 4" - Proposed Metronet

25' - Proposed Metronet

22' 10" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, March 22, 2018 9:38 AM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX134-01W
Attachments: LX134-01W - METRONET POLE INVENTORY REPORT.xlsx; LX134-01W - Windstream Inventory Report.pdf; LX134-01W Pole App Map.pdf; O-Calcs.pdf; Pole Photos.pdf; Map Key.pdf

Categories: Rejected

Good morning,
Please see attached for proposal titled LX134-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX134-01W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		126W 25180-129	40/3	WS	2=Comms	
KU	0	126W 25180-129		WS		
Windstream	25	126W 25180-129		WS		
Total Pole Count	25	126W 25180-129		WS		
Total Needing Make Ready	15	126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		126W 25180-129		WS		
		127W 25180-145	40/3	WS	2=Comms	
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		127W 25180-145		WS		
		128W 25180-153	40/3	WS	2=Comms	
		128W 25180-153		WS		
		128W 25180-153		WS		
		128W 25180-153		WS		
		128W 25180-153		WS		
		128W 25180-153		WS		
		128W 25180-153		WS		

128W	25180-153		WS	
129W	25180-161	40/3	WS	2=Comms
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
129W	25180-161		WS	
130W	25180-169	40/3	WS	2=Comms
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
130W	25180-169		WS	
131W	25180-177	40/3	WS	2=Comms
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
131W	25180-177		WS	
132W	NT	40/3	WS	2=Comms
132W	NT		WS	
132W	NT		WS	
132W	NT		WS	
132W	NT		WS	
132W	NT		WS	
132W	NT		WS	
132W	NT		WS	
132W	NT		WS	
132W	NT		WS	

132W NT		WS	
132W NT		WS	
132W NT		WS	
133W 25180-205	40/3	WS	2=Comms
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
133W 25180-205		WS	
134W NT	40/3	WS	2=Comms
134W NT		WS	
134W NT		WS	
134W NT		WS	
134W NT		WS	
134W NT		WS	
134W NT		WS	
134W NT		WS	
135W NT	40/3	WS	2=Comms
135W NT		WS	
135W NT		WS	
135W NT		WS	
135W NT		WS	
135W NT		WS	
135W NT		WS	
135W NT		WS	
135W NT		WS	
136W 25180-237	40/3	WS	3=Elec
136W 25180-237		WS	
136W 25180-237		WS	
136W 25180-237		WS	
136W 25180-237		WS	
136W 25180-237		WS	
136W 25180-237		WS	

136W	25180-237		WS	
136W	25180-237		WS	
137W	25180-243	40/3	WS	2=Comms
137W	25180-243		WS	
137W	25180-243		WS	
137W	25180-243		WS	
137W	25180-243		WS	
137W	25180-243		WS	
137W	25180-243		WS	
137W	25180-243		WS	
137W	25180-243		WS	
138W	25180-245	40/3	WS	4=Comms&Elec
138W	25180-245		WS	
138W	25180-245		WS	
138W	25180-245		WS	
138W	25180-245		WS	
138W	25180-245		WS	
138W	25180-245		WS	
138W	25180-245		WS	
138W	25180-245		WS	
138W	25180-245		WS	
139W	25180-255	40/3	WS	2=Comms
139W	25180-255		WS	
139W	25180-255		WS	
139W	25180-255		WS	
139W	25180-255		WS	
139W	25180-255		WS	
139W	25180-255		WS	
139W	25180-255		WS	
139W	25180-255		WS	
139W	25180-255		WS	
223W	24060-400	45/3	WS	2=Comms
223W	24060-400		WS	
223W	24060-400		WS	
223W	24060-400		WS	
223W	24060-400		WS	
223W	24060-400		WS	
223W	24060-400		WS	
223W	24060-400		WS	
223W	24060-400		WS	
223W	24060-400		WS	

	224W 24060-404	40/4	WS	1=None
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	224W 24060-404		WS	
	225W NT	45/3	WS	1=None
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	225W NT		WS	
	226W 24060-416	45/3	WS	1=None
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	226W 24060-416		WS	
	228W NT	40/3	WS	1=None
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	228W NT		WS	
	229W 24050-426	30/6	WS	1=None
	229W 24050-426		WS	

229W	24050-426		WS	
229W	24050-426		WS	
229W	24050-426		WS	
229W	24050-426		WS	
229W	24050-426		WS	
230W	24060-428	40/4	WS	1=None
230W	24060-428		WS	
230W	24060-428		WS	
230W	24060-428		WS	
230W	24060-428		WS	
230W	24060-428		WS	
230W	24060-428		WS	
230W	24060-428		WS	
230W	24060-428		WS	
230W	24060-428		WS	
231W	NT	30/5	WS	1=None
231W	NT		WS	
231W	NT		WS	
231W	NT		WS	
231W	NT		WS	
231W	NT		WS	
232W	NT	40/3	WS	1=None
232W	NT		WS	
232W	NT		WS	
232W	NT		WS	
232W	NT		WS	
232W	NT		WS	
232W	NT		WS	
232W	NT		WS	
232W	NT		WS	
232W	NT		WS	
236W	21411-1613	40/3	WS	1=None
236W	21411-1613		WS	
236W	21411-1613		WS	
236W	21411-1613		WS	
236W	21411-1613		WS	
236W	21411-1613		WS	
236W	21411-1613		WS	
237W	NT	45/3	WS	1=None
237W	NT		WS	
237W	NT		WS	
237W	NT		WS	
237W	NT		WS	

237W NT	WS
237W NT	WS
237W NT	WS
237W NT	WS
237W NT	WS

END

Owner	Category	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
		27.80	129 LINCOLN AVE		38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
					38.03197	-84.47850	KU
Lower Charter					38.03197	-84.47850	Metronet
Lower Charter					38.03197	-84.47850	Charter
Lower Windstream & Resag					38.03197	-84.47850	Windstream
Lower Windstream & Resag					38.03197	-84.47850	Windstream
		38.60	145 LINCOLN AVE		38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
					38.03228	-84.47813	KU
Lower Charter					38.03228	-84.47813	Metronet
Lower Charter					38.03228	-84.47813	Charter
Lower Windstream					38.03228	-84.47813	Windstream
Lower Windstream					38.03228	-84.47813	Windstream
		31.60	149 LINCOLN AVE		38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
					38.03245	-84.47786	KU
Lower Charter					38.03245	-84.47786	Metronet
Lower Charter					38.03245	-84.47786	Charter

Lower Windstream			38.03245	-84.47786	Windstream
	28.70	161 LINCOLN AVE	38.03262	-84.47757	KU
			38.03262	-84.47757	KU
			38.03262	-84.47757	KU
			38.03262	-84.47757	KU
			38.03262	-84.47757	KU
			38.03262	-84.47757	KU
			38.03262	-84.47757	KU
			38.03262	-84.47757	Metronet
Lower Charter			38.03262	-84.47757	Charter
Lower Windstream & Resag			38.03262	-84.47757	Windstream
Lower Windstream & Resag			38.03262	-84.47757	Windstream
	39.50	165 LINCOLN AVE	38.03281	-84.47732	KU
			38.03281	-84.47732	KU
			38.03281	-84.47732	KU
			38.03281	-84.47732	KU
			38.03281	-84.47732	KU
			38.03281	-84.47732	KU
			38.03281	-84.47732	KU
			38.03281	-84.47732	Metronet
Lower Charter			38.03281	-84.47732	Charter
Lower Windstream			38.03281	-84.47732	Windstream
Lower Windstream			38.03281	-84.47732	Windstream
	20.80	173 LINCOLN AVE	38.03299	-84.47706	KU
			38.03299	-84.47706	KU
			38.03299	-84.47706	KU
			38.03299	-84.47706	KU
			38.03299	-84.47706	KU
			38.03299	-84.47706	KU
			38.03299	-84.47706	KU
			38.03299	-84.47706	KU
			38.03299	-84.47706	Metronet
Lower Charter			38.03299	-84.47706	Charter
Lower Windstream			38.03299	-84.47706	Windstream
	56.70	181 LINCOLN AVE	38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	KU
			38.03316	-84.47682	Metronet

Lower Charter			38.03316	-84.47682	Charter
Lower Windstream			38.03316	-84.47682	Windstream
Lower Windstream			38.03316	-84.47682	Windstream
	29.60	201 LINCOLN AVE	38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	KU
			38.03336	-84.47654	Metronet
Lower Charter			38.03336	-84.47654	Charter
Lower Windstream			38.03336	-84.47654	Windstream
	24.40	209 LINCOLN AVE	38.03353	-84.47627	KU
			38.03353	-84.47627	KU
			38.03353	-84.47627	KU
			38.03353	-84.47627	KU
			38.03353	-84.47627	Metronet
Lower Charter			38.03353	-84.47627	Charter
Lower Windstream			38.03353	-84.47627	Windstream
Lower Windstream			38.03353	-84.47627	Windstream
	29.60	221 LINCOLN AVE	38.03380	-84.47589	KU
			38.03380	-84.47589	KU
			38.03380	-84.47589	KU
			38.03380	-84.47589	KU
			38.03380	-84.47589	KU
			38.03380	-84.47589	Metronet
Lower Charter			38.03380	-84.47589	Charter
Lower Windstream			38.03380	-84.47589	Windstream
Lower Windstream			38.03380	-84.47589	Windstream
	24.90	233 LINCOLN AVE	38.03408	-84.47549	KU
Raise Neutral			38.03408	-84.47549	KU
Raise Secondary			38.03408	-84.47549	KU
Raise Secondary			38.03408	-84.47549	KU
			38.03408	-84.47549	KU
			38.03408	-84.47549	Metronet
			38.03408	-84.47549	Charter

			38.03408	-84.47549	Windstream
			38.03408	-84.47549	Windstream
	22.10	243 LINCOLN AVE	38.03417	-84.47531	KU
			38.03417	-84.47531	KU
			38.03417	-84.47531	KU
			38.03417	-84.47531	KU
			38.03417	-84.47531	KU
			38.03417	-84.47531	Metronet
Lower Charter			38.03417	-84.47531	Charter
Lower Windstream			38.03417	-84.47531	Windstream
Lower Windstream			38.03417	-84.47531	Windstream
	23.50	245 LINCOLN AVE	38.03433	-84.47510	KU
			38.03433	-84.47510	KU
			38.03433	-84.47510	KU
			38.03433	-84.47510	KU
			38.03433	-84.47510	KU
Extend Riser			38.03433	-84.47510	KU
			38.03433	-84.47510	Metronet
Lower Charter			38.03433	-84.47510	Charter
Lower Windstream			38.03433	-84.47510	Windstream
Lower Windstream			38.03433	-84.47510	Windstream
	30.50	255 LINCOLN AVE	38.03460	-84.47471	KU
			38.03460	-84.47471	KU
			38.03460	-84.47471	KU
			38.03460	-84.47471	KU
			38.03460	-84.47471	KU
			38.03460	-84.47471	KU
			38.03460	-84.47471	Metronet
Lower Charter			38.03460	-84.47471	Charter
Lower Windstream			38.03460	-84.47471	Windstream
Lower Windstream			38.03460	-84.47471	Windstream
	49.30	400 HENRY CLAY BLVD	38.03222	-84.47016	KU
			38.03222	-84.47016	KU
			38.03222	-84.47016	KU
			38.03222	-84.47016	KU
			38.03222	-84.47016	KU
			38.03222	-84.47016	KU
			38.03222	-84.47016	Metronet
Resag Charter			38.03222	-84.47016	Charter
			38.03222	-84.47016	Windstream

	50.60	405 KINGSWOOD	38.03249	-84.46979	KU
			38.03249	-84.46979	KU
			38.03249	-84.46979	KU
			38.03249	-84.46979	KU
			38.03249	-84.46979	KU
			38.03249	-84.46979	KU
			38.03249	-84.46979	KU
			38.03249	-84.46979	Metronet
			38.03249	-84.46979	Charter
			38.03249	-84.46979	Windstream
	45.30	411 KINGSWOOD	38.03282	-84.46933	KU
			38.03282	-84.46933	KU
			38.03282	-84.46933	KU
			38.03282	-84.46933	KU
			38.03282	-84.46933	KU
			38.03282	-84.46933	KU
			38.03282	-84.46933	KU
			38.03282	-84.46933	KU
			38.03282	-84.46933	Metronet
			38.03282	-84.46933	Charter
			38.03282	-84.46933	Windstream
	41.40	417 KINGSWOOD	38.03317	-84.46887	KU
			38.03317	-84.46887	KU
			38.03317	-84.46887	KU
			38.03317	-84.46887	KU
			38.03317	-84.46887	KU
			38.03317	-84.46887	KU
			38.03317	-84.46887	KU
			38.03317	-84.46887	Metronet
			38.03317	-84.46887	Charter
			38.03317	-84.46887	Windstream
No access to midspan data	29.70	422 HENRY CLAY BLVE	38.03349	-84.46841	KU
			38.03349	-84.46841	KU
			38.03349	-84.46841	KU
			38.03349	-84.46841	KU
			38.03349	-84.46841	KU
			38.03349	-84.46841	KU
			38.03349	-84.46841	Metronet
			38.03349	-84.46841	Charter
			38.03349	-84.46841	Windstream
	31.30	426 HENRY CLAY BLVE	38.03360	-84.46825	KU
			38.03360	-84.46825	KU

		38.03360	-84.46825	KU
		38.03360	-84.46825	KU
		38.03360	-84.46825	Metronet
		38.03360	-84.46825	Charter
		38.03360	-84.46825	Windstream
38.20	428 HENRY CLAY BLVD	38.03382	-84.46794	KU
		38.03382	-84.46794	KU
		38.03382	-84.46794	KU
		38.03382	-84.46794	KU
		38.03382	-84.46794	KU
		38.03382	-84.46794	KU
		38.03382	-84.46794	Metronet
		38.03382	-84.46794	Charter
		38.03382	-84.46794	Windstream
30.40	430 HENRY CLAY BLVD	38.03394	-84.46776	KU
		38.03394	-84.46776	KU
		38.03394	-84.46776	KU
		38.03394	-84.46776	Metronet
		38.03394	-84.46776	Charter
		38.03394	-84.46776	Windstream
48.90	434 HENRY CLAY BLVD	38.03414	-84.46748	KU
		38.03414	-84.46748	KU
		38.03414	-84.46748	KU
		38.03414	-84.46748	KU
		38.03414	-84.46748	KU
		38.03414	-84.46748	KU
		38.03414	-84.46748	KU
		38.03414	-84.46748	Metronet
		38.03414	-84.46748	Charter
		38.03414	-84.46748	Windstream
21.20	1609 CAROLYN DR	38.03488	-84.46623	KU
		38.03488	-84.46623	KU
		38.03488	-84.46623	KU
		38.03488	-84.46623	KU
		38.03488	-84.46623	Metronet
		38.03488	-84.46623	Charter
		38.03488	-84.46623	Windstream
41.60	1701 CAROLYN DR	38.03466	-84.46593	KU
		38.03466	-84.46593	KU
		38.03466	-84.46593	KU
		38.03466	-84.46593	KU
		38.03466	-84.46593	KU

38.03466	-84.46593	KU
38.03466	-84.46593	KU
38.03466	-84.46593	Metronet
38.03466	-84.46593	Charter
38.03466	-84.46593	Windstream

	g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Pe
Primary	33' 10"				Y	Y				B: Residential/Over Driveways	
Neutral	25' 7"				Y	Y					
Neutral	25' 7"				Y	Y					
Secondary	25' 1"				Y	Y					
Secondary	25' 1"				Y	Y					
Secondary	24' 4"				Y	Y					
Secondary	24' 4"				Y	Y					
Secondary Drip Loop	22' 10"				Y	Y					
Streetlight	22' 2"				Y	Y					
Communication		19' 6"			Y	Y					
Communication	20' 9"	18' 6"	21		Y	Y					
Communication	20' 1"	17' 6"			Y	Y					
Communication	19' 6"	16' 6"	17' 1"		Y	Y					
Primary	32' 2"				Y	N				B: Residential/Over Driveways	
Transformer	26' 2"				Y	N					
Secondary	25' 10"				Y	N					
Neutral	25' 8"				Y	N					
Neutral	25' 1"				Y	N					
Neutral	24' 9"				Y	N					
Secondary	24' 5"				Y	N					
Secondary	24' 2"				Y	N					
Secondary	24' 0"				Y	N					
Streetlight	22' 2"				Y	N					
Communication		20' 7"			Y	N					
Communication	20' 10"	19' 7"	88		Y	N					
Communication	20' 3"	18' 7"			Y	N					
Communication	19' 7"	17' 7"	18' 11"		Y	N					
Primary	33' 4"				N	N				B: Residential/Over Driveways	
Neutral	26' 2"				N	N					
Neutral	25' 4"				N	N					
Secondary	24' 8"				N	N					
Secondary	23' 9"				N	N					
Communication		20' 3"	44		N	N					
Communication	20' 3"	19' 3"			N	N					

Communication	19' 3"	18' 3"	18' 1"		N	N	
Primary	31' 1"				Y	N	B:Residential/Over Driveways
Transformer	25' 2"				Y	N	
Secondary	24' 6"				Y	N	
Neutral	23' 7"				Y	N	
Secondary	22' 11"				Y	N	
Secondary	22' 3"				Y	N	
Streetlight	20' 11"				Y	N	
Streetlight Drip Loop	20' 8"				Y	N	
Communication		18' 8"			Y	N	
Communication	18' 11"	17' 8"		38	Y	N	
Communication	18' 4"	16' 8"			Y	N	
Communication	18' 0"	15' 8"	17' 4"		Y	N	
Primary	31' 10"				Y	N	B:Residential/Over Driveways
Secondary	25' 5"				Y	N	
Neutral	24' 3"				Y	N	
Neutral	24' 2"				Y	N	
Secondary	23' 7"				Y	N	
Secondary	22' 11"				Y	N	
OH Guy	21' 11"				Y	N	
Communication		19' 5"			Y	N	
Communication	19' 5"	18' 5"		75	Y	N	
Communication	18' 9"	17' 5"			Y	N	
Communication	18' 0"	16' 5"	17' 5"		Y	N	
Primary	33' 3"				N	N	B:Residential/Over Driveways
Transformer	26' 2"				N	N	
Neutral	25' 10"				N	N	
Neutral	24' 9"				N	N	
Secondary	24' 3"				N	N	
Secondary	23' 8"				N	N	
OH Guy	23' 3"				N	N	
Streetlight	22' 10"				N	N	
Communication		20' 0"			N	N	
Communication	20' 0"	19' 0"		50	N	N	
Communication	19' 0"	18' 0"	19' 2"		N	N	
Primary	32' 4"				N	N	B:Residential/Over Driveways
Neutral	25' 0"				N	N	
Neutral	24' 10"				N	N	
Neutral	24' 8"				N	N	
Secondary	24' 4"				N	N	
Secondary	23' 9"				N	N	
Secondary	23' 5"				N	N	
OH Guy	22' 10"				N	N	
Streetlight	21' 6"				N	N	
Communication		20' 1"			N	N	

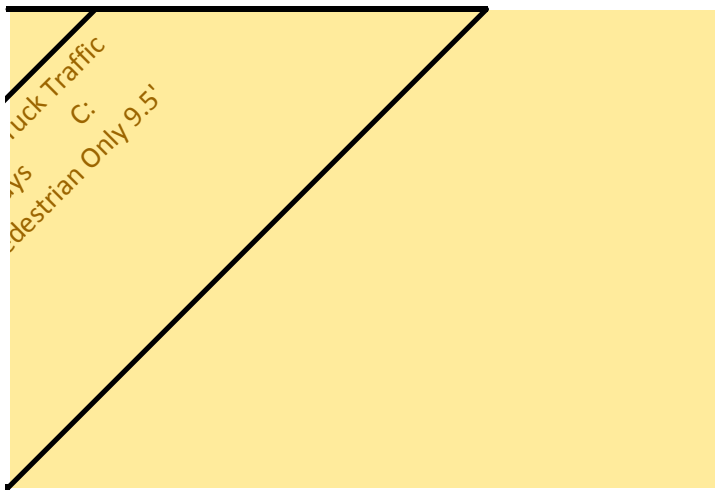
Communication	20' 1"	19' 0"	73	N	N	
Communication	19' 8"	18'0"		N	N	
Communication	19' 3"	17'0"	18' 8"	N	N	
Primary	32' 9"			N	Y	B:Residential/Over Driveways
Transformer	25' 11"			N	Y	
Neutral	25' 6"			N	Y	
Neutral	24' 8"			N	Y	
Secondary	24' 1"			N	Y	
Secondary	23' 5"			N	Y	
OH Guy	23' 1"			N	Y	
Streetlight	22' 2"			N	Y	
Streetlight Drip Loop	22' 1"			N	Y	
Communication		20' 1"		N	Y	
Communication	19' 8"	19' 1"	28	N	Y	
Communication	18' 8"	18' 1"	17' 5"	N	Y	
Primary	33' 9"			N	N	B:Residential/Over Driveways
Neutral	26' 1"			N	N	
Secondary	25' 5"			N	N	
Secondary	24' 8"			N	N	
Communication		21' 2"		N	N	
Communication	21' 2"	20' 2"	42	N	N	
Communication	20' 7"	19' 2"		N	N	
Communication	19' 10"	18' 2"	17' 4"	N	N	
Primary	33' 8"			N	N	B:Residential/Over Driveways
Transformer	27' 1"			N	N	
Neutral	25' 7"			N	N	
Secondary	24' 11"			N	N	
Secondary	24' 2"			N	N	
Communication		20' 9"		N	N	
Communication	20' 5"	19' 9"	41	N	N	
Communication	20' 0"	18' 9"		N	N	
Communication	19' 5"	17' 9"	16' 4"	N	N	
Primary	33' 1"			N	N	B:Residential/Over Driveways
Neutral	24' 9"	25'9"		N	N	
Secondary	24' 3"	25'3"		N	N	
Secondary	23' 5"	24'5"		N	N	
Streetlight	22' 3"	22'1"		N	N	
Communication		21'1"		N	N	
Communication	20' 1"		43	N	N	

Communication	19' 7"			N	N	
Communication	19' 0"	19' 0"		N	N	
Primary	33' 4"			N	N	B:Residential/Over Driveways
Transformer	26' 10"			N	N	
Neutral	25' 4"			N	N	
Secondary	24' 9"			N	N	
Secondary	23' 10"			N	N	
Communication		20' 2"		N	N	
Communication	20' 2"	19' 2"	41	N	N	
Communication	19' 8"	18' 2"		N	N	
Communication	19' 2"	17' 2"	18' 4"	N	N	
Primary	33' 6"			Y	Y	B:Residential/Over Driveways
Neutral	25' 4"			Y	Y	
Secondary	24' 9"			Y	Y	
Secondary	24' 3"			Y	Y	
Streetlight	22' 9"			Y	Y	
Secondary Riser	22' 8"	24' 3"		Y	Y	
Communication		20' 11"		Y	Y	
Communication	20' 7"	19' 10"	28	Y	Y	
Communication	19' 10"	18' 10"		Y	Y	
Communication	19' 7"	17' 10"	17' 8"	Y	Y	
Primary	33' 7"			Y	N	B:Residential/Over Driveways
Transformer	27' 1"			Y	N	
Neutral	25' 11"			Y	N	
Secondary	25' 3"			Y	N	
Secondary	24' 5"			Y	N	
Streetlight	22' 0"			Y	N	
Communication		20' 9"		Y	N	
Communication	20' 9"	19' 8"	44	Y	N	
Communication	20' 2"	18' 8"		Y	N	
Communication	19' 8"	17' 8"	17' 6"	Y	N	
Primary	35' 4"			N	N	D: Pedestrian Only 9.5'
Secondary	28' 2"			N	N	
Neutral	27' 7"			N	N	
Secondary	26' 9"			N	N	
Secondary Riser	25' 9"			N	N	
Down Guy	25' 5"			N	N	
Communication		21' 6"		N	N	
Communication	20' 6"		32	N	N	
Communication	18' 10"	16' 0"		N	N	

Primary	33' 9"		N	N	D: Pedestrian Only 9.5'
Primary	33' 3"		N	N	
Transformer	27' 0"		N	N	
Secondary	26' 1"		N	N	
Secondary	25' 5"		N	N	
Neutral	24' 10"		N	N	
Secondary	24' 2"		N	N	
Communication	18' 10"		N	N	
Communication	17' 10"	74	N	N	
Communication	16' 9"	13' 6"	N	N	
Primary	34' 9"		N	N	D: Pedestrian Only 9.5'
Primary	34' 1"		N	N	
Transformer	27' 7"		N	N	
Secondary	26' 9"		N	N	
Neutral	26' 0"		N	N	
Secondary Riser	25' 5"		N	N	
Secondary Riser	24' 10"		N	N	
Secondary Drip Loop	24' 8"		N	N	
Communication	17' 10"		N	N	
Communication	16' 10"	94	N	N	
Communication	15' 7"	10' 8"	N	N	
Primary	38' 10"		N	Y	D: Pedestrian Only 9.5'
Primary	38' 1"		N	Y	
Transformer	31' 3"		N	Y	
Secondary	30' 10"		N	Y	
Neutral	29' 11"		N	Y	
Secondary	28' 11"		N	Y	
Secondary Riser	27' 2"		N	Y	
Communication	15' 4"		N	Y	
Communication	14' 4"	136	N	Y	
Communication	13' 5"	8' 11"	N	Y	
Primary	34' 5"		N	N	D: Pedestrian Only 9.5'
Primary	33' 11"		N	N	
Transformer	27' 0"		N	N	
Secondary	25' 10"		N	N	
Neutral	25' 1"		N	N	
Secondary	24' 4"		N	N	
Communication	17' 9"		N	N	
Communication	16' 9"	UNK	N	N	
Communication	15' 8"	UNK	N	N	
Secondary	22' 3"		N	N	D: Pedestrian Only 9.5'
Neutral	21' 6"		N	N	

Secondary	20' 9"		N	N	
Secondary Riser	20' 8"		N	N	
Communication		17' 4"		N	N
Communication	16' 4"		53	N	N
Communication	15' 5"	14' 4"		N	N
Primary	33' 10"		Y	N	D: Pedestrian Only 9.5'
Primary	33' 6"		Y	N	
Transformer	27' 7"		Y	N	
Secondary	26' 1"		Y	N	
Neutral	25' 5"		Y	N	
Secondary	24' 9"		Y	N	
Communication		17' 11"		Y	N
Communication	16' 11"		82	Y	N
Communication	16' 7"	14' 11"		Y	N
Secondary	23' 11"		N	N	D: Pedestrian Only 9.5'
Neutral	23' 3"		N	N	
Secondary	22' 7"		N	N	
Communication		16' 6"		N	N
Communication	15' 6"		77	N	N
Communication	14' 5"	13' 1"		N	N
Primary	33' 7"		N	N	D: Pedestrian Only 9.5'
Primary	33' 4"		N	N	
Transformer	27' 1"		N	N	
Secondary	25' 5"		N	N	
Neutral	24' 9"		N	N	
Secondary	24' 0"		N	N	
Secondary Riser	22' 11"		N	N	
Communication		17' 2"		N	N
Communication	16' 2"		57	N	N
Communication	14' 5"	12' 9"		N	N
Primary	34' 4"		N	N	D: Pedestrian Only 9.5'
Primary	33' 9"		N	N	
Transformer	27' 7"		N	N	
Neutral	26' 1"		N	N	
Communication		22' 3"		N	N
Communication	21' 3"		77	N	N
Communication	20' 0"	16' 1"		N	N
Primary	36' 3"		N	Y	D: Pedestrian Only 9.5'
Primary	35' 10"		N	Y	
Transformer	28' 9"		N	Y	
Secondary	27' 0"		N	Y	
Neutral	26' 5"		N	Y	

Secondary	25' 7"			N	Y
Down Guy	24' 6"			N	Y
Communication		18' 5"		N	Y
Communication	17' 5"		87	N	Y
Communication	14' 9"		8' 4"	N	Y



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE
PROPOSAL #:
LX134-01W
Submit in Duplicate**

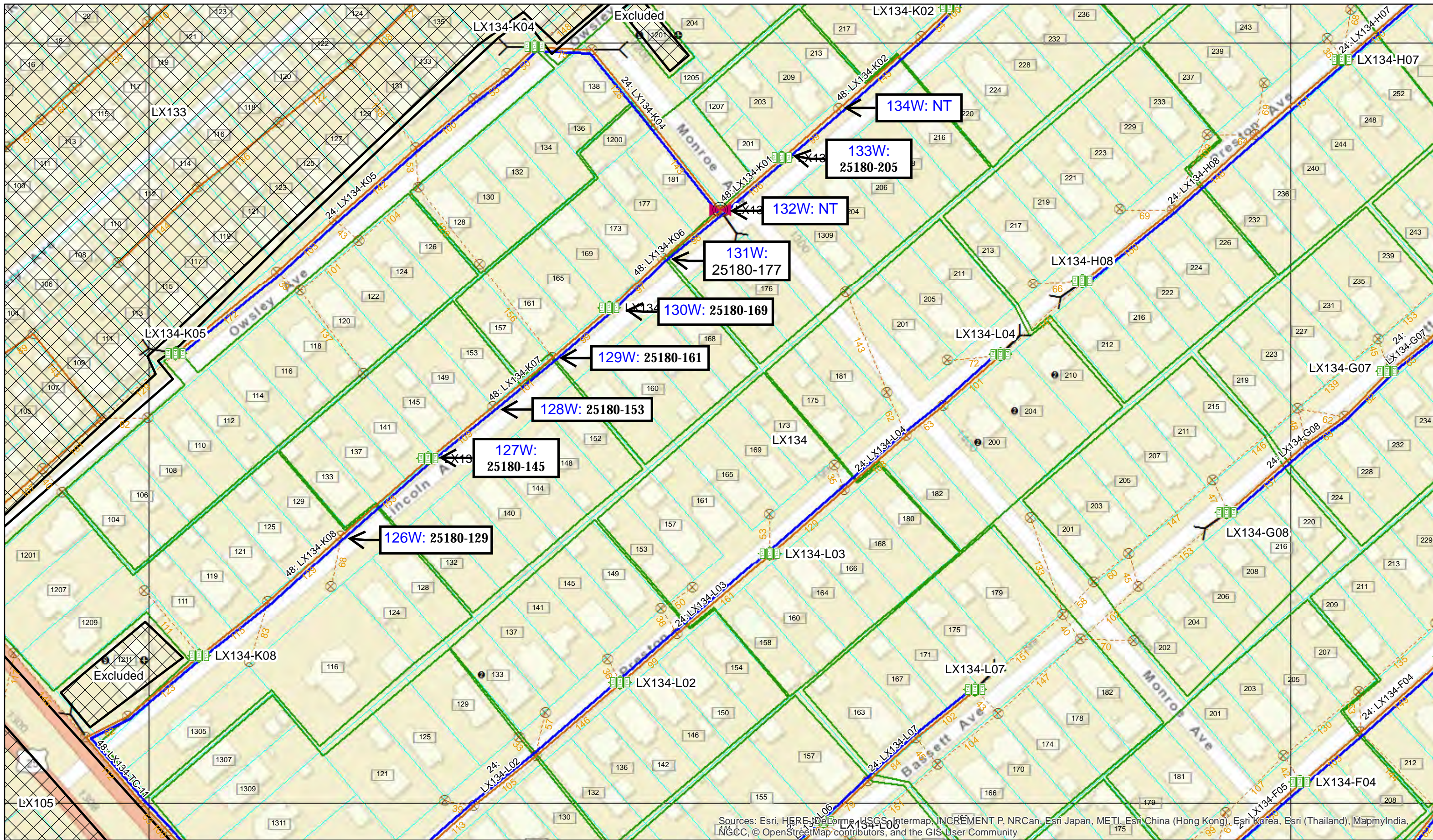
Name of Firm Applying: OMN-RUS, INC Contact Name: LAUREN SANDEFUR 812-213-1328
 Phone # LAUREN SANDEFUR 812-213-1328
 EMAIL ADDRESS lauren.sandefur@metronetinc.com
 Street Address: 3701 Communications Way, Evansville, IN 47715
 City, ST, ZIP of Firm Applying: Authorized Signature & Date:
LSandefur 3/12/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & make-ready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	Licensee to Complete # & type of Attachments	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	25180-129	126W	129 Lincoln Ave, Lexington, 40509	40, 3, WXXM	20'1"	20'1"	22'2"	(1)Fiber/Strand			
2	25180-145	127W	145 Lincoln Ave, Lexington, 40509	40, 3, WXXM	20'3"	20'3"	22'2"	(2)Fiber/Strand			
3	25180-153	128W	149 Lincoln Ave, Lexington, 40509	40, 3, WXXM	19'3"	19'3"	23'9"	(1)Fiber/Strand			
4	25180-161	129W	161 Lincoln Ave, Lexington, 40509	40, 3, WXXM	18'4"	18'4"	20'8"	(2)Fiber/Strand			
5	25180-169	130W	165 Lincoln Ave, Lexington, 40509	40, 3, WXXM	18'9"	18'7"	22'11"	(1)Fiber/Strand			
6	25180-177	131W	173 Lincoln Ave, Lexington, 40509	40, 3, WXXM	19'0"	N/A	22'10"	(1)Fiber/Strand			
7	NT	132W	181 Lincoln Ave, Lexington, 40509	40, 3, WXXM	19'8"	N/A	21'6"	(1)Fiber/Strand			
8	25180-205	133W	201 Lincoln Ave, Lexington, 40509	40, 3, WXXM	18'11"	18'7"	22'1"	(1)Fiber/Strand			
9	NT	134W	209 Lincoln Ave, Lexington, 40509	40, 3, WXXM	20'7"	19'10"	24'8"	(2)Fiber/Strand			
10	NT	135W	221 Lincoln Ave, Lexington, 40509	40, 3, WXXM	20'0"	N/A	24'2"	(1)Fiber/Strand			
11	25180-237	136W	233 Lincoln Ave, Lexington, 40509	40, 3, WXXM	19'7"	N/A	22'3"	(1)Fiber/Strand			
12	25180-243	137W	243 Lincoln Ave, Lexington, 40509	40, 3, WXXM	19'8"	N/A	23'10"	(1)Fiber/Strand			
13	25180-245	138W	245 Lincoln Ave, Lexington, 40509	40, 3, WXXM	19'10"	19'1"	22'8"	(1)Fiber/Strand			
14	25180-255	139W	255 Lincoln Ave, Lexington, 40509	40, 3, WXXM	20'2"	19'2"	22'0"	(1)Fiber/Strand			
15	24060-400	223W	400 Henry Clay Blvd, Lexington, 40509	45, 3, WXXM	18'9"	18'9"	25'9"	(1)Fiber/Strand			
16	24060-404	224W	405 Kingswood, Lexington, 40509	40, 4, WXXM	16' 9"	N/A	24'2"	(1)Fiber/Strand			
17	NT	225W	411 Kingswood, Lexington, 40509	45, 3, WXXM	15'7"	N/A	24'8"	(1)Fiber/Strand			
18	24060-416	226W	417 Kingswood, Lexington, 40509	45, 3, WXXM	13'5"	13'5"	27'2"	(1)Fiber/Strand			
19	NT	228W	422 Henry Clay Blvd, Lexington, 40509	40, 3, WXXM	15'8"	N/A	24'4"	(1)Fiber/Strand			

20	24050-426	229W	426 Henry Clay Blvd, Lexington, 40509	30, 6, WXM	15'5"	N/A	20'8"	(1)Fiber/Strand		
21	24060-428	230W	428 Henry Clay Blvd, Lexington, 40509	40, 4, WXM	16'7"	N/A	24'9"	(1)Fiber/Strand		
22	NT	231W	430 Henry Clay Blvd, Lexington, 40509	30, 5, WXM	14'5"	N/A	22'7"	(1)Fiber/Strand		
23	NT	232W	434 Henry Clay Blvd, Lexington, 40509	40, 3, WXM	14'5"	N/A	22'11"	(1)Fiber/Strand		
24	21411-1613	236W	1609 Carolyn Dr, Lexington, 40509	40, 3, WXM	20'0"	N/A	26'1"	(1)Fiber/Strand		
25	NT	237W	1701 Carolyn Dr, Lexington, 40509	45, 3, WXM	14'9"	N/A	24'6"	(1)Fiber/Strand		
ESTIMATED TOTAL COSTS										
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM										

Submit to: WindstreamJointUse@Windstream.com
 Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAZ31

DESIGN ENG
 USER NAME: arqjls
 DATE: 12/5/2017
 PROJECT NUMBER:
 LXTNXY00457.CB

STAKING GRID DRAWING

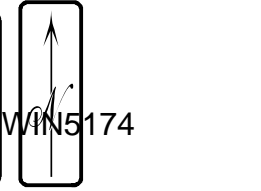
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 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

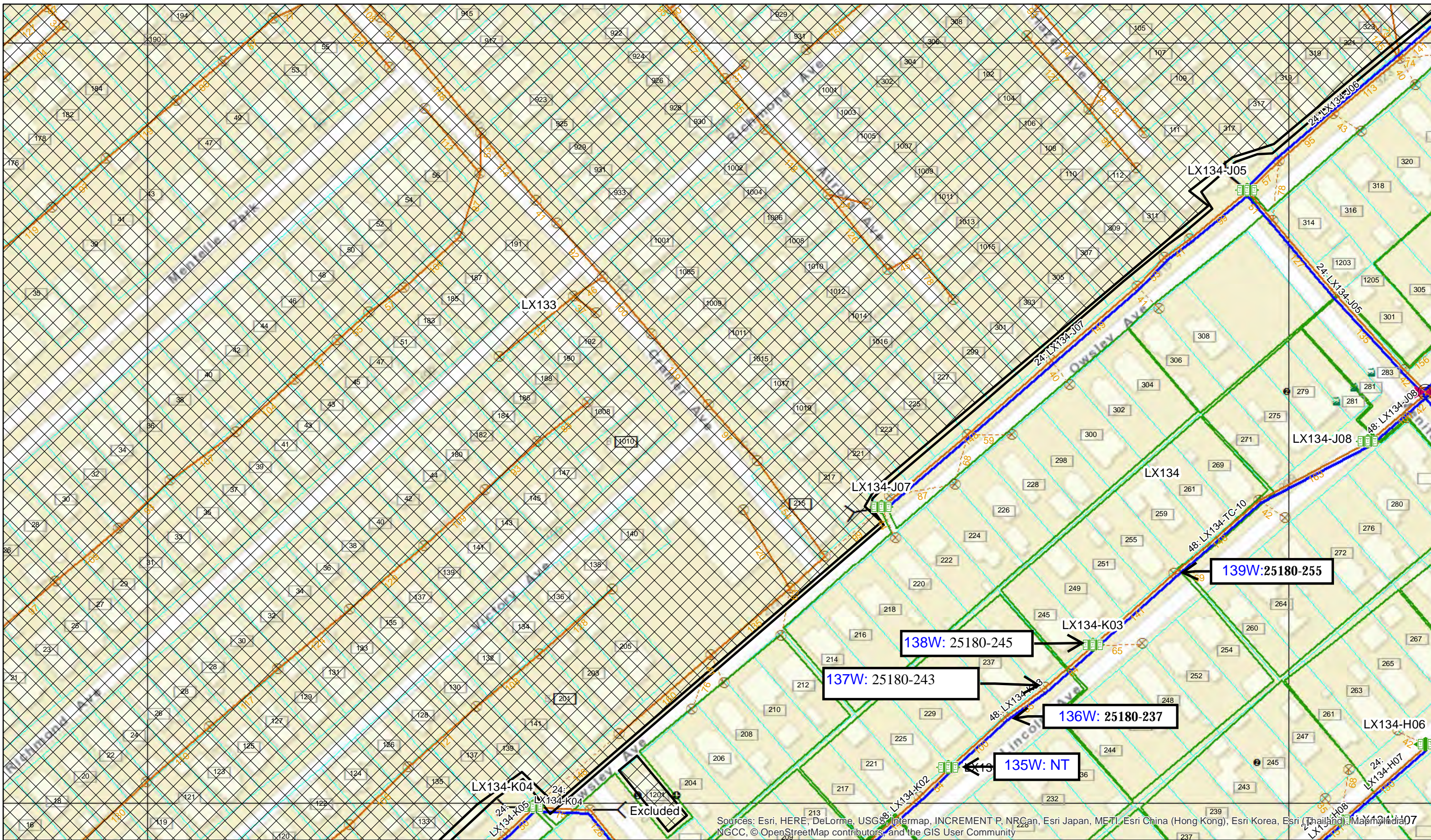
REV	DATE	DESCRIPTION	ENG	DRAFTER

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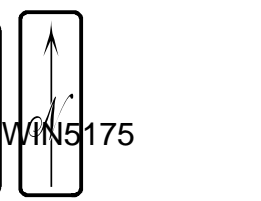
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 PROJECT NUMBER:
 LXTNXY.00457.CB
 DATE: 12/5/2017
 USER NAME: arqjls
 DESIGN ENG

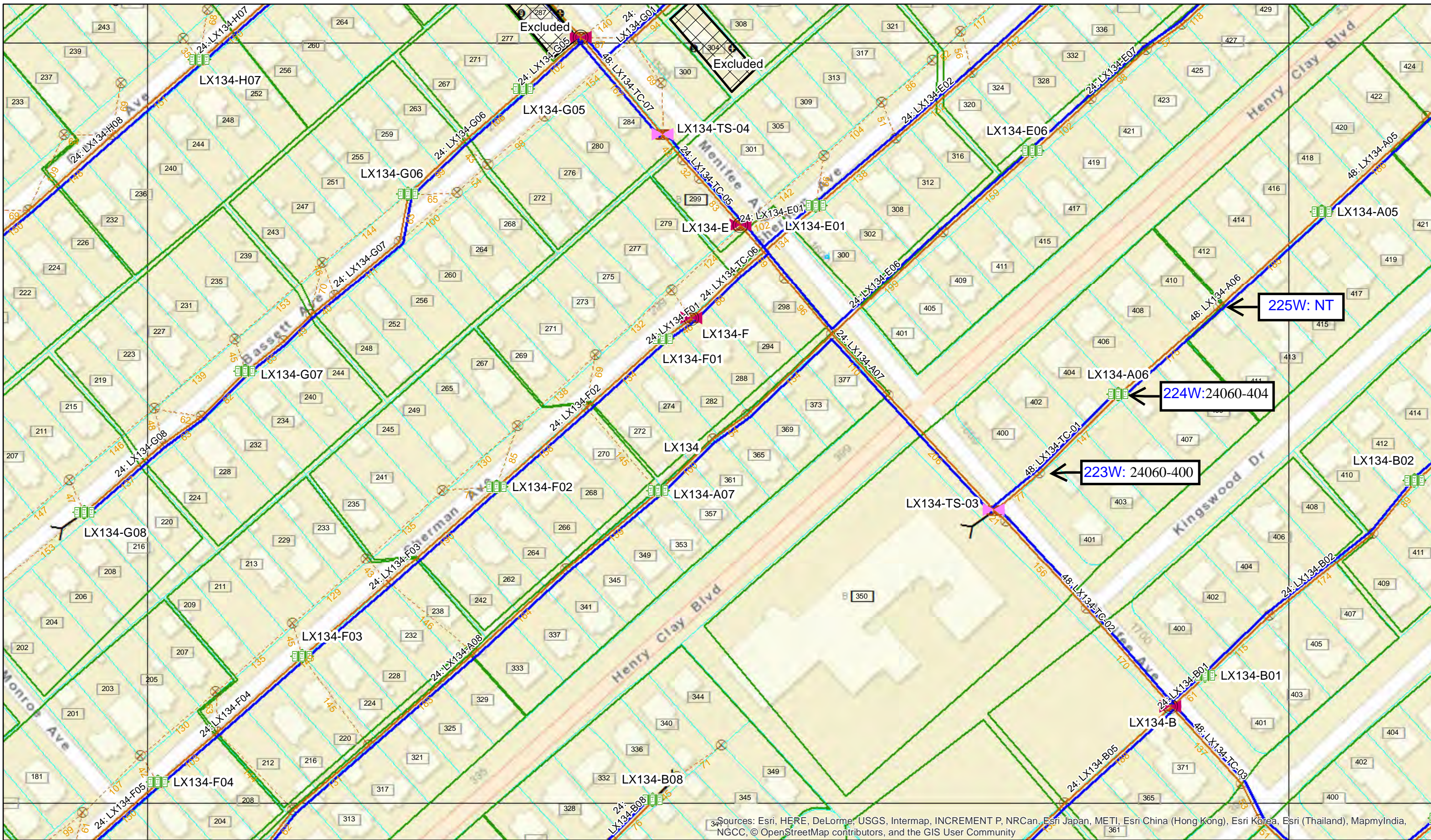
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 ROUTE: LX134 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAZ32
 PROJECT NUMBER:
 LXTNXY.00437.CB

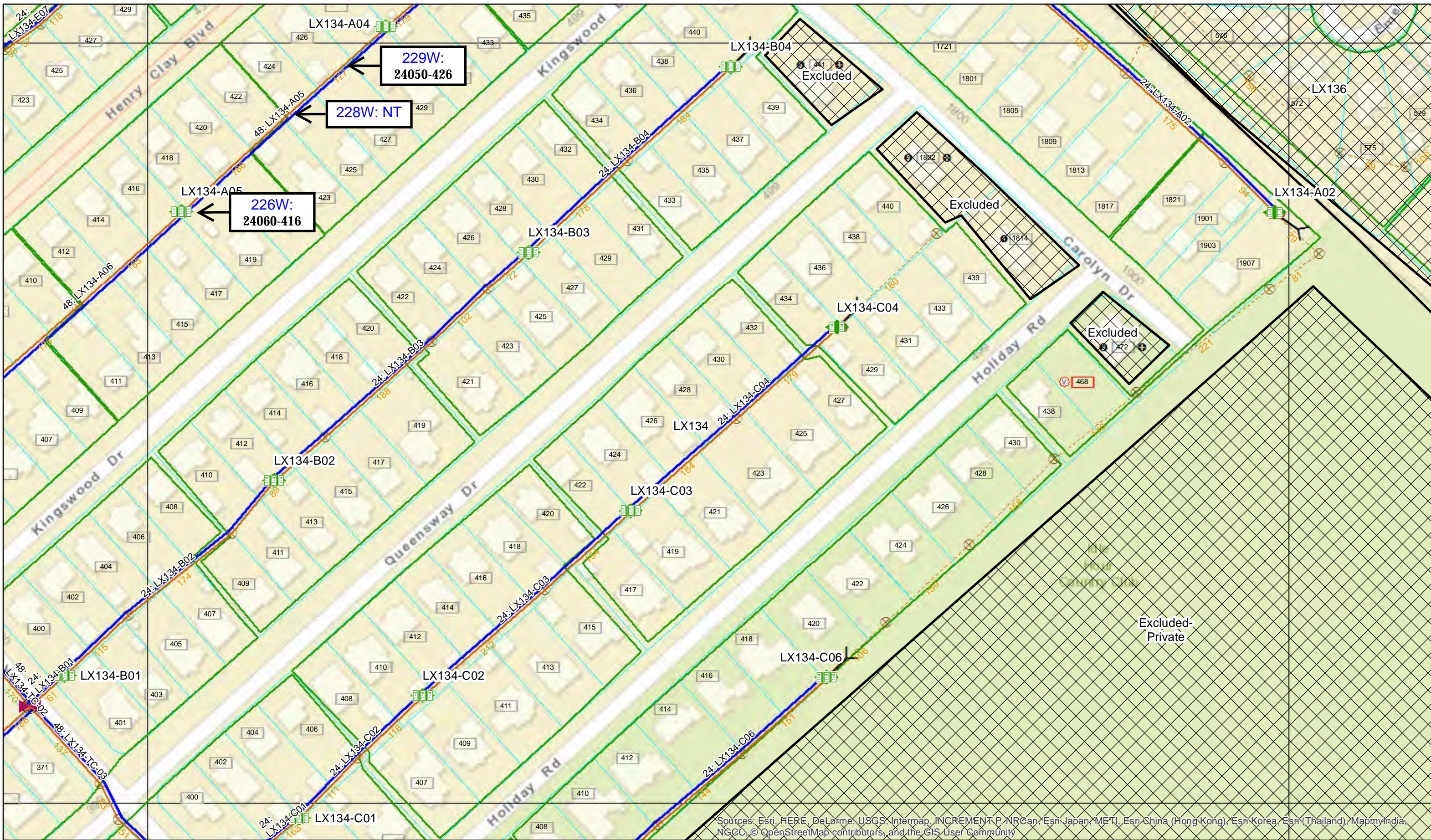
STAKING GRID DRAWING
 ROUTE: LX134 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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WIN5176



LXAZ33

PROJECT NUMBER:
LXTNXY00437.CB

DATE: 12/5/2017

USER NAME: arqjls

DESIGN ENG

STAKING GRID DRAWING

ROUTE: LX134 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

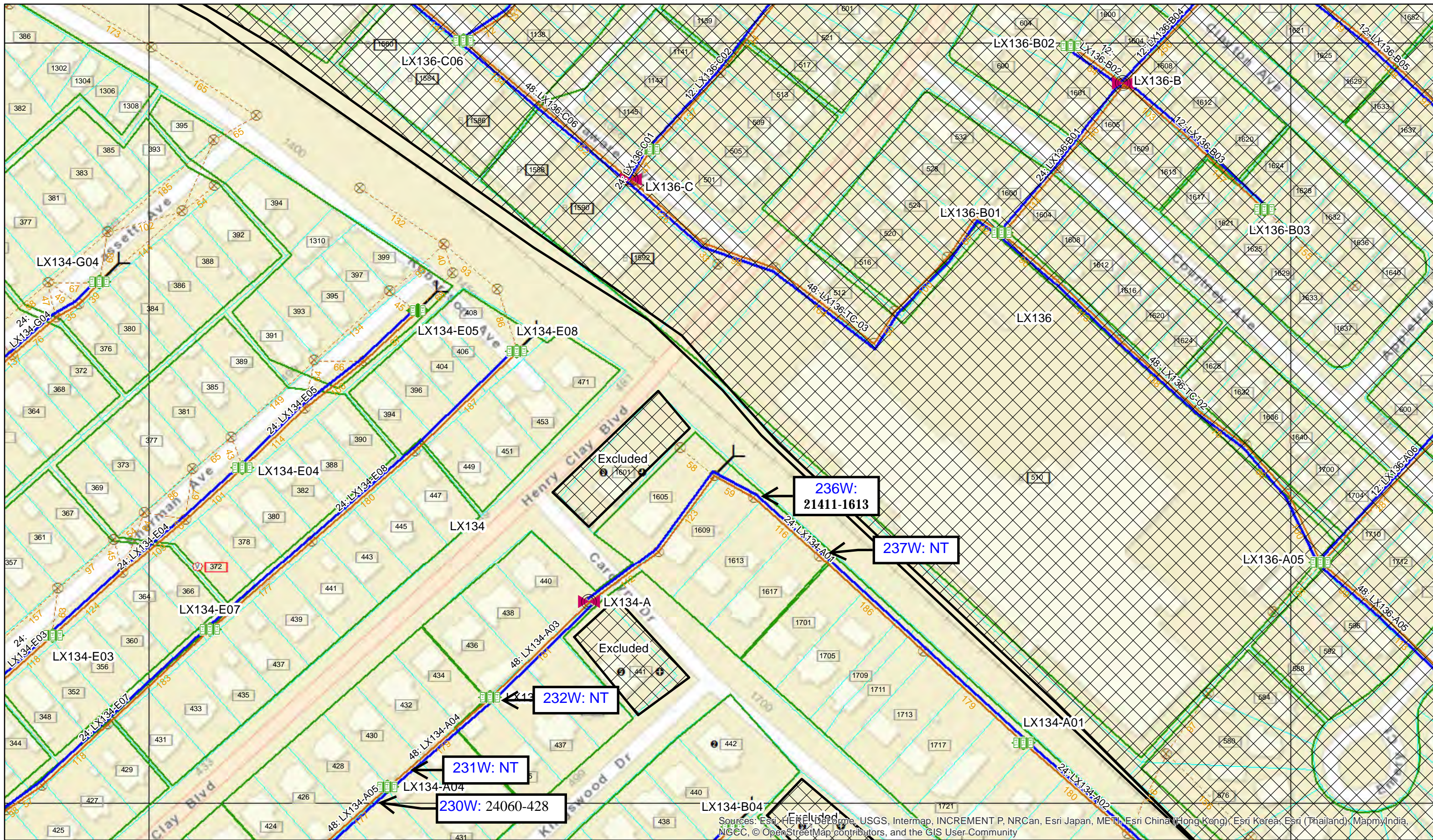
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WIN5177



LXBA33

PROJECT NUMBER:
LXTNXY.00457.CB

DATE
12/5/2017

USER NAME: arqjls

DESIGN ENG

STAKING GRID DRAWING

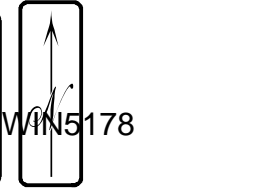
ROUTE: LX134 REV0
PROJECT: LEXINGTON CITY BUILD
LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

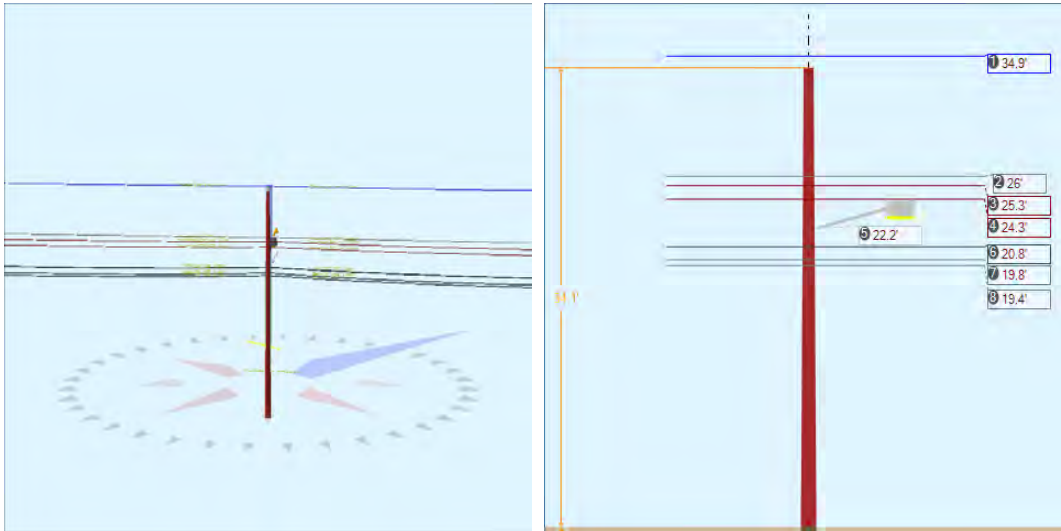
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH		MISCELLANEOUS	
Footage AERIAL (TENSION SPAN)	ROADS	WORK POINTS	
Footage AERIAL (SLACK SPAN)	RAILROADS		
Footage NEW / PROPOSED TRENCH			
Footage EXISTING INHERITED TRENCH			

Pole Num:	126W - 25180-129	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.94	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.031974 Deg	Longitude:	-84.478500 Deg	Elevation:	933.340483456217		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.8	0.0
Groundline	27.8	0.0
Vertical	7.5	18.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,893	320.8
Groundline	22,893	320.8
GL Allowable	83,869	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	280	28.3	7,909	34.6	9.4	639	307	3	642	9.4
Comms	490	49.6	10,411	45.5	12.4	841	999	10	850	12.5
Pole	187	18.9	3,248	14.2	3.9	262	1,899	18	281	4.1
Streetlights	25	2.5	1,108	4.8	1.3	90	114	1	91	1.3
Insulators	6	0.6	218	1.0	0.3	18	65	1	18	0.3
Pole Load	987	100.0	22,893	100.0	27.3	1,849	3,384	33	1,882	27.7
Pole Reserve Capacity			60,976		72.7	4,951			4,918	72.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	311	31.5	9,218	40.3	11.0	745	457	4	749	11.0
Unknown, COMMUNICATION	490	49.6	10,427	45.6	12.4	842	1,028	10	852	12.5
Pole	187	18.9	3,248	14.2	3.9	262	1,899	18	281	4.1
Totals:	987	100.0	22,893	100.0	27.3	1,849	3,384	33	1,882	27.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.93	0.00	0.3250	0.40	0.107	154.9	50.6	154.9	1,684	190	0	1,302	1,492
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.93	0.00	0.3250	0.27	0.107	128.1	230.7	128.1	1,684	-87	0	1,077	990
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.02	6.65	0.3250	0.40	0.107	154.9	50.6	154.9	1,684	141	23	970	1,134
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.02	6.65	0.3250	0.27	0.107	128.1	230.7	128.1	1,684	-65	19	802	757
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.69	0.3250	1.69	0.107	154.9	50.6	154.9	450	37	23	944	1,004
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.69	0.3250	1.31	0.107	128.1	230.7	128.1	450	-17	19	781	783
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.32	6.75	0.3250	1.69	0.107	154.9	50.6	154.9	450	35	24	906	965

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.32	6.75	0.3250	1.31	0.107	128.1	230.7	128.1	450	-16	20	750	753
											Totals:	218	128	7,532	7,879

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.79	6.97	1.3300	2.24	0.337	154.9	50.6	154.9	925	62	71	1,719	1,851
CATV	CATV 1.0	Unknown, COMMUNICATION	20.79	6.97	1.3300	1.77	0.337	128.1	230.7	128.1	925	-28	59	1,422	1,452
Telco	TELE 1.5	Unknown, COMMUNICATION	19.83	7.03	1.5000	2.63	0.900	154.9	50.6	154.9	2,000	128	124	1,792	2,044
Telco	TELE 1.5	Unknown, COMMUNICATION	19.83	7.03	1.5000	2.07	0.900	128.1	230.7	128.1	2,000	-59	103	1,482	1,526
Telco	TELE 1.5	Unknown, COMMUNICATION	19.40	7.05	1.5000	2.63	0.900	154.9	50.6	154.9	2,000	125	125	1,752	2,002
Telco	TELE 1.5	Unknown, COMMUNICATION	19.40	7.05	1.5000	2.07	0.900	128.1	230.7	128.1	2,000	-57	103	1,449	1,496
											Totals:	170	585	9,615	10,371

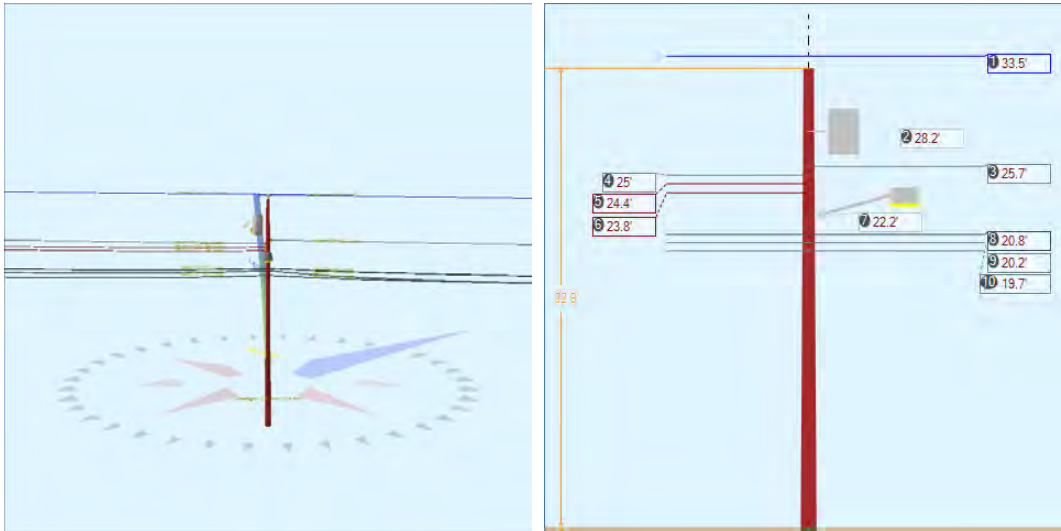
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	22.18	4.38	322.0	322.0	60.00	24.00	20.00	3.00	72.00	547	556	1,103
											Totals:	547	556	1,103

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.06	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.02	0.00	320.6	230.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.33	0.00	320.6	230.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.32	0.00	320.6	230.6	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.79	0.00	320.6	230.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.83	0.00	320.6	230.6	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	19.40	0.00	320.6	230.6	5.00	3.00	0.00	6	0	6
Totals:										23	194	217

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.37	32.93	10.73	13.04	7.32	11.47	1.60e+6	60.00	57.00	34.06	44,918	451.15	13.33

Pole Num:	127W - 25180-145	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.48	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032279 Deg	Longitude:	-84.478132 Deg	Elevation:	934.106474464534		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.6	0.0
Groundline	38.6	0.0
Vertical	11.3	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,519	270.6
Groundline	30,519	270.6
GL Allowable	80,151	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 270.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	831	62.0	19,804	64.9	24.7	1,677	224	2	1,679	24.7
Comms	299	22.3	5,983	19.6	7.5	507	913	9	516	7.6
PowerEquipments	35	2.6	1,977	6.5	2.5	167	694	7	174	2.6
Pole	149	11.1	2,511	8.2	3.1	213	1,785	18	230	3.4
Streetlights	21	1.6	77	0.3	0.1	7	114	1	8	0.1
Insulators	5	0.4	167	0.6	0.2	14	68	1	15	0.2
Pole Load	1,341	100.0	30,519	100.0	38.1	2,584	3,798	38	2,622	38.6
Pole Reserve Capacity			49,632		61.9	4,216			4,178	61.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 270.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	892	66.6	22,029	72.2	27.5	1,865	1,072	11	1,876	27.6
Unknown, COMMUNICATION	299	22.3	5,979	19.6	7.5	506	941	9	516	7.6
Pole	149	11.1	2,511	8.2	3.1	213	1,785	18	230	3.4
Totals:	1,341	100.0	30,519	100.0	38.1	2,584	3,798	38	2,622	38.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.52	0.00	0.3250	0.17	0.107	103.6	50.1	103.6	1,684	-42,922	0	520	-42,402
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.52	0.00	0.3250	0.38	0.107	154.9	230.6	154.9	1,684	43,241	0	768	44,009
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.68	6.58	0.3250	0.17	0.107	103.6	50.1	103.6	1,684	-32,871	-12	398	-32,484
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.05	6.62	0.3250	0.38	0.107	154.9	230.6	154.9	1,684	32,295	18	573	32,886
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.43	6.66	0.3250	1.67	0.107	154.9	230.6	154.9	450	8,419	18	559	8,996
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.80	6.70	0.3250	1.67	0.107	154.9	230.6	154.9	450	8,200	18	545	8,763
										Totals:	16,362	42	3,364	19,767

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.83	6.88	1.3300	1.38	0.337	103.6	50.1	103.6	925	-14,642	-30	717	-13,956
CATV	CATV 1.0 Unknown, COMMUNICATION	20.83	6.88	1.3300	2.23	0.337	154.9	230.6	154.9	925	14,751	-45	1,058	15,763
Telco	TELE 1.5 Unknown, COMMUNICATION	20.25	6.91	1.5000	2.63	0.900	154.9	230.6	154.9	2,000	31,011	79	1,124	32,214
Telco	TELE 1.5 Unknown, COMMUNICATION	20.25	6.91	1.5000	1.59	0.900	103.6	50.1	103.7	2,000	-30,783	53	762	-29,968
Telco	TELE 1.5 Unknown, COMMUNICATION	19.65	6.95	1.5000	1.59	0.900	103.6	50.1	103.6	2,000	-29,874	-53	739	-29,188
Telco	TELE 1.5 Unknown, COMMUNICATION	19.65	6.95	1.5000	2.63	0.900	154.9	230.6	154.9	2,000	30,096	-80	1,091	31,107
Totals:											559	-77	5,489	5,972

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-25KVA KU, UTILITY	28.22	20.93	235.0	235.0	365.00	39.00	--	22.00	--	983	990	1,973
Totals:											983	990	1,973

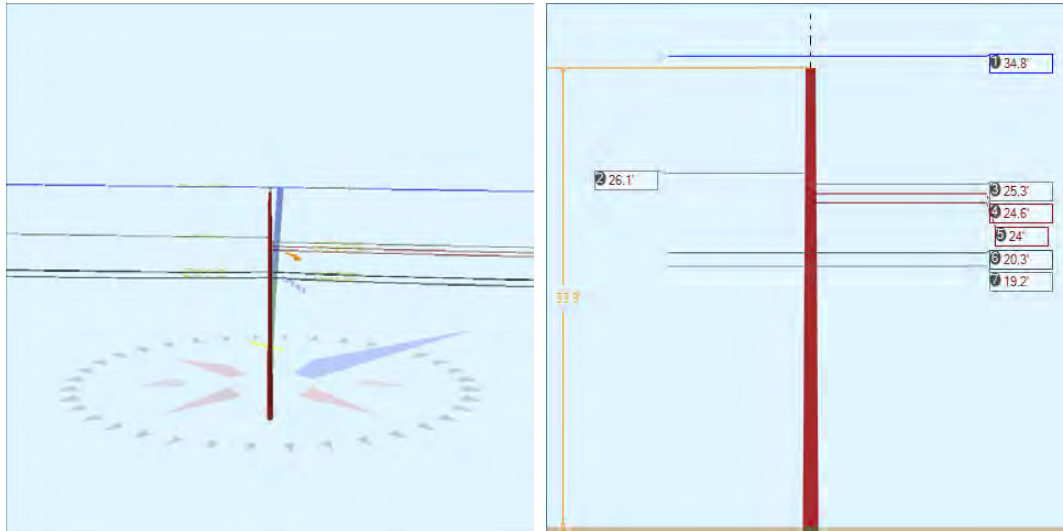
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 6 ft. Arm KU, UTILITY	22.17	4.30	135.0	135.0	60.00	24.00	20.00	3.00	72.00	-391	468	77
Totals:											-391	468	77

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV KU, UTILITY	32.65	0.00	0.0	0.0	13.00	9.00	10.50	0	128	128
Spool	Spool Insulator - 25 kV KU, UTILITY	25.68	0.00	50.1	50.1	2.00	3.00	3.19	-2	10	8
Spool	Spool Insulator - 25 kV KU, UTILITY	25.05	0.00	230.6	230.6	2.00	3.00	3.19	2	10	11
Spool	Spool Insulator - 25 kV KU, UTILITY	24.43	0.00	230.6	230.6	2.00	3.00	3.19	2	10	11
Spool	Spool Insulator - 25 kV KU, UTILITY	23.80	0.00	230.6	230.6	2.00	3.00	3.19	2	9	11

Bolt	Three Bolt	Unknown, COMMUNICATION	20.83	0.00	140.4	230.4	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	20.25	0.00	320.6	230.6	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	19.65	0.00	140.4	230.4	5.00	3.00	0.00	-4	0	-4
Totals:										0	167	166

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.21	33.27	10.48	14.25	7.32	11.30	1.60e+6	60.00	57.00	32.65	33,731	336.09	8.85

Pole Num:	128W - 25180-153	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.10	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.96	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032446 Deg	Longitude:	-84.477861 Deg	Elevation:	936.920795336414		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	116.3
Groundline	0.0	116.3
Vertical	17.1	116.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	83.1	116.3
Groundline	83.1	116.3
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 83.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	863	74.3	20,374	78.1	24.4	1,655	166	2	1,657	24.4
Comms	137	11.8	2,853	10.9	3.4	232	443	4	236	3.5
Pole	155	13.4	2,689	10.3	3.2	218	1,886	18	237	3.5
Insulators	5	0.5	181	0.7	0.2	15	59	1	15	0.2
Pole Load	1,161	100.0	26,097	100.0	31.3	2,120	2,554	25	2,145	31.5
Pole Reserve Capacity			57,348		68.7	4,680			4,655	68.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 83.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	868	74.8	20,549	78.7	24.6	1,669	206	2	1,671	24.6
Unknown, COMMUNICATION	137	11.8	2,859	11.0	3.4	232	462	4	237	3.5
Pole	155	13.4	2,689	10.3	3.2	218	1,886	18	237	3.5
Totals:	1,161	100.0	26,097	100.0	31.3	2,120	2,554	25	2,145	31.5

Detailed Load Components:

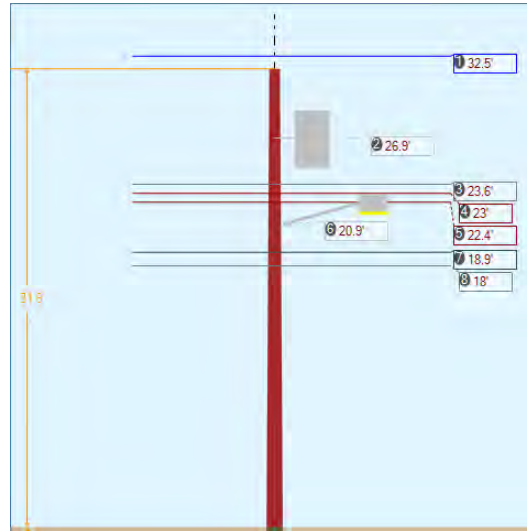
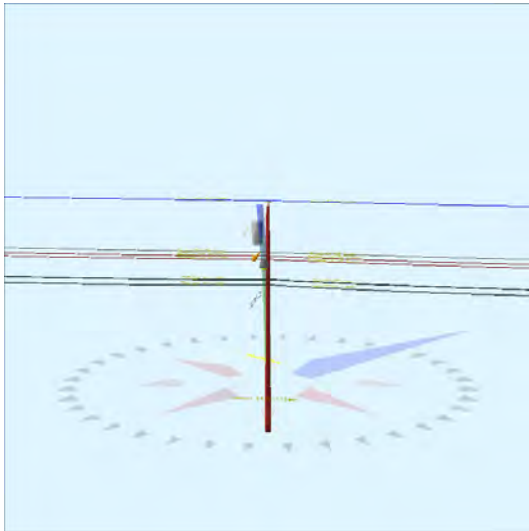
Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.78	0.00	0.3250	0.16	0.107	101.4	51.0	101.4	1,684	49,603	0	410	50,013
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.78	0.00	0.3250	0.17	0.107	103.6	230.1	103.6	1,684	-49,107	0	433	-48,674
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.12	6.63	0.3250	0.17	0.107	103.6	230.1	103.6	1,684	-36,873	-13	325	-36,561
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.68	0.3250	0.16	0.107	101.4	51.0	101.4	1,684	36,110	13	299	36,422
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.63	6.72	0.3250	0.94	0.107	101.4	51.0	101.4	450	9,384	13	291	9,688
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.95	6.77	0.3250	0.94	0.107	101.4	51.0	101.4	450	9,126	13	283	9,422
Totals:											18,243	26	2,040	20,310

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.26	6.99	1.3300	1.34	0.337	101.4	51.0	101.4	925	15,864	25	530	16,419
CATV	CATV 1.0 Unknown, COMMUNICATION	20.26	6.99	1.3300	1.37	0.337	103.6	230.1	103.6	925	-15,705	26	559	-15,121
Telco	TELE 1.5 Unknown, COMMUNICATION	19.25	7.05	1.5000	1.55	0.900	101.4	51.0	101.4	2,000	32,598	44	551	33,192
Telco	TELE 1.5 Unknown, COMMUNICATION	19.25	7.05	1.5000	1.59	0.900	103.6	230.1	103.6	2,000	-32,272	45	581	-31,647
Totals:											484	140	2,220	2,844

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.90	0.00	0.0	0.0	13.00	9.00	10.50	0	132	132
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.12	0.00	230.1	230.1	2.00	3.00	3.19	-2	10	8
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.33	0.00	51.0	51.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.63	0.00	51.0	51.0	2.00	3.00	3.19	2	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.95	0.00	51.0	51.0	2.00	3.00	3.19	2	9	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.26	0.00	140.6	50.6	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	19.25	0.00	140.6	50.6	5.00	3.00	0.00	3	0	3
Totals:										10	171	181

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.14	32.73	10.76	11.19	7.32	11.45	1.60e+6	60.00	57.00	33.90	52,307	521.15	20.41

Pole Num:	129W - 25180-161	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.41	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.08	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032617 Deg	Longitude:	-84.477565 Deg	Elevation:	938.82147020269		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.7	0.0
Groundline	28.7	0.0
Vertical	12.1	20.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,807	148.4
Groundline	21,807	148.4
GL Allowable	77,438	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 148.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	358	37.6	9,463	43.4	12.2	827	221	2	830	12.2
Comms	338	35.5	6,498	29.8	8.4	568	440	4	573	8.4
PowerEquipments	55	5.7	1,802	8.3	2.3	158	1,216	12	170	2.5
Pole	170	17.9	2,778	12.7	3.6	243	1,702	17	260	3.8
Streetlights	25	2.6	1,068	4.9	1.4	93	114	1	95	1.4
Insulators	6	0.6	197	0.9	0.3	17	55	1	18	0.3
Pole Load	951	100.0	21,807	100.0	28.2	1,907	3,748	38	1,945	28.6
Pole Reserve Capacity			55,631		71.8	4,893			4,855	71.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 148.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	443	46.6	12,519	57.4	16.2	1,095	1,587	16	1,111	16.3
Unknown, COMMUNICATION	338	35.5	6,509	29.9	8.4	569	459	5	574	8.4
Pole	170	17.9	2,778	12.7	3.6	243	1,702	17	260	3.8
Totals:	951	100.0	21,807	100.0	28.2	1,907	3,748	38	1,945	28.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	32.46	0.00	0.3250	0.18	0.107	102.4	53.2	102.4	1,684	-4,914	0	797	-4,117
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	32.46	0.00	0.3250	0.17	0.107	101.4	231.0	101.4	1,684	7,001	0	785	7,786
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.64	6.64	0.3250	0.18	0.107	102.4	53.2	102.4	1,684	-3,576	15	580	-2,981
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.64	6.64	0.3250	0.17	0.107	101.4	231.0	101.4	1,684	5,095	15	571	5,682
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.00	6.68	0.3250	0.97	0.107	102.4	53.2	102.4	450	-930	15	565	-350
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.00	6.68	0.3250	0.96	0.107	101.4	231.0	101.4	450	1,325	15	556	1,896
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	22.40	6.72	0.3250	0.97	0.107	102.4	53.2	102.4	450	-906	15	550	-340

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	22.40	6.72	0.3250	0.96	0.107	101.4	231.0	101.4	450	1,290	15	541	1,847	
												Totals:	4,386	92	4,945	9,423

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
CATV	CATV 1.0	Unknown, COMMUNICATION	18.94	6.93	1.3300	1.36	0.337	102.4	53.2	102.4	925	-1,574	46	1,031	-497	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.94	6.93	1.3300	1.34	0.337	101.4	231.0	101.4	925	2,243	46	1,015	3,304	
Telco	TELE 1.5	Unknown, COMMUNICATION	18.01	6.99	1.5000	1.57	0.900	102.4	53.2	102.4	2,000	-3,236	81	1,072	-2,083	
Telco	TELE 1.5	Unknown, COMMUNICATION	18.01	6.99	1.5000	1.56	0.900	101.4	231.0	101.4	2,000	4,611	81	1,055	5,747	
												Totals:	2,043	254	4,173	6,471

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Transformer	1PH-50KVA	KU, UTILITY	26.91	21.95	230.0	230.0	640.00	47.00	--	24.00	--	323	1,471	1,794	
												Totals:	323	1,471	1,794

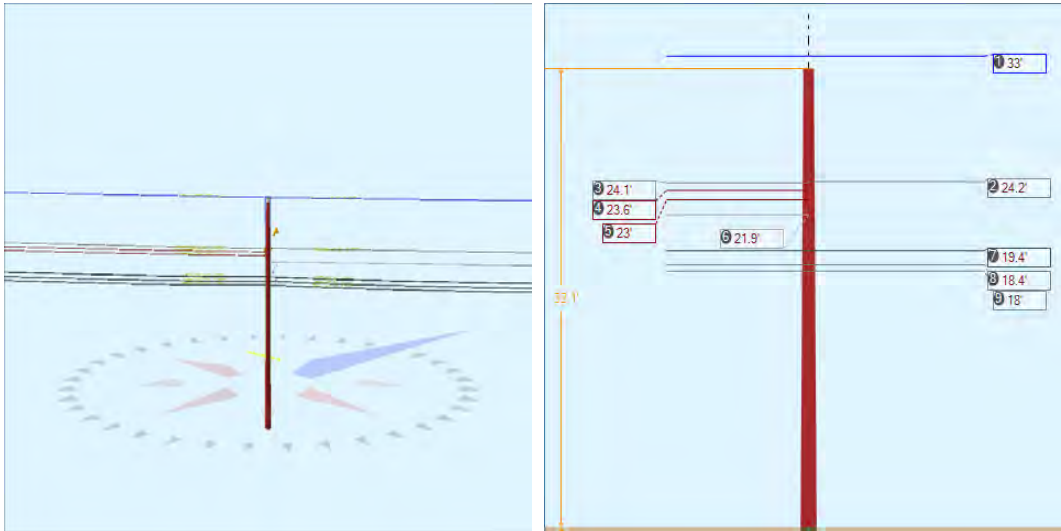
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
General	Streetlight - 6 ft. Arm	KU, UTILITY	20.89	4.31	140.0	140.0	60.00	24.00	20.00	3.00	72.00	541	523	1,063	
												Totals:	541	523	1,063

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	31.59	0.00	0.0	0.0	13.00	9.00	10.50	0	147	147
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.64	0.00	142.1	52.1	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.00	0.00	142.1	52.1	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.40	0.00	142.1	52.1	2.00	3.00	3.19	2	10	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.94	0.00	142.1	52.1	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	18.01	0.00	142.1	52.1	5.00	3.00	0.00	5	0	5
Totals:										17	179	196

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.52	33.36	10.33	14.21	7.32	11.17	1.60e+6	60.00	57.00	31.59	30,950	309.78	8.26

Pole Num:	130W - 25180-169	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.86	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.29	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032808 Deg	Longitude:	-84.477321 Deg	Elevation:	935.889155139071		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	321.2
Groundline	0.0	321.2
Vertical	16.7	229.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,850	316.6
Groundline	30,850	316.6
GL Allowable	78,861	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	97.9	49.6		5.6	321.2	6.3	220.0
? EHS 3/8 (Span/Head)			21.9	8.1	321.2	10.0	220.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 316.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	553	38.4	14,872	48.2	18.9	1,278	164	2	1,280	18.8
Comms	740	51.4	13,623	44.2	17.3	1,171	707	7	1,178	17.3
GuyBraces	-33	-2.3	-715	-2.3	-0.9	-61	23	0	-61	-0.9
Pole	173	12.0	2,881	9.3	3.7	248	1,746	18	265	3.9
Insulators	6	0.4	189	0.6	0.2	16	68	1	17	0.2
Pole Load	1,440	100.0	30,850	100.0	39.1	2,652	2,708	27	2,679	39.4
Pole Reserve Capacity			48,011		60.9	4,148			4,121	60.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 316.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	527	36.6	14,352	46.5	18.2	1,234	227	2	1,236	18.2
Unknown, COMMUNICATION	740	51.4	13,618	44.1	17.3	1,171	736	7	1,178	17.3
Pole	173	12.0	2,881	9.3	3.7	248	1,746	18	265	3.9
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,440	100.0	30,850	100.0	39.1	2,652	2,708	27	2,679	39.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.02	0.00	0.3250	0.16	0.107	97.9	49.6	97.9	1,684	-3,727	0	777	-2,950
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.02	0.00	0.3250	0.18	0.107	102.4	233.2	102.4	1,684	8,254	0	808	9,063
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.22	6.64	0.3250	0.16	0.107	97.9	49.6	97.9	1,684	-2,733	-1	570	-2,164
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.14	6.65	0.3250	0.18	0.107	102.4	233.2	102.4	1,684	6,032	2	591	6,625
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.61	6.68	0.3250	0.97	0.107	102.4	233.2	102.4	450	1,577	2	578	2,156
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	22.95	6.72	0.3250	0.97	0.107	102.4	233.2	102.4	450	1,533	2	562	2,096
										Totals:	10,936	5	3,885	14,826

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	19.38	6.94	1.3300	1.29	0.337	97.9	49.6	97.9	925	-1,201	-44	1,011	-234
CATV	CATV 1.0 Unknown, COMMUNICATION	19.38	6.94	1.3300	1.36	0.337	102.4	233.2	102.4	925	2,660	-46	1,052	3,666
Telco	TELE 1.5 Unknown, COMMUNICATION	18.41	7.00	1.5000	1.49	0.900	97.9	49.6	97.9	2,000	-2,467	78	1,050	-1,339
Telco	TELE 1.5 Unknown, COMMUNICATION	18.41	7.00	1.5000	1.57	0.900	102.4	233.2	102.4	2,000	5,463	82	1,092	6,636
Telco	TELE 1.5 Unknown, COMMUNICATION	17.96	7.02	1.5000	1.49	0.900	97.9	49.6	97.9	2,000	-2,406	-78	1,024	-1,461
Telco	TELE 1.5 Unknown, COMMUNICATION	17.96	7.02	1.5000	1.57	0.900	102.4	233.2	102.4	2,000	5,329	-82	1,065	6,313
Totals:											7,379	-91	6,294	13,581

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	32.15	0.00	0.0	0.0	13.00	9.00	10.50	0	149	149	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.22	0.00	49.6	49.6	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.14	0.00	233.2	233.2	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.61	0.00	233.2	233.2	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	22.95	0.00	233.2	233.2	2.00	3.00	3.19	0	11	11	
Bolt	Three Bolt Unknown, COMMUNICATION	19.38	0.00	141.4	231.4	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.41	0.00	321.4	231.4	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	17.96	0.00	141.4	231.4	5.00	3.00	0.00	-6	0	-6	
Totals:										-5	193	188

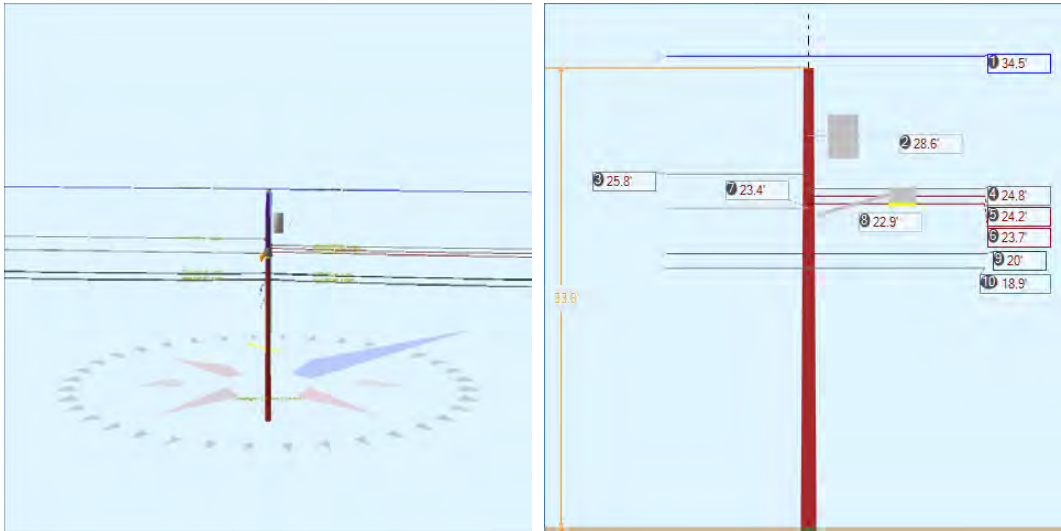
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head KU, UTILITY	21.89	21.89	97.92	0.375	75.00	49.6	0.0	0.273	96.06	0.68

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	1,392	1,266	1,120	0	1,120	-57	-713
Totals:										0	1,120	-57	-713

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	97.92	49.6	20,000	1.00	20,000	1,266	1,120	6.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	16.67	32.71	10.57	6.70	7.32	11.24	1.60e+6	60.00	57.00	32.15	411,194	3869.15	142.86

Pole Num:	131W - 25180-177	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.41	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032986 Deg	Longitude:	-84.477059 Deg	Elevation:	937.216042819354		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	20.8	0.0
Groundline	20.8	0.0
Vertical	1.3	20.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,738	131.2
Groundline	16,738	131.2
GL Allowable	82,636	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	97.9	229.6		5.3	139.3	6.3	50.0
? EHS 3/8 (Span/Head)			23.4	7.6	139.3	9.9	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 131.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	300	40.4	7,388	44.1	8.9	605	158	2	607	8.9
Comms	317	42.7	6,536	39.1	7.9	535	688	7	542	8.0
GuyBraces	-129	-17.3	-3,015	-18.0	-3.7	-247	23	0	-247	-3.6
PowerEquipments	41	5.6	1,374	8.2	1.7	113	694	7	119	1.8
Pole	182	24.5	3,124	18.7	3.8	256	1,861	18	274	4.0
Streetlights	25	3.3	1,118	6.7	1.4	92	114	1	93	1.4
Insulators	6	0.9	213	1.3	0.3	17	59	1	18	0.3
Pole Load	742	100.0	16,738	100.0	20.3	1,371	3,597	35	1,406	20.7
Pole Reserve Capacity			65,898		79.7	5,429			5,394	79.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 131.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	244	32.8	7,067	42.2	8.6	579	1,028	10	589	8.7
Unknown, COMMUNICATION	317	42.7	6,547	39.1	7.9	536	707	7	543	8.0
Pole	182	24.5	3,124	18.7	3.8	256	1,861	18	274	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	742	100.0	16,738	100.0	20.3	1,371	3,597	35	1,406	20.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.47	0.00	0.3250	0.16	0.107	96.9	49.5	96.9	1,684	10,869	0	796	11,664
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.47	0.00	0.3250	0.16	0.107	97.9	229.6	97.9	1,684	-10,999	0	804	-10,195
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.84	6.63	0.3250	0.16	0.107	97.9	229.6	97.9	1,684	-8,241	-2	602	-7,641
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.78	6.70	0.3250	0.16	0.107	96.9	49.5	96.9	1,684	7,809	2	572	8,383
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.22	6.73	0.3250	0.90	0.107	96.9	49.5	96.9	450	2,040	2	559	2,601

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.66	6.77	0.3250	0.90	0.107	96.9	49.5	96.9	450	1,992	2	546	2,540
Totals:												3,471	4	3,879	7,354

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.01	6.99	1.3300	1.28	0.337	96.9	49.5	96.9	925	3,465	44	1,025	4,533
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.01	6.99	1.3300	1.29	0.337	97.9	229.6	97.9	925	-3,506	44	1,035	-2,427
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.94	7.05	1.5000	1.47	0.900	96.9	49.5	96.9	2,000	7,088	77	1,059	8,225
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.94	7.05	1.5000	1.47	0.900	96.9	49.5	96.9	2,000	7,088	77	1,059	8,225
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.94	7.05	1.5000	1.49	0.900	97.9	229.6	97.9	2,000	-7,173	78	1,070	-6,025
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.94	7.05	1.5000	1.49	0.900	97.9	229.6	97.9	2,000	-7,173	78	1,070	-6,025
		COMMUNICATION													
Totals:											-212	399	6,318	6,506	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	28.64	20.96	50.0	50.0	365.00	39.00	--	22.00	--	185	1,183	1,367
Totals:											185	1,183	1,367	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	22.86	4.31	135.0	135.0	60.00	24.00	20.00	3.00	72.00	545	568	1,113
Totals:											545	568	1,113	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.60	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.84	0.00	229.6	229.6	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.78	0.00	49.5	49.5	2.00	3.00	3.19	0	11	12

Spool	Spool Insulator - 25 kV	KU, UTILITY	24.22	0.00	49.5	49.5	2.00	3.00	3.19	0	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.66	0.00	49.5	49.5	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.01	0.00	139.6	229.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.94	0.00	139.6	49.6	5.00	3.00	0.00	6	0	6
Totals:										12	200	212

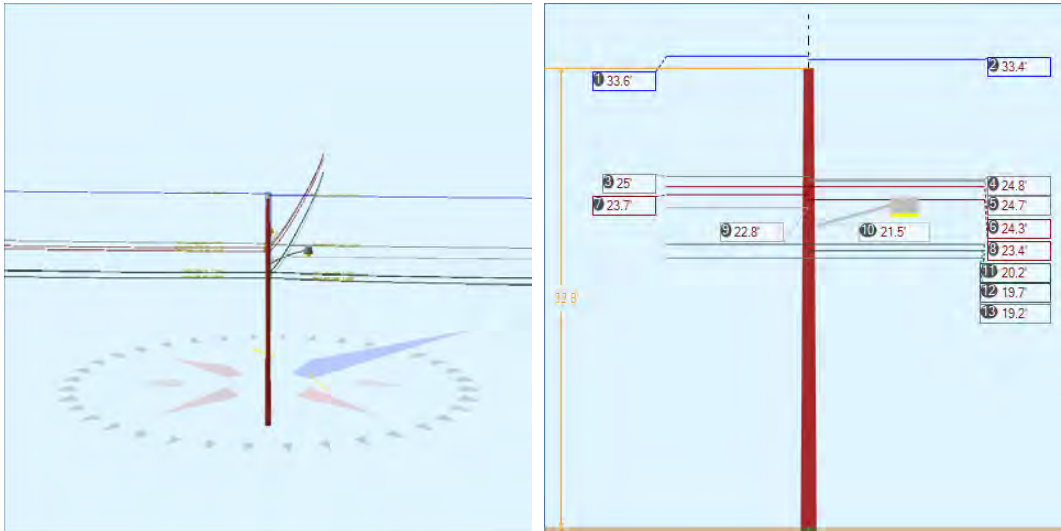
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	23.35	23.35	97.92	0.375	75.00	229.6	0.0	0.273	96.06	0.64

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	1,376	1,251	1,053	0	1,053	-153	-3,001	
Totals:											0	1,053	-153	-3,001

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	97.92	229.6	20,000	1.00	20,000	1,251	1,053	6.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.09	33.21	10.60	8.26	7.32	11.42	1.60e+6	60.00	57.00	33.60	286,090	2766.57	76.92

Pole Num:	132W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.24	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033159 Deg	Longitude:	-84.476825 Deg	Elevation:	932.486473205945		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.7	0.0
Groundline	56.7	0.0
Vertical	0.9	17.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	45,216	317.6
Groundline	45,216	317.6
GL Allowable	80,458	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	106.2	48.6		2.7	317.9	4.3	230.0
? EHS 3/8 (Span/Head)			22.8	4.0	317.9	6.7	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 317.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	828	39.7	20,949	46.3	26.0	1,767	276	3	1,770	26.0
Comms	1,030	49.3	19,872	44.0	24.7	1,676	867	9	1,685	24.8
GuyBraces	17	0.8	399	0.9	0.5	34	25	0	34	0.5
Pole	178	8.5	3,008	6.7	3.7	254	1,795	18	272	4.0
Streetlights	25	1.2	707	1.6	0.9	60	114	1	61	0.9
Insulators	9	0.4	281	0.6	0.4	24	101	1	25	0.4
Pole Load	2,088	100.0	45,216	100.0	56.2	3,814	3,177	32	3,845	56.5
Pole Reserve Capacity			35,242		43.8	2,986			2,955	43.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 317.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	880	42.1	22,336	49.4	27.8	1,884	478	5	1,889	27.8
Unknown, COMMUNICATION	1,030	49.3	19,872	44.0	24.7	1,676	905	9	1,685	24.8
Pole	178	8.5	3,008	6.7	3.7	254	1,795	18	272	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	2,088	100.0	45,216	100.0	56.2	3,814	3,177	32	3,845	56.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.39	0.00	0.3250	0.19	0.107	106.2	48.6	106.2	1,684	-1,275	0	854	-421
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.64	0.00	0.3250	0.16	0.107	96.9	229.5	96.9	1,684	2,441	0	784	3,225
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.03	6.63	0.3250	0.16	0.107	96.9	229.5	96.9	1,684	1,816	0	583	2,399
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.85	6.64	0.3980	0.21	0.145	106.2	48.6	106.2	2,128	-1,198	0	691	-507
Neutral	#4 COPPER SOLID	KU, UTILITY	24.70	6.65	0.2043	0.39	0.126	141.2	321.0	141.3	150	4,808	20	2	4,830
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.31	6.67	0.3250	0.90	0.107	96.9	229.5	96.9	450	471	0	566	1,038

Secondary	#4 COPPER SOLID	KU, UTILITY	24.31	6.67	0.2043	0.39	0.126	141.2	321.0	141.3	150	4,732	20	2	4,755
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.75	6.71	0.3250	0.90	0.107	96.9	229.5	96.9	450	460	0	553	1,014
Secondary	#4 COPPER SOLID	KU, UTILITY	23.38	6.73	0.2043	0.39	0.126	141.2	321.0	141.3	150	4,550	20	2	4,573
Totals:											16,806	62	4,039	20,906	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.19	6.93	1.3300	1.42	0.337	106.2	48.6	106.2	925	-423	-48	1,145	673
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.19	6.93	1.3300	1.28	0.337	96.9	229.5	96.9	925	805	-44	1,044	1,804
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.75	6.95	1.3300	1.97	0.337	141.2	321.0	141.4	350	8,969	64	5	9,038
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.22	6.98	1.5000	1.64	0.900	106.2	48.6	106.3	2,000	-871	-85	1,191	235
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.22	6.98	1.5000	1.64	0.900	106.2	48.6	106.3	2,000	-871	-85	1,191	235
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.22	6.98	1.5000	1.47	0.900	96.9	229.5	96.9	2,000	1,656	-77	1,086	2,664
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.22	6.98	1.5000	1.47	0.900	96.9	229.5	96.9	2,000	1,656	-77	1,086	2,664
		COMMUNICATION													
Overlashed Bundle	1/4" EHS	Unknown,	19.22	6.98	0.2500	3.48	0.121	141.2	321.0	141.4	100	2,494	22	2	2,518
		COMMUNICATION													
Totals:											13,413	-330	6,748	19,831	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	21.54	4.34	30.0	30.0	60.00	24.00	20.00	3.00	72.00	165	540	706
Totals:											165	540	706	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.76	0.00	0.0	0.0	6.00	3.50	7.50	0	42	42
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.76	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153

Spool	Spool Insulator - 25 kV	KU, UTILITY	25.03	0.00	229.5	229.5	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.85	0.00	46.6	46.6	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.70	0.00	321.0	321.0	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.31	0.00	229.5	229.5	2.00	3.00	3.19	0	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.31	0.00	321.0	321.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.75	0.00	229.5	229.5	2.00	3.00	3.19	0	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.38	0.00	321.0	321.0	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.19	0.00	138.1	228.1	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	19.75	0.00	321.0	411.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.22	0.00	138.1	48.1	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	19.22	0.00	321.0	411.0	5.00	3.00	0.00	6	0	6
Totals:										7	274	281

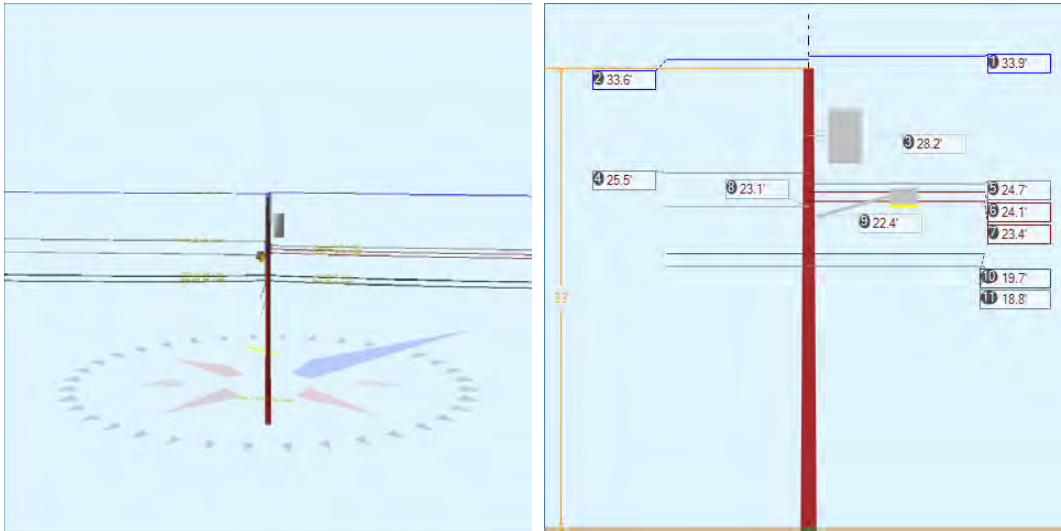
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	22.82	22.82	106.24	0.375	75.00	48.6	0.0	0.273	104.39	0.36

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	934	849	548	0	548	-10	398
Totals:										0	548	-10	398

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	106.24	48.6	20,000	1.00	20,000	849	548	4.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	17.86	32.88	10.59	7.41	7.32	11.31	1.60e+6	60.00	57.00	32.76	361,530	3530.21	111.11

Pole Num:	133W - 25180-205	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.99	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.62	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033355 Deg	Longitude:	-84.476540 Deg	Elevation:	925.471662477418		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.6	0.0
Groundline	29.6	0.0
Vertical	1.7	21.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,521	136.3
Groundline	23,521	136.3
GL Allowable	81,099	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	106.2	228.6		2.8	138.6	3.9	50.0
? EHS 3/8 (Span/Head)			23.1	4.1	138.6	6.2	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 136.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	289	27.7	7,886	33.5	9.7	659	172	2	660	9.7
Comms	483	46.3	9,647	41.0	11.9	806	726	7	813	12.0
GuyBraces	4	0.4	94	0.4	0.1	8	25	0	8	0.1
PowerEquipments	55	5.3	1,501	6.4	1.9	125	1,216	12	137	2.0
Pole	180	17.2	3,034	12.9	3.7	253	1,814	18	271	4.0
Streetlights	25	2.4	1,105	4.7	1.4	92	114	1	93	1.4
Insulators	8	0.7	254	1.1	0.3	21	70	1	22	0.3
Pole Load	1,043	100.0	23,521	100.0	29.0	1,964	4,137	41	2,005	29.5
Pole Reserve Capacity			57,578		71.0	4,836			4,795	70.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 136.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	381	36.5	10,829	46.0	13.4	904	1,578	16	920	13.5
Unknown, COMMUNICATION	483	46.3	9,658	41.1	11.9	807	745	7	814	12.0
Pole	180	17.2	3,034	12.9	3.7	253	1,814	18	271	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,043	100.0	23,521	100.0	29.0	1,964	4,137	41	2,005	29.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.89	0.00	0.3250	0.17	0.107	99.4	49.8	99.4	1,684	4,556	0	809	5,365
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.64	0.00	0.3250	0.19	0.107	106.2	228.6	106.2	1,684	-2,982	0	859	-2,122
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.47	6.62	0.3980	0.21	0.145	106.2	228.6	106.2	2,128	-2,853	0	708	-2,144
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.71	6.67	0.3250	0.17	0.107	99.4	49.8	99.4	1,684	3,321	1	589	3,911
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.11	6.70	0.3250	0.93	0.107	99.4	49.8	99.4	450	866	1	575	1,442

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.45	6.74	0.3250	0.93	0.107	99.4	49.8	99.4	450	842	1	559	1,402
											Totals:	3,750	3	4,101	7,854

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.68	6.97	1.3300	1.31	0.337	99.4	49.8	99.4	925	1,453	45	1,041	2,540
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.68	6.97	1.3300	1.42	0.337	106.2	228.6	106.2	925	-958	49	1,115	206
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.75	7.03	1.5000	1.52	0.900	99.4	49.8	99.4	2,000	2,994	80	1,085	4,158
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.75	7.03	1.5000	1.52	0.900	99.4	49.8	99.4	2,000	2,994	80	1,085	4,158
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.75	7.03	1.5000	1.64	0.900	106.2	228.6	106.3	2,000	-1,974	85	1,161	-727
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.75	7.03	1.5000	1.64	0.900	106.2	228.6	106.3	2,000	-1,974	85	1,161	-727
		COMMUNICATION													
											Totals:	2,535	424	6,648	9,607

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.19	21.95	45.0	45.0	640.00	47.00	--	24.00	--	-50	1,544	1,495
											Totals:	-50	1,544	1,495

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	22.36	4.31	145.0	145.0	60.00	24.00	20.00	3.00	72.00	540	560	1,101
											Totals:	540	560	1,101

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.01	0.00	0.0	0.0	13.00	9.00	10.50	0	154	154
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.01	0.00	0.0	0.0	6.00	3.50	7.50	0	42	42
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.47	0.00	226.6	226.6	2.00	3.00	3.19	0	12	12

Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	49.8	49.8	2.00	3.00	3.19	0	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.11	0.00	49.8	49.8	2.00	3.00	3.19	0	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.45	0.00	49.8	49.8	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	19.68	0.00	138.2	48.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.75	0.00	138.2	48.2	5.00	3.00	0.00	6	0	6
Totals:										11	241	253

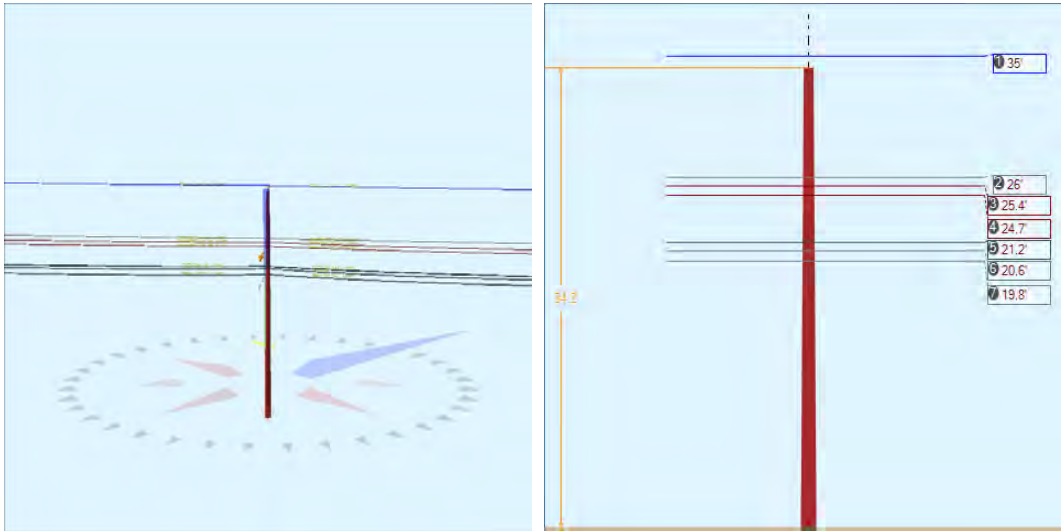
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.07	23.07	106.24	0.375	75.00	228.6	0.0	0.273	104.39	0.37

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	863	784	565	0	565	-23	94
Totals:										0	565	-23	94

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	106.24	228.6	20,000	1.00	20,000	784	565	3.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.16	33.41	10.48	9.00	7.32	11.34	1.60e+6	60.00	57.00	33.01	246,507	2433.32	58.82

Pole Num:	134W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.83	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033529 Deg	Longitude:	-84.476275 Deg	Elevation:	929.968301155646		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.4	140.0
Groundline	24.4	140.0
Vertical	6.7	140.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,168	140.0
Groundline	20,168	140.0
GL Allowable	84,177	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	260	28.9	7,404	36.7	8.8	595	268	3	598	8.8
Comms	445	49.6	9,281	46.0	11.0	746	871	8	754	11.1
Pole	187	20.9	3,275	16.2	3.9	263	1,908	18	282	4.1
Insulators	6	0.7	207	1.0	0.3	17	65	1	17	0.3
Pole Load	898	100.0	20,168	100.0	24.0	1,621	3,111	30	1,651	24.3
Pole Reserve Capacity			64,009		76.0	5,179			5,149	75.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	266	29.6	7,606	37.7	9.0	611	304	3	614	9.0
Unknown, COMMUNICATION	445	49.6	9,287	46.1	11.0	747	899	9	755	11.1
Pole	187	20.9	3,275	16.2	3.9	263	1,908	18	282	4.1
Totals:	898	100.0	20,168	100.0	24.0	1,621	3,111	30	1,651	24.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.05	0.00	0.3250	0.36	0.107	147.3	50.1	147.3	1,684	123	0	1,243	1,366
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.05	0.00	0.3250	0.17	0.107	99.4	229.8	99.4	1,684	186	0	838	1,024
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.03	6.66	0.3250	0.36	0.107	147.3	50.1	147.3	1,684	91	22	923	1,036
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.03	6.66	0.3250	0.17	0.107	99.4	229.8	99.4	1,684	138	15	622	776
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.39	6.70	0.3250	1.58	0.107	147.3	50.1	147.3	450	24	22	900	946
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.39	6.70	0.3250	0.93	0.107	99.4	229.8	99.4	450	36	15	607	658
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.69	6.74	0.3250	1.58	0.107	147.3	50.1	147.3	450	23	22	875	921
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.69	6.74	0.3250	0.93	0.107	99.4	229.8	99.4	450	35	15	590	640
Totals:										657	112	6,599	7,368	

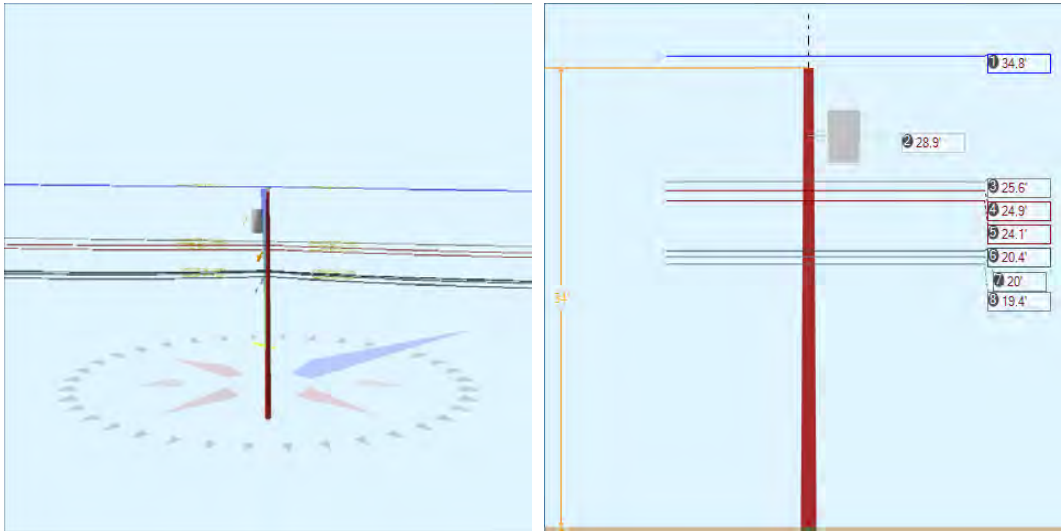
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.19	6.95	1.3300	2.10	0.337	147.3	50.1	147.4	925	41	67	1,666	1,774
CATV	CATV 1.0 Unknown, COMMUNICATION	21.19	6.95	1.3300	1.31	0.337	99.4	229.8	99.4	925	62	45	1,124	1,231
Telco	TELE 1.5 Unknown, COMMUNICATION	20.56	6.99	1.5000	2.47	0.900	147.3	50.1	147.4	2,000	86	-118	1,767	1,735

Telco	TELE 1.5	Unknown, COMMUNICATION	20.56	6.99	1.5000	1.52	0.900	99.4	229.8	99.4	2,000	130	-79	1,191	1,242
Telco	TELE 1.5	Unknown, COMMUNICATION	19.79	7.04	1.5000	2.47	0.900	147.3	50.1	147.4	2,000	82	119	1,701	1,902
Telco	TELE 1.5	Unknown, COMMUNICATION	19.79	7.04	1.5000	1.52	0.900	99.4	229.8	99.4	2,000	125	80	1,147	1,352
Totals:											525	114	8,596	9,235	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.17	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.03	0.00	139.9	49.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.39	0.00	139.9	49.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.69	0.00	139.9	49.9	2.00	3.00	3.19	2	11	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.19	0.00	139.9	49.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.56	0.00	319.9	49.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.79	0.00	139.9	49.9	5.00	3.00	0.00	6	0	6
Totals:										12	194	206

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.20	32.89	10.75	12.51	7.32	11.49	1.60e+6	60.00	57.00	34.17	46,167	464.40	14.93

Pole Num:	135W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.04	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.99	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033796 Deg	Longitude:	-84.475894 Deg	Elevation:	930.021440259501		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.6	141.2
Groundline	29.6	141.2
Vertical	14.9	141.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,220	141.2
Groundline	24,220	141.2
GL Allowable	83,616	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 145.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	300	28.1	8,409	34.7	10.1	681	323	3	684	10.1
Comms	522	48.8	10,578	43.7	12.7	857	1,052	10	867	12.8
PowerEquipments	55	5.1	1,810	7.5	2.2	147	1,216	12	158	2.3
Pole	185	17.4	3,218	13.3	3.9	261	1,891	18	279	4.1
Insulators	6	0.6	205	0.9	0.2	17	65	1	17	0.3
Pole Load	1,068	100.0	24,220	100.0	29.0	1,962	4,547	44	2,006	29.5
Pole Reserve Capacity			59,396		71.0	4,838			4,794	70.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 145.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	361	33.8	10,418	43.0	12.5	844	1,575	15	859	12.6
Unknown, COMMUNICATION	522	48.8	10,584	43.7	12.7	858	1,081	10	868	12.8
Pole	185	17.4	3,218	13.3	3.9	261	1,891	18	279	4.1
Totals:	1,068	100.0	24,220	100.0	29.0	1,962	4,547	44	2,006	29.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.84	0.00	0.3250	0.38	0.107	150.7	50.3	150.7	1,684	-5,519	0	1,258	-4,260
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.84	0.00	0.3250	0.36	0.107	147.3	230.1	147.3	1,684	5,722	0	1,229	6,952
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.57	6.67	0.3250	0.38	0.107	150.7	50.3	150.7	1,684	-4,048	23	923	-3,102
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.57	6.67	0.3250	0.36	0.107	147.3	230.1	147.3	1,684	4,198	22	902	5,122
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.89	6.71	0.3250	1.63	0.107	150.7	50.3	150.8	450	-1,053	23	899	-132
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.89	6.71	0.3250	1.58	0.107	147.3	230.1	147.3	450	1,092	22	878	1,992
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.14	6.76	0.3250	1.63	0.107	150.7	50.3	150.8	450	-1,021	23	872	-127

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.14	6.76	0.3250	1.58	0.107	147.3	230.1	147.3	450	1,059	22	852	1,933
											Totals:	430	135	7,812	8,378

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.43	6.98	1.3300	2.16	0.337	150.7	50.3	150.8	925	-1,777	69	1,636	-72
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.43	6.98	1.3300	2.10	0.337	147.3	230.1	147.4	925	1,842	67	1,599	3,508
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.01	7.01	1.5000	2.54	0.900	150.7	50.3	150.8	2,000	-3,763	-120	1,752	-2,132
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.01	7.01	1.5000	2.47	0.900	147.3	230.1	147.4	2,000	3,902	-118	1,711	5,496
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.45	7.04	1.5000	2.54	0.900	150.7	50.3	150.8	2,000	-3,657	121	1,702	-1,834
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.45	7.04	1.5000	2.47	0.900	147.3	230.1	147.4	2,000	3,792	118	1,663	5,573
		COMMUNICATION													
											Totals:	340	137	10,062	10,539

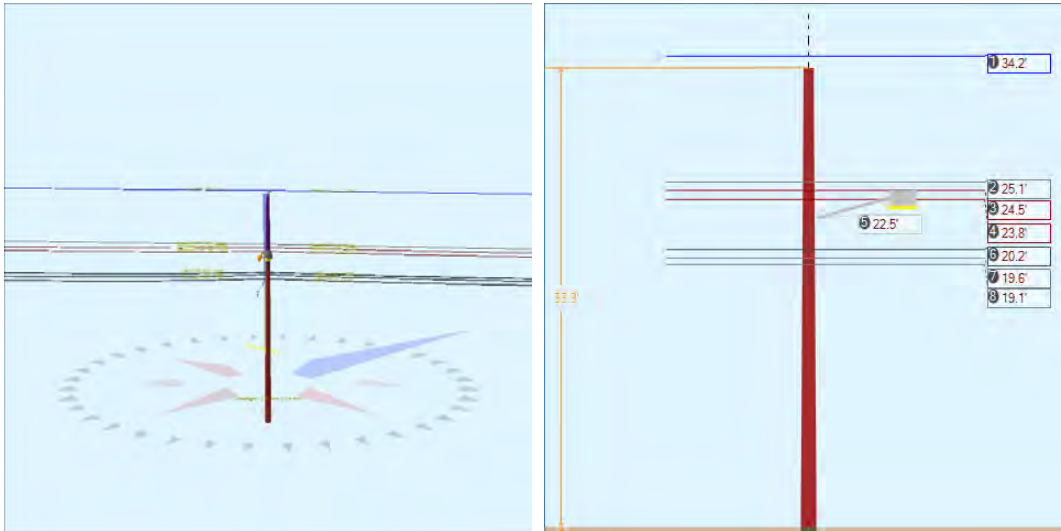
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.94	21.97	230.0	230.0	640.00	47.00	--	24.00	--	221	1,582	1,803
											Totals:	221	1,582	1,803

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.96	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.57	0.00	140.2	50.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.89	0.00	140.2	50.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.14	0.00	140.2	50.2	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.43	0.00	140.2	50.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.01	0.00	320.2	50.2	5.00	3.00	0.00	-6	0	-6

Bolt	Three Bolt	Unknown, COMMUNICATION	19.45	0.00	140.2	50.2	5.00	3.00	0.00	6	0	6
Totals:										12	192	204

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.64	33.45	10.57	16.03	7.32	11.46	1.60e+6	60.00	57.00	33.96	30,531	305.20	6.71

Pole Num:	136W - 25180-237	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.66	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.75	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.034076 Deg	Longitude:	-84.475487 Deg	Elevation:	935.61374176439		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.9	0.0
Groundline	24.9	0.0
Vertical	6.4	17.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,088	140.4
Groundline	20,088	140.4
GL Allowable	81,966	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	260	28.9	7,189	35.8	8.8	594	234	2	596	8.8
Comms	426	47.4	8,482	42.2	10.4	701	760	7	708	10.4
Pole	182	20.2	3,103	15.5	3.8	256	1,841	18	274	4.0
Streetlights	25	2.8	1,112	5.5	1.4	92	114	1	93	1.4
Insulators	6	0.7	202	1.0	0.3	17	65	1	17	0.3
Pole Load	899	100.0	20,088	100.0	24.5	1,659	3,013	30	1,689	24.8
Pole Reserve Capacity			61,878		75.5	5,141			5,111	75.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	291	32.3	8,498	42.3	10.4	702	384	4	706	10.4
Unknown, COMMUNICATION	426	47.4	8,487	42.3	10.4	701	789	8	709	10.4
Pole	182	20.2	3,103	15.5	3.8	256	1,841	18	274	4.0
Totals:	899	100.0	20,088	100.0	24.5	1,659	3,013	30	1,689	24.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.22	0.00	0.3250	0.07	0.107	64.7	51.0	64.7	1,684	586	0	533	1,118
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.22	0.00	0.3250	0.38	0.107	150.7	230.3	150.7	1,684	119	0	1,242	1,360
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.06	6.66	0.3250	0.07	0.107	64.7	51.0	64.7	1,684	429	10	390	828
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.06	6.66	0.3250	0.38	0.107	150.7	230.3	150.7	1,684	87	23	909	1,019
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.47	6.70	0.3250	0.54	0.107	64.7	51.0	64.7	450	112	10	381	502
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.47	6.70	0.3250	1.63	0.107	150.7	230.3	150.8	450	23	23	888	933
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.81	6.74	0.3250	0.54	0.107	64.7	51.0	64.7	450	109	10	370	489

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.81	6.74	0.3250	1.63	0.107	150.7	230.3	150.8	450	22	23	864	909
											Totals:	1,485	98	5,575	7,158

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.18	6.96	1.3300	0.82	64.7	51.0	64.7	925	190	30	696	915	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.18	6.96	1.3300	2.16	150.7	230.3	150.8	925	38	69	1,623	1,731	
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.00	1.5000	0.93	64.7	51.0	64.7	2,000	397	-52	738	1,083	
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.00	1.5000	2.54	150.7	230.3	150.8	2,000	81	-121	1,719	1,679	
Telco	TELE 1.5	Unknown, COMMUNICATION	19.08	7.03	1.5000	0.93	64.7	51.0	64.7	2,000	388	52	720	1,159	
Telco	TELE 1.5	Unknown, COMMUNICATION	19.08	7.03	1.5000	2.54	150.7	230.3	150.8	2,000	79	121	1,678	1,878	
											Totals:	1,172	99	7,174	8,445

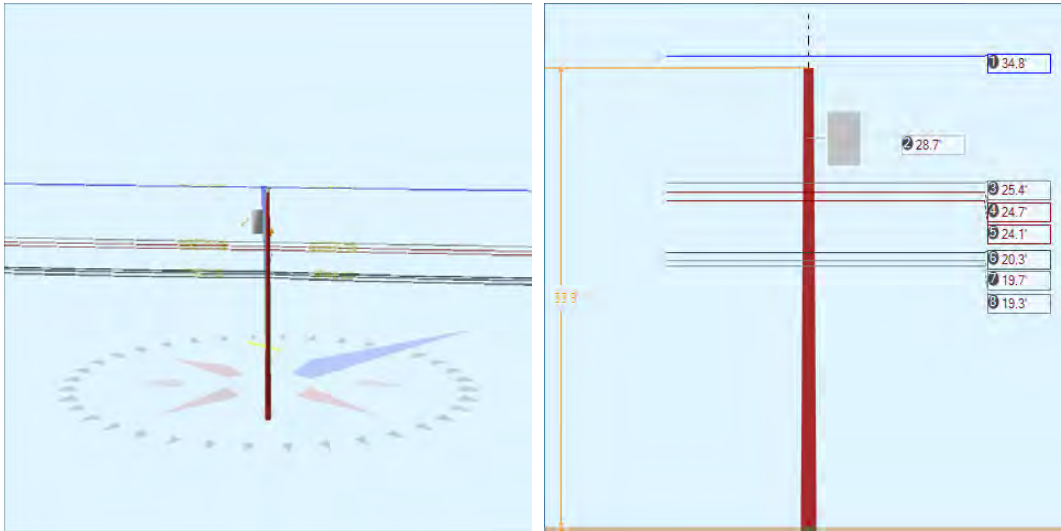
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	22.46	4.32	135.0	135.0	60.00	24.00	20.00	3.00	72.00	544	563	1,108
											Totals:	544	563	1,108

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.34	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	140.6	50.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.47	0.00	140.6	50.6	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.81	0.00	140.6	50.6	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.18	0.00	140.6	50.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.56	0.00	320.6	50.6	5.00	3.00	0.00	-6	0	-6

Bolt	Three Bolt	Unknown, COMMUNICATION	19.08	0.00	140.6	50.6	5.00	3.00	0.00	6	0	6
Totals:										12	189	201

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.68	32.84	10.67	12.14	7.32	11.38	1.60e+6	60.00	57.00	33.34	47,445	470.84	15.63

Pole Num:	137W - 25180-243	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.12	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.95	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.034174 Deg	Longitude:	-84.475308 Deg	Elevation:	923.469581411499		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.1	0.0
Groundline	22.1	0.0
Vertical	12.4	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,997	312.6
Groundline	17,997	312.6
GL Allowable	83,381	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 312.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	216	27.1	5,968	33.2	7.2	484	162	2	486	7.1
Comms	337	42.2	6,591	36.6	7.9	535	527	5	540	7.9
PowerEquipments	55	6.8	2,057	11.4	2.5	167	1,216	12	179	2.6
Pole	185	23.1	3,201	17.8	3.8	260	1,884	18	278	4.1
Insulators	6	0.7	180	1.0	0.2	15	65	1	15	0.2
Pole Load	798	100.0	17,997	100.0	21.6	1,461	3,854	37	1,498	22.0
Pole Reserve Capacity			65,384		78.4	5,340			5,302	78.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 312.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	277	34.7	8,211	45.6	9.9	666	1,414	14	680	10.0
Unknown, COMMUNICATION	337	42.2	6,585	36.6	7.9	534	556	5	540	7.9
Pole	185	23.1	3,201	17.8	3.8	260	1,884	18	278	4.1
Totals:	798	100.0	17,997	100.0	21.6	1,461	3,854	37	1,498	22.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.75	0.00	0.3250	0.12	0.107	84.7	50.0	84.7	1,684	-7,542	0	702	-6,840
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.75	0.00	0.3250	0.07	0.107	64.7	231.0	64.7	1,684	8,554	0	534	9,088
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.39	6.68	0.3250	0.12	0.107	84.7	50.0	84.7	1,684	-5,509	-13	513	-5,008
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.39	6.68	0.3250	0.07	0.107	64.7	231.0	64.7	1,684	6,248	-10	390	6,628
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.71	6.72	0.3250	0.76	0.107	84.7	50.0	84.7	450	-1,433	-13	499	-946
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.71	6.72	0.3250	0.54	0.107	64.7	231.0	64.7	450	1,625	-10	380	1,995
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.07	6.76	0.3250	0.76	0.107	84.7	50.0	84.7	450	-1,396	-13	486	-922

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.07	6.76	0.3250	0.54	0.107	64.7	231.0	64.7	450	1,583	-10	370	1,943
Totals:												2,131	-67	3,875	5,938

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.27	6.99	1.3300	1.10	0.337	84.7	50.0	84.7	925	-2,415	-38	908	-1,545
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.27	6.99	1.3300	0.82	0.337	64.7	231.0	64.7	925	2,739	-29	691	3,401
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.68	7.02	1.5000	1.26	0.900	84.7	50.0	84.7	2,000	-5,069	67	964	-4,038
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.68	7.02	1.5000	0.93	0.900	64.7	231.0	64.7	2,000	5,750	51	733	6,534
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.26	7.05	1.5000	1.26	0.900	84.7	50.0	84.7	2,000	-4,962	-68	943	-4,087
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.26	7.05	1.5000	0.93	0.900	64.7	231.0	64.7	2,000	5,628	-52	717	6,294
		COMMUNICATION													
Totals:												1,670	-68	4,956	6,558

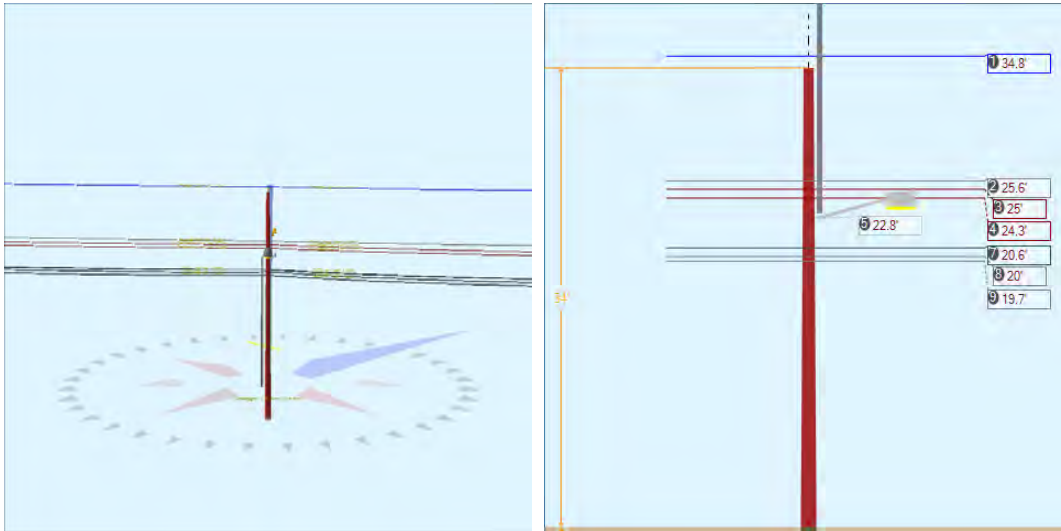
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.73	21.97	235.0	235.0	640.00	47.00	--	24.00	--	478	1,569	2,047
Totals:												478	1,569	2,047

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.88	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.39	0.00	140.5	230.5	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	140.5	230.5	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.07	0.00	140.5	230.5	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	20.27	0.00	140.5	230.5	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.68	0.00	320.5	230.5	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	19.26	0.00	140.5	230.5	5.00	3.00	0.00	-6	0	-6
Totals:										-12	191	180

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.45	33.42	10.57	14.77	7.32	11.45	1.60e+6	60.00	57.00	33.88	31,043	310.81	8.06

Pole Num:	138W - 25180-245	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.05	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.98	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.034334 Deg	Longitude:	-84.475103 Deg	Elevation:	911.475474552815		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.5	0.0
Groundline	23.5	0.0
Vertical	6.8	18.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,272	319.9
Groundline	19,272	319.9
GL Allowable	83,585	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 319.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	245	26.3	6,685	34.7	8.0	542	251	2	544	8.0
Comms	419	44.9	8,355	43.4	10.0	677	817	8	685	10.1
Pole	186	19.9	3,227	16.8	3.9	261	1,890	18	280	4.1
Streetlights	25	2.7	28	0.2	0.0	2	114	1	3	0.0
Risers	52	5.6	795	4.1	1.0	64	43	0	65	1.0
Insulators	6	0.6	182	0.9	0.2	15	65	1	15	0.2
Pole Load	934	100.0	19,272	100.0	23.1	1,561	3,180	31	1,592	23.4
Pole Reserve Capacity			64,313		76.9	5,239			5,208	76.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 319.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	328	35.2	7,695	39.9	9.2	623	444	4	628	9.2
Unknown, COMMUNICATION	419	44.9	8,349	43.3	10.0	676	846	8	685	10.1
Pole	186	19.9	3,227	16.8	3.9	261	1,890	18	280	4.1
Totals:	934	100.0	19,272	100.0	23.1	1,561	3,180	31	1,592	23.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.83	0.00	0.3250	0.36	0.107	146.7	49.7	146.7	1,684	237	0	1,230	1,467
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.83	0.00	0.3250	0.12	0.107	84.7	230.0	84.7	1,684	70	0	710	781
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.59	6.67	0.3250	0.36	0.107	146.7	49.7	146.7	1,684	174	-22	904	1,055
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.59	6.67	0.3250	0.12	0.107	84.7	230.0	84.7	1,684	52	-13	522	561
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.98	6.71	0.3250	1.57	0.107	146.7	49.7	146.7	450	45	-22	882	905
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.98	6.71	0.3250	0.76	0.107	84.7	230.0	84.7	450	13	-13	509	510
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.34	6.75	0.3250	1.57	0.107	146.7	49.7	146.7	450	44	-22	859	881

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.34	6.75	0.3250	0.76	0.107	84.7	230.0	84.7	450	13	-13	496	497
											Totals:	649	-105	6,113	6,656

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.64	6.97	1.3300	2.09	0.337	146.7	49.7	146.8	925	77	-67	1,616	1,626
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.64	6.97	1.3300	1.10	0.337	84.7	230.0	84.7	925	23	-39	933	918
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.02	7.01	1.5000	2.45	0.900	146.7	49.7	146.8	2,000	162	118	1,714	1,993
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.02	7.01	1.5000	1.26	0.900	84.7	230.0	84.7	2,000	48	68	990	1,106
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.03	1.5000	2.45	0.900	146.7	49.7	146.8	2,000	159	-118	1,684	1,725
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.03	1.5000	1.26	0.900	84.7	230.0	84.7	2,000	47	-68	972	951
		COMMUNICATION													
											Totals:	516	-106	7,909	8,319

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	22.83	4.34	135.0	135.0	60.00	24.00	20.00	3.00	72.00	-545	573	28
											Totals:	-545	573	28

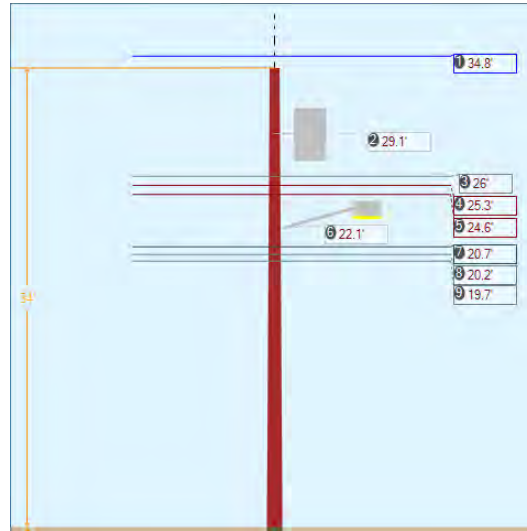
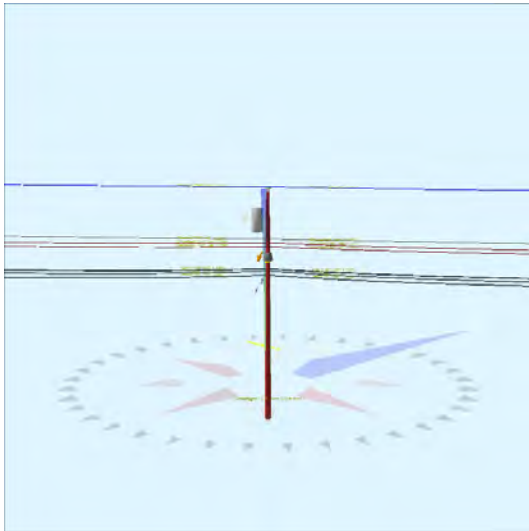
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 240.0°	Riser	KU, UTILITY	22.67	5.85	240.0	240.0	22.67	272.08	4.00	4.00	272.08	4	788	791
											Totals:	4	788	791

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.95	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.59	0.00	139.8	229.8	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.98	0.00	139.8	229.8	2.00	3.00	3.19	-2	12	9

Spool	Spool Insulator - 25 kV	KU, UTILITY	24.34	0.00	139.8	229.8	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	20.64	0.00	139.8	229.8	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.02	0.00	319.8	229.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.67	0.00	139.8	229.8	5.00	3.00	0.00	-6	0	-6
Totals:										-12	193	181

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.06	32.88	10.73	12.58	7.32	11.46	1.60e+6	60.00	57.00	33.95	46,500	467.67	14.71

Pole Num:	139W - 25180-255	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.03	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.99	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.034596 Deg	Longitude:	-84.474712 Deg	Elevation:	909.935466589009		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.5	0.0
Groundline	30.5	0.0
Vertical	15.5	21.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,946	145.1
Groundline	24,946	145.1
GL Allowable	83,634	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 145.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	290	27.1	8,204	32.9	9.8	665	320	3	668	9.8
Comms	508	47.5	10,424	41.8	12.5	845	1,042	10	855	12.6
PowerEquipments	55	5.1	1,796	7.2	2.2	146	1,216	12	157	2.3
Pole	186	17.4	3,220	12.9	3.9	261	1,892	18	279	4.1
Streetlights	25	2.3	1,096	4.4	1.3	89	114	1	90	1.3
Insulators	6	0.6	205	0.8	0.3	17	65	1	17	0.3
Pole Load	1,070	100.0	24,946	100.0	29.8	2,022	4,649	45	2,067	30.4
Pole Reserve Capacity			58,688		70.2	4,778			4,733	69.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 145.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	376	35.1	11,296	45.3	13.5	916	1,686	16	932	13.7
Unknown, COMMUNICATION	508	47.5	10,430	41.8	12.5	845	1,071	10	856	12.6
Pole	186	17.4	3,220	12.9	3.9	261	1,892	18	279	4.1
Totals:	1,070	100.0	24,946	100.0	29.8	2,022	4,649	45	2,067	30.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.85	0.00	0.3250	0.37	0.107	148.5	49.8	148.5	1,684	-5,426	0	1,240	-4,186
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.85	0.00	0.3250	0.36	0.107	146.7	229.7	146.7	1,684	5,528	0	1,225	6,753
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.96	6.65	0.3250	0.37	0.107	148.5	49.8	148.5	1,684	-4,041	22	923	-3,095
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.96	6.65	0.3250	0.36	0.107	146.7	229.7	146.7	1,684	4,117	22	912	5,051
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.28	6.69	0.3250	1.59	0.107	148.5	49.8	148.5	450	-1,051	22	899	-130
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.28	6.69	0.3250	1.57	0.107	146.7	229.7	146.7	450	1,071	22	888	1,982
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.61	6.73	0.3250	1.59	0.107	148.5	49.8	148.5	450	-1,024	22	875	-126

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.61	6.73	0.3250	1.57	0.107	146.7	229.7	146.7	450	1,043	22	865	1,930
Totals:												217	133	7,828	8,178

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.75	6.97	1.3300	2.12	0.337	148.5	49.8	148.5	925	-1,774	68	1,637	-69
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.75	6.97	1.3300	2.09	0.337	146.7	229.7	146.8	925	1,807	67	1,617	3,491
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.16	7.00	1.5000	2.49	0.900	148.5	49.8	148.5	2,000	-3,727	-118	1,739	-2,107
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.16	7.00	1.5000	2.45	0.900	146.7	229.7	146.8	2,000	3,798	-117	1,718	5,398
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.69	7.03	1.5000	2.49	0.900	148.5	49.8	148.5	2,000	-3,639	119	1,697	-1,823
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.69	7.03	1.5000	2.45	0.900	146.7	229.7	146.8	2,000	3,708	117	1,677	5,502
		COMMUNICATION													
Totals:												172	135	10,084	10,391

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.10	21.96	230.0	230.0	640.00	47.00	--	24.00	--	198	1,592	1,790
Totals:												198	1,592	1,790

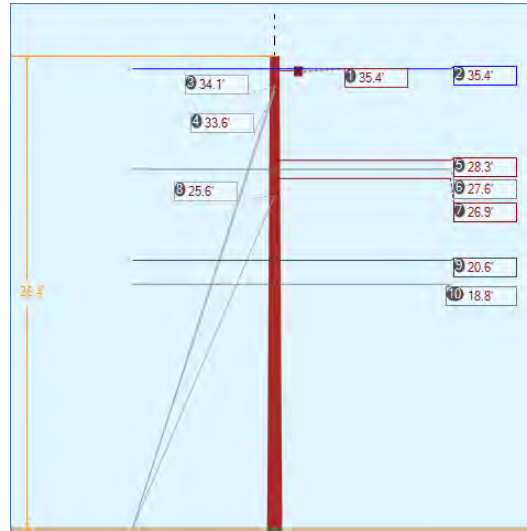
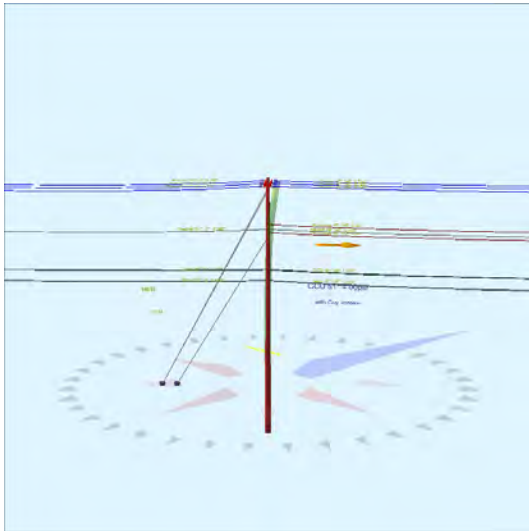
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 6 ft. Arm	KU, UTILITY	22.14	4.38	135.0	135.0	60.00	24.00	20.00	3.00	72.00	539	554	1,093
Totals:												539	554	1,093

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.97	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.96	0.00	139.7	49.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.28	0.00	139.7	49.7	2.00	3.00	3.19	2	12	14

Spool	Spool Insulator - 25 kV	KU, UTILITY	24.61	0.00	139.7	49.7	2.00	3.00	3.19	2	11	14
Bolt	Three Bolt	Unknown, COMMUNICATION	20.75	0.00	139.7	49.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.16	0.00	319.7	49.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.69	0.00	139.7	49.7	5.00	3.00	0.00	6	0	6
Totals:										12	193	205

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.78	33.47	10.57	16.25	7.32	11.46	1.60e+6	60.00	57.00	33.97	30,076	299.92	6.45

Pole Num:	223W - 24060-400	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.52	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032217 Deg	Longitude:	-84.470164 Deg	Elevation:	939.941012600545		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	49.3	33.7
Groundline	39.4	0.0
Vertical	28.9	31.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,183	50.2
Groundline	12,957	146.8
GL Allowable	87,427	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.5	227.9		67.5	51.2	67.5	35.0
? EHS 3/8 (Down)			34.1	62.0	51.2	68.3	40.0
? EHS 3/8 (Down)			33.6	59.7	51.2	65.7	30.0
? Single Helix Anchor	16.0	228.4		16.1	51.2	16.2	80.0
? EHS 3/8 (Down)			25.6	23.2	51.2	25.7	80.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 146.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-1,226	-305.7	-57,924	-447.1	-66.3	-3,251	656	6	-3,245	-47.7
Comms	170	42.5	4,966	38.3	5.7	279	481	5	283	4.2
GuyBraces	1,489	371.4	67,045	517.4	76.7	3,763	26,442	249	4,012	59.0
Pole	-20	-4.9	-498	-3.8	-0.6	-28	2,065	19	-8	-0.1
Crossarms	-10	-2.6	-512	-4.0	-0.6	-29	190	2	-27	-0.4
Insulators	-3	-0.7	-121	-0.9	-0.1	-7	99	1	-6	-0.1
Pole Load	401	100.0	12,957	100.0	14.8	727	29,933	282	1,009	14.8
Pole Reserve Capacity			74,470		85.2	6,073			5,791	85.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 146.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	261	65.0	8,985	69.3	10.3	504	27,179	256	760	11.2
Unknown, COMMUNICATION	170	42.5	4,981	38.5	5.7	280	500	5	284	4.2
Pole	-20	-4.9	-498	-3.8	-0.6	-28	2,065	19	-8	-0.1
<Undefined>	-10	-2.6	-512	-4.0	-0.6	-29	190	2	-27	-0.4
Totals:	401	100.0	12,957	100.0	14.8	727	29,933	282	1,009	14.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.38	18.22	0.7200	1.35	0.462	149.7	49.0	149.7	2,410	-15,121	-5	73	-15,052
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.38	48.79	0.7200	1.35	0.462	149.7	49.0	149.7	2,410	-15,121	29	73	-15,019
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.38	48.30	0.7200	1.35	0.462	149.7	49.0	149.7	2,410	-15,121	-33	73	-15,080
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.38	18.22	0.7200	0.09	0.462	72.9	226.6	73.0	350	2,862	3	73	2,938
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.38	48.79	0.7200	0.09	0.462	72.9	226.6	73.0	350	2,862	16	73	2,951

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.38	48.30	0.7200	0.09	0.462	72.9	226.6	73.0	350	2,862	-14	73	2,921
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.32	6.64	0.3980	1.79	0.145	149.7	49.0	149.7	450	-2,260	-4	43	-2,221
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.64	6.68	0.3980	1.79	0.145	149.7	49.0	149.7	450	-2,206	27	42	-2,136
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.64	6.68	0.3980	0.07	0.145	72.9	226.6	73.0	150	958	13	42	1,013
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.92	6.72	0.3980	1.79	0.145	149.7	49.0	149.7	450	-2,148	-4	41	-2,111
											Totals:	-42,432	29	608	-41,795

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.62	7.09	1.3300	2.11	0.337	149.7	49.0	149.7	925	-3,383	69	64	-3,250
CATV	CATV 1.0	Unknown, COMMUNICATION	20.62	7.09	1.3300	0.92	0.337	72.9	226.6	72.9	925	4,408	33	64	4,506
Telco	TELE 1.5	Unknown, COMMUNICATION	18.77	7.20	1.5000	2.50	0.900	149.7	49.0	149.7	2,000	-6,657	122	64	-6,471
Telco	TELE 1.5	Unknown, COMMUNICATION	18.77	7.20	1.5000	1.06	0.900	72.9	226.6	72.9	2,000	8,675	59	64	8,798
											Totals:	3,044	283	256	3,583

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	35.38	5.47	47.8	47.8	50.00	4.50	3.50	96.00	0	-369	-369		
											Totals:	0	-369	-369

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.38	0.00	47.8	1.2	3.00	3.80	12.75	-2	-16	-19
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.38	45.00	130.8	1.2	3.00	3.80	12.75	40	-16	24
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.38	-45.00	324.7	1.2	3.00	3.80	12.75	-45	-16	-61
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.38	0.00	227.8	178.8	3.00	3.80	12.75	3	-16	-13
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.38	45.00	144.7	178.8	3.00	3.80	12.75	45	-16	29
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.38	-45.00	310.8	178.8	3.00	3.80	12.75	-39	-16	-55

Spool	Spool Insulator - 25 kV	KU, UTILITY	28.32	0.00	49.0	49.0	2.00	3.00	3.19	0	-1	-2
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.64	0.00	137.8	47.8	2.00	3.00	3.19	2	-1	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.92	0.00	49.0	49.0	2.00	3.00	3.19	0	-1	-2
Bolt	Three Bolt	Unknown, COMMUNICATION	20.62	0.00	137.8	47.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.77	0.00	137.8	47.8	5.00	3.00	0.00	6	0	6
Totals:										14	-101	-87

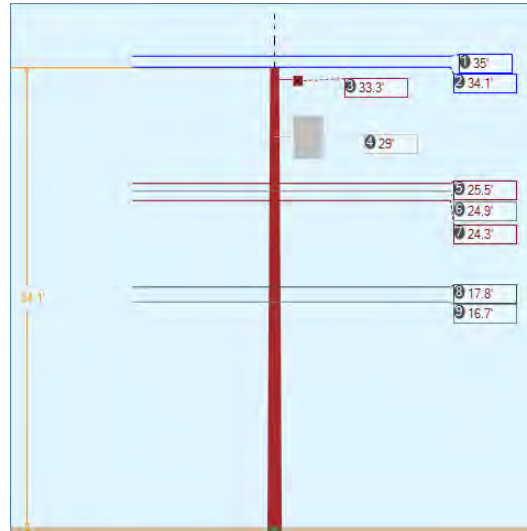
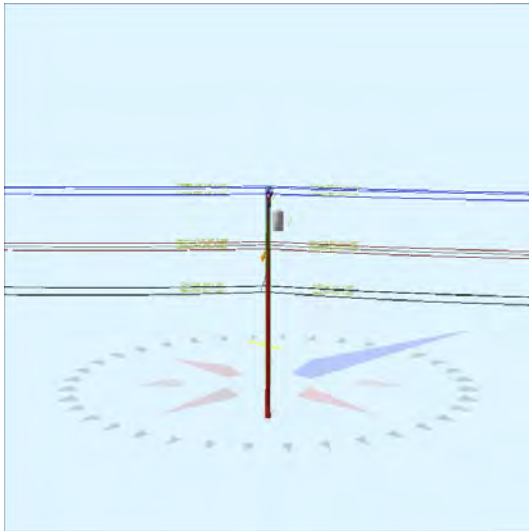
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	34.06	0.00	18.50	0.375	75.00	227.9	61.3	0.273	37.11	2.01
EHS 3/8	Down	KU, UTILITY	33.62	0.00	18.50	0.375	75.00	227.9	61.0	0.273	36.72	1.91
EHS 3/8	Down	KU, UTILITY	25.61	0.00	15.95	0.375	75.00	228.4	57.9	0.273	28.49	0.58

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,464	8,604	8,600	7,541	4,134	643	21,486
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,102	8,275	8,269	7,229	4,014	624	20,599
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,556	3,233	3,215	2,723	1,709	251	6,292
Totals:										17,494	9,857	1,518	48,376

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	18.50	227.9	25,000	1.00	25,000	16,879	16,869	67.5
Single Helix Anchor			18.00	15.95	228.4	20,000	1.00	20,000	3,233	3,215	16.2

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.67	34.84	10.32	28.81	7.32	11.63	1.60e+6	60.00	57.00	36.38	103,532	1035.75	3.46

Pole Num:	224W - 24060-404	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.91	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032495 Deg	Longitude:	-84.469793 Deg	Elevation:	928.516545640531		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	50.6	0.0
Groundline	50.6	0.0
Vertical	22.7	23.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,748	136.8
Groundline	33,748	136.8
GL Allowable	67,655	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 136.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	704	53.1	21,886	64.9	32.4	2,196	1,024	11	2,207	32.5
Comms	397	30.0	7,253	21.5	10.7	728	699	8	735	10.8
PowerEquipments	42	3.1	1,278	3.8	1.9	128	694	8	136	2.0
Pole	173	13.0	2,990	8.9	4.4	300	1,625	18	318	4.7
Crossarms	1	0.1	44	0.1	0.1	4	95	1	5	0.1
Insulators	9	0.6	297	0.9	0.4	30	78	1	31	0.5
Pole Load	1,325	100.0	33,748	100.0	49.9	3,386	4,214	47	3,433	50.5
Pole Reserve Capacity			33,907		50.1	3,414			3,367	49.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 136.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	754	56.9	23,450	69.5	34.7	2,353	1,777	20	2,372	34.9
Unknown, COMMUNICATION	397	30.0	7,264	21.5	10.7	729	718	8	737	10.8
Pole	173	13.0	2,990	8.9	4.4	300	1,625	18	318	4.7
<Undefined>	1	0.1	44	0.1	0.1	4	95	1	5	0.1
Totals:	1,325	100.0	33,748	100.0	49.9	3,386	4,214	47	3,433	50.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.97	0.00	0.7200	1.70	0.462	174.0	49.7	174.0	2,410	4,301	0	2,164	6,465
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.97	0.00	0.7200	1.39	0.462	149.7	229.0	149.7	2,410	-3,272	0	1,863	-1,409
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.14	45.29	0.7200	1.70	0.462	174.0	49.7	174.0	2,410	4,200	476	2,113	6,788
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.14	45.29	0.7200	1.39	0.462	149.7	229.0	149.7	2,410	-3,195	409	1,819	-967
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.14	45.29	0.7200	1.70	0.462	174.0	49.7	174.0	2,410	4,200	-470	2,113	5,842
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.14	45.29	0.7200	1.39	0.462	149.7	229.0	149.7	2,410	-3,195	-404	1,819	-1,780

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.51	6.34	0.3980	2.28	0.145	174.0	49.7	174.1	450	585	30	1,161	1,776
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.51	6.34	0.3980	1.86	0.145	149.7	229.0	149.7	450	-445	26	999	580
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.93	6.38	0.3980	2.28	0.145	174.0	49.7	174.1	450	572	30	1,135	1,737
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.93	6.38	0.3980	1.86	0.145	149.7	229.0	149.7	450	-435	26	977	568
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.25	6.42	0.3980	2.28	0.145	174.0	49.7	174.1	450	557	31	1,104	1,691
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.25	6.42	0.3980	1.86	0.145	149.7	229.0	149.7	450	-423	26	950	553
Totals:											3,450	180	18,214	21,844	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.83	6.79	1.3300	2.60	0.337	174.0	49.7	174.1	925	841	77	1,654	2,573
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.83	6.79	1.3300	2.14	0.337	149.7	229.0	149.7	925	-640	67	1,424	850
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.73	6.86	1.5000	3.07	0.900	174.0	49.7	174.1	2,000	1,706	136	1,695	3,538
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.73	6.86	1.5000	2.52	0.900	149.7	229.0	149.7	2,000	-1,298	117	1,459	279
		COMMUNICATION													
Totals:											610	398	6,232	7,239	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	28.99	20.64	50.0	50.0	365.00	39.00	--	22.00	--	67	1,208	1,275
Totals:											67	1,208	1,275	

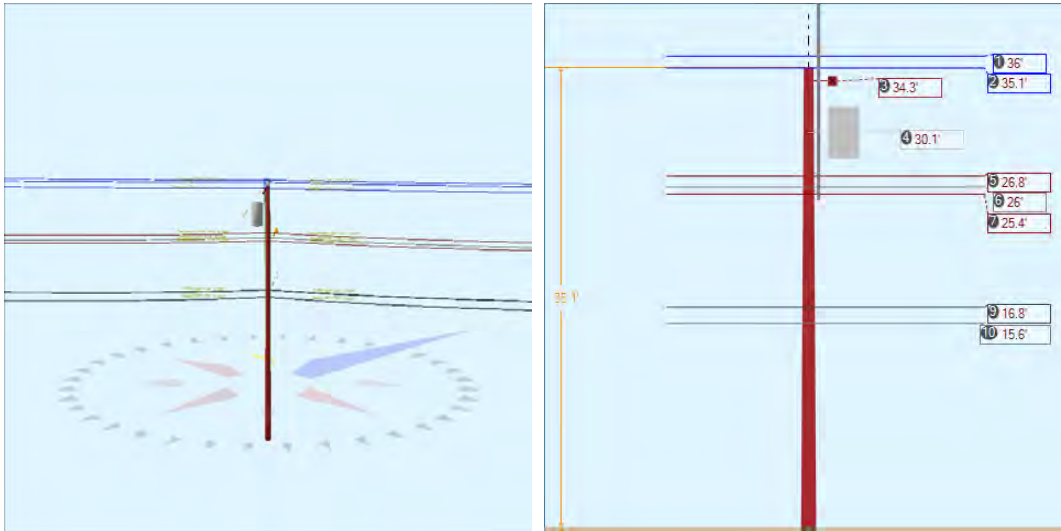
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.33	5.14	49.7	49.7	50.00	4.50	3.50	96.00	2	42	44	
Totals:											2	42	44

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.09	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159

Pin	Pin Insulator - 5 kV	KU, UTILITY	33.51	45.00	133.2	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.51	-45.00	326.3	0.0	6.00	3.50	7.50	-42	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.51	0.00	139.4	49.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.93	0.00	139.4	49.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.25	0.00	139.4	49.4	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	17.83	0.00	139.4	49.4	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.73	0.00	139.4	49.4	5.00	3.00	0.00	5	0	5
Totals:										17	279	296

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	23.54	33.87	9.74	16.00	6.69	10.68	1.60e+6	60.00	57.00	34.09	18,576	185.65	4.41

Pole Num:	225W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.89	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.05	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.032821 Deg	Longitude:	-84.469327 Deg	Elevation:	931.348018771312		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.3	0.0
Groundline	45.3	0.0
Vertical	22.6	24.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,493	316.0
Groundline	37,493	316.0
GL Allowable	84,083	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 316.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	756	52.2	24,381	65.0	29.0	1,968	1,115	11	1,978	29.1
Comms	408	28.2	7,066	18.9	8.4	570	761	7	578	8.5
PowerEquipments	55	3.8	1,802	4.8	2.1	145	1,216	12	157	2.3
Pole	192	13.2	3,432	9.2	4.1	277	1,960	19	296	4.4
Crossarms	1	0.1	43	0.1	0.1	3	95	1	4	0.1
Risers	29	2.0	463	1.2	0.6	37	96	1	38	0.6
Insulators	9	0.6	306	0.8	0.4	25	78	1	25	0.4
Pole Load	1,449	100.0	37,493	100.0	44.6	3,026	5,320	51	3,077	45.3
Pole Reserve Capacity			46,590		55.4	3,774			3,723	54.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 316.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	848	58.5	26,940	71.9	32.0	2,174	2,486	24	2,198	32.3
Unknown, COMMUNICATION	408	28.2	7,078	18.9	8.4	571	780	8	579	8.5
Pole	192	13.2	3,432	9.2	4.1	277	1,960	19	296	4.4
<Undefined>	1	0.1	43	0.1	0.1	3	95	1	4	0.1
Totals:	1,449	100.0	37,493	100.0	44.6	3,026	5,320	51	3,077	45.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.98	0.00	0.7200	0.57	0.462	178.4	49.4	178.4	6,210	-13,090	0	2,281	-10,809
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.98	0.00	0.7200	0.55	0.462	174.0	229.7	174.0	6,210	14,259	0	2,225	16,483
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.07	45.33	0.7200	0.57	0.462	178.4	49.4	178.4	6,210	-12,756	488	2,223	-10,046
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.07	45.33	0.7200	0.55	0.462	174.0	229.7	174.0	6,210	13,895	476	2,168	16,539
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.07	45.33	0.7200	0.57	0.462	178.4	49.4	178.4	6,210	-12,756	-481	2,223	-11,014

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.07	45.33	0.7200	0.55	0.462	174.0	229.7	174.0	6,210	13,895	-469	2,168	15,594
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.82	6.65	0.3980	2.36	0.145	178.4	49.4	178.4	450	-706	32	1,250	576
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.82	6.65	0.3980	2.28	0.145	174.0	229.7	174.1	450	770	32	1,220	2,021
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.99	6.70	0.3980	2.36	0.145	178.4	49.4	178.4	450	-684	33	1,211	560
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.99	6.70	0.3980	2.28	0.145	174.0	229.7	174.1	450	746	32	1,182	1,959
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.44	6.73	0.3980	2.36	0.145	178.4	49.4	178.4	450	-670	33	1,186	549
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.44	6.73	0.3980	2.28	0.145	174.0	229.7	174.1	450	730	32	1,157	1,919
Totals:											3,631	208	20,491	24,330	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.81	7.24	1.3300	2.68	0.337	178.4	49.4	178.4	925	-910	85	1,597	771
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.81	7.24	1.3300	2.60	0.337	174.0	229.7	174.1	925	991	82	1,558	2,631
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.56	7.32	1.5000	3.18	0.900	178.4	49.4	178.4	2,000	-1,822	149	1,616	-57
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.56	7.32	1.5000	3.07	0.900	174.0	229.7	174.1	2,000	1,985	145	1,576	3,706
		COMMUNICATION													
Totals:											244	461	6,346	7,052	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.12	21.96	230.0	230.0	640.00	47.00	--	24.00	--	153	1,645	1,798
Totals:											153	1,645	1,798	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.25	5.46	229.6	229.6	50.00	4.50	3.50	96.00	3	40	42
Totals:											3	40	42

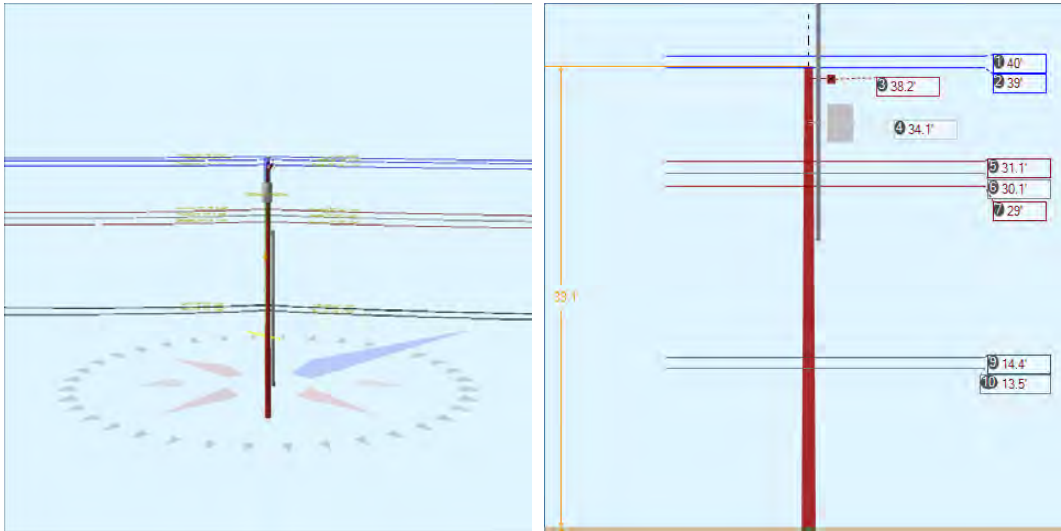
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 130.0°	Riser	KU, UTILITY	25.22	6.09	130.0	130.0	25.22	302.59	2.50	2.50	302.59	-12	120	108
Riser 105.0°	Riser	KU, UTILITY	25.22	6.09	105.0	105.0	25.22	302.59	2.50	2.50	302.59	-10	364	354
Totals:												-22	484	462

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.11	0.00	0.0	0.0	13.00	9.00	10.50	0	163	163
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.44	45.00	312.7	0.0	6.00	3.50	7.50	43	44	87
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.44	-45.00	146.5	0.0	6.00	3.50	7.50	-42	44	2
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.82	0.00	319.6	229.6	2.00	3.00	3.19	2	12	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.99	0.00	319.6	229.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.44	0.00	319.6	229.6	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	16.81	0.00	319.6	229.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.56	0.00	319.6	229.6	5.00	3.00	0.00	6	0	6
Totals:										18	287	305

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.32	33.76	10.50	18.25	7.32	11.48	1.60e+6	60.00	57.00	35.11	23,536	235.40	4.42

Pole Num:	226W - 24060-416	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.86	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.55	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033168 Deg	Longitude:	-84.468875 Deg	Elevation:	935.170305110525		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.4	0.0
Groundline	41.4	0.0
Vertical	18.5	25.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	38,693	138.7
Groundline	38,693	138.7
GL Allowable	95,000	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 138.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	665	47.4	24,088	62.3	25.4	1,721	906	8	1,729	25.4
Comms	366	26.1	5,490	14.2	5.8	392	618	6	398	5.9
PowerEquipments	42	3.0	2,637	6.8	2.8	189	694	6	195	2.9
Pole	220	15.7	4,299	11.1	4.5	307	2,303	21	328	4.8
Crossarms	1	0.1	49	0.1	0.1	4	95	1	4	0.1
Risers	100	7.1	1,789	4.6	1.9	128	104	1	129	1.9
Insulators	9	0.6	341	0.9	0.4	24	78	1	25	0.4
Pole Load	1,402	100.0	38,693	100.0	40.7	2,765	4,798	43	2,808	41.3
Pole Reserve Capacity			56,307		59.3	4,035			3,992	58.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 138.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	815	58.2	28,843	74.5	30.4	2,061	1,762	16	2,077	30.5
Unknown, COMMUNICATION	366	26.1	5,502	14.2	5.8	393	637	6	399	5.9
Pole	220	15.7	4,299	11.1	4.5	307	2,303	21	328	4.8
<Undefined>	1	0.1	49	0.1	0.1	4	95	1	4	0.1
Totals:	1,402	100.0	38,693	100.0	40.7	2,765	4,798	43	2,808	41.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.01	0.00	0.7200	0.90	0.462	108.1	50.3	108.1	2,410	2,701	0	1,537	4,238
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.01	0.00	0.7200	1.76	0.462	178.4	229.4	178.4	2,410	-1,186	0	2,539	1,354
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.02	45.33	0.7200	0.90	0.462	108.1	50.3	108.1	2,410	2,634	295	1,499	4,428
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.02	45.33	0.7200	1.76	0.462	178.4	229.4	178.4	2,410	-1,156	486	2,477	1,807
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.02	45.33	0.7200	0.90	0.462	108.1	50.3	108.1	2,410	2,634	-293	1,499	3,840

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.02	45.33	0.7200	1.76	0.462	178.4	229.4	178.4	2,410	-1,156	-484	2,477	836
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.06	6.64	0.3980	1.22	0.145	108.1	50.3	108.1	450	391	20	877	1,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.06	6.64	0.3980	2.36	0.145	178.4	229.4	178.4	450	-172	32	1,450	1,311
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.07	6.70	0.3980	1.22	0.145	108.1	50.3	108.1	450	379	20	849	1,248
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.07	6.70	0.3980	2.36	0.145	178.4	229.4	178.4	450	-166	33	1,403	1,270
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.97	6.76	0.3980	1.22	0.145	108.1	50.3	108.1	450	365	20	818	1,203
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.97	6.76	0.3980	2.36	0.145	178.4	229.4	178.4	450	-160	33	1,352	1,225
											Totals:	5,108	162	18,778	24,048

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	14.42	7.62	1.3300	1.45	0.337	108.1	50.3	108.1	925	373	54	830	1,257
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	14.42	7.62	1.3300	2.68	0.337	178.4	229.4	178.4	925	-164	89	1,371	1,297
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	13.50	7.68	1.5000	1.68	0.900	108.1	50.3	108.1	2,000	755	95	849	1,699
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	13.50	7.68	1.5000	3.18	0.900	178.4	229.4	178.4	2,000	-332	157	1,403	1,228
		COMMUNICATION													
											Totals:	633	395	4,453	5,481

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	34.11	20.96	140.0	140.0	365.00	39.00	--	22.00	--	1,211	1,422	2,633
											Totals:	1,211	1,422	2,633

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm		38.21	5.47	49.9	49.9	50.00	4.50	3.50	96.00	1	48	49	
											Totals:	1	48	49

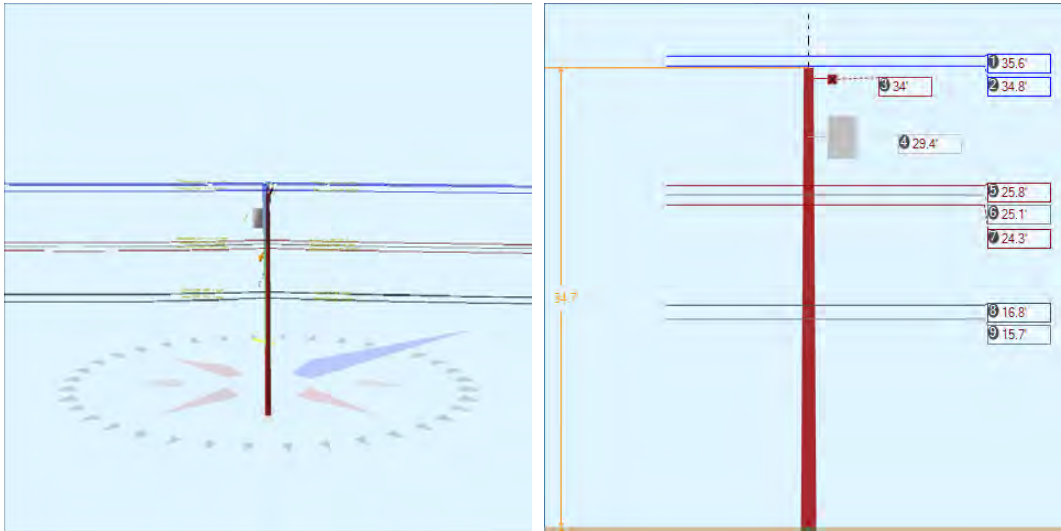
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 20.0°	Riser	KU, UTILITY	27.28	6.09	20.0	20.0	27.28	327.36	4.00	4.00	327.36	-13	1,031	1,018
Riser 360.0°	Riser	KU, UTILITY	27.28	6.09	360.0	360.0	27.28	327.36	4.00	4.00	327.36	-20	789	768
Totals:												-34	1,819	1,786

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.14	0.00	0.0	0.0	13.00	9.00	10.50	0	182	182
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.40	45.00	132.9	0.0	6.00	3.50	7.50	43	49	92
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.40	-45.00	326.8	0.0	6.00	3.50	7.50	-43	49	7
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.06	0.00	139.9	49.9	2.00	3.00	3.19	2	14	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.07	0.00	139.9	49.9	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.97	0.00	139.9	49.9	2.00	3.00	3.19	2	13	16
Bolt	Three Bolt	Unknown, COMMUNICATION	14.42	0.00	139.9	49.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	13.50	0.00	139.9	49.9	5.00	3.00	0.00	6	0	6
Totals:										19	322	341

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.15	33.73	10.95	17.78	7.32	11.96	1.60e+6	60.00	57.00	39.14	25,997	259.36	5.41

Pole Num:	228W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.32	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.26	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033489 Deg	Longitude:	-84.468412 Deg	Elevation:	929.497856207139		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.7	0.0
Groundline	29.7	0.0
Vertical	14.6	22.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,905	142.1
Groundline	24,905	142.1
GL Allowable	85,527	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 142.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	480	48.0	15,097	60.6	17.7	1,197	744	7	1,204	17.7
Comms	278	27.8	4,820	19.4	5.6	382	507	5	387	5.7
PowerEquipments	42	4.2	1,274	5.1	1.5	101	694	7	108	1.6
Pole	191	19.1	3,372	13.5	3.9	267	1,950	19	286	4.2
Crossarms	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	302	1.2	0.4	24	78	1	25	0.4
Pole Load	1,000	100.0	24,905	100.0	29.1	1,974	4,067	39	2,013	29.6
Pole Reserve Capacity			60,622		70.9	4,826			4,787	70.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 142.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	530	53.0	16,661	66.9	19.5	1,321	1,496	14	1,335	19.6
Unknown, COMMUNICATION	278	27.8	4,832	19.4	5.7	383	526	5	388	5.7
Pole	191	19.1	3,372	13.5	3.9	267	1,950	19	286	4.2
<Undefined>	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Totals:	1,000	100.0	24,905	100.0	29.1	1,974	4,067	39	2,013	29.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.55	0.00	0.7200	0.42	0.462	59.9	49.9	59.9	2,410	-3,247	0	758	-2,489
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.55	0.00	0.7200	1.72	0.462	175.2	229.6	175.2	2,410	3,695	0	2,216	5,911
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.80	45.33	0.7200	0.42	0.462	59.9	49.9	59.9	2,410	-3,179	162	742	-2,275
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.80	45.33	0.7200	1.72	0.462	175.2	229.6	175.2	2,410	3,618	474	2,170	6,261
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.80	45.33	0.7200	0.42	0.462	59.9	49.9	59.9	2,410	-3,179	-164	742	-2,600
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.80	45.33	0.7200	1.72	0.462	175.2	229.6	175.2	2,410	3,618	-479	2,170	5,309

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.77	6.70	0.3980	0.59	0.145	59.9	49.9	59.9	450	-439	11	404	-24
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.77	6.70	0.3980	2.30	0.145	175.2	229.6	175.2	450	500	32	1,181	1,713
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.09	6.74	0.3980	0.59	0.145	59.9	49.9	59.9	450	-428	11	393	-23
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.09	6.74	0.3980	2.30	0.145	175.2	229.6	175.2	450	487	32	1,150	1,669
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.31	6.79	0.3980	0.59	0.145	59.9	49.9	59.9	450	-414	11	381	-22
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.31	6.79	0.3980	2.30	0.145	175.2	229.6	175.2	450	471	33	1,115	1,619
Totals:											1,504	124	13,421	15,049	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 16.76	7.25	1.3300	0.75	0.337	59.9	49.9	59.9	925	-587	28	536	-23
CATV	CATV 1.0	Unknown, 16.76	7.25	1.3300	2.62	0.337	175.2	229.6	175.2	925	668	83	1,566	2,318
Telco	TELE 1.5	Unknown, 15.69	7.32	1.5000	0.86	0.900	59.9	49.9	59.9	2,000	-1,188	50	548	-590
Telco	TELE 1.5	Unknown, 15.69	7.32	1.5000	3.10	0.900	175.2	229.6	175.3	2,000	1,352	146	1,602	3,101
Totals:											245	308	4,252	4,805

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.41	20.98	230.0	230.0	365.00	39.00	--	22.00	--	44	1,226	1,270
Totals:											44	1,226	1,270	

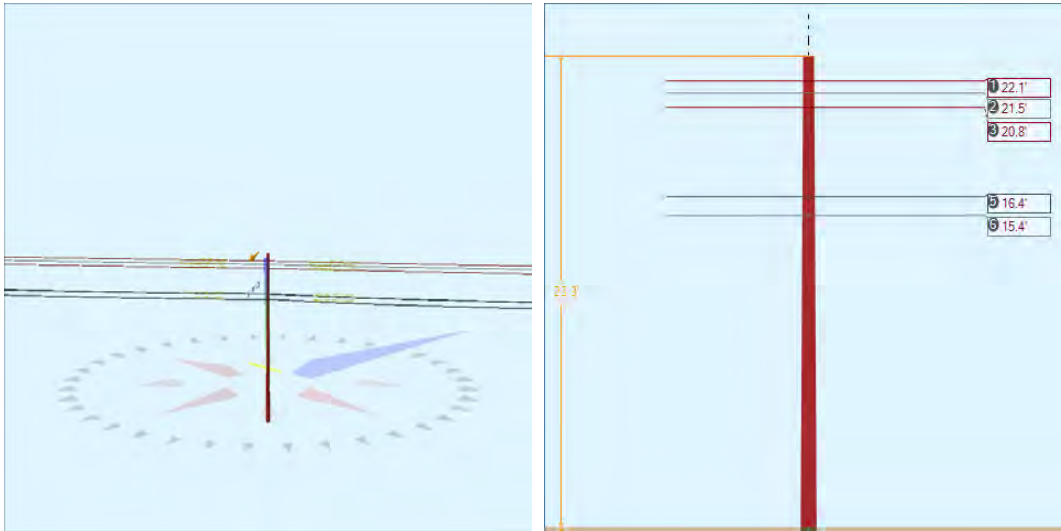
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.99	5.45	49.7	49.7	50.00	4.50	3.50	96.00	-2	42	40	
Totals:											-2	42	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.68	0.00	0.0	0.0	13.00	9.00	10.50	0	161	161

Pin	Pin Insulator - 5 kV	KU, UTILITY	34.18	45.00	132.8	0.0	6.00	3.50	7.50	43	44	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.18	-45.00	326.6	0.0	6.00	3.50	7.50	-43	44	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.77	0.00	139.7	49.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.09	0.00	139.7	49.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.31	0.00	139.7	49.7	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	16.76	0.00	139.7	49.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.69	0.00	139.7	49.7	5.00	3.00	0.00	6	0	6
Totals:										18	284	301

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.79	33.61	10.61	15.59	7.32	11.55	1.60e+6	60.00	57.00	34.68	27,896	278.59	6.85

Pole Num:	229W - 24050-426	Pole Length / Class:	30 / 6	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.67	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	24.78	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033603 Deg	Longitude:	-84.468251 Deg	Elevation:	942.505092365702		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.3	0.0
Groundline	31.3	0.0
Vertical	7.6	14.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,448	140.9
Groundline	8,448	140.9
GL Allowable	27,294	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	171	35.7	3,723	44.1	13.6	931	173	4	934	13.7
Comms	210	44.1	3,499	41.4	12.8	875	378	8	883	13.0
Pole	90	18.9	1,135	13.4	4.2	284	649	13	297	4.4
Risers	5	1.0	47	0.6	0.2	12	39	1	13	0.2
Insulators	1	0.3	44	0.5	0.2	11	30	1	12	0.2
Pole Load	477	100.0	8,448	100.0	31.0	2,112	1,270	26	2,138	31.4
Pole Reserve Capacity			18,846		69.0	4,688			4,662	68.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	177	37.0	3,805	45.0	13.9	951	224	5	956	14.1
Unknown, COMMUNICATION	210	44.1	3,508	41.5	12.9	877	397	8	885	13.0
Pole	90	18.9	1,135	13.4	4.2	284	649	13	297	4.4
Totals:	477	100.0	8,448	100.0	31.0	2,112	1,270	26	2,138	31.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.10	5.27	0.3980	0.25	0.145	115.4	50.2	115.4	2,128	-558	17	665	123
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.10	5.27	0.3980	0.07	0.145	59.9	229.9	59.9	2,128	804	9	345	1,158
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.50	5.30	0.3980	0.25	0.145	115.4	50.2	115.4	2,128	-543	17	647	120
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.50	5.30	0.3980	0.07	0.145	59.9	229.9	59.9	2,128	782	9	335	1,126
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	20.79	5.34	0.3980	0.25	0.145	115.4	50.2	115.4	2,128	-525	17	625	117
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	20.79	5.34	0.3980	0.07	0.145	59.9	229.9	59.9	2,128	757	9	324	1,090
Totals:											717	77	2,941	3,735	

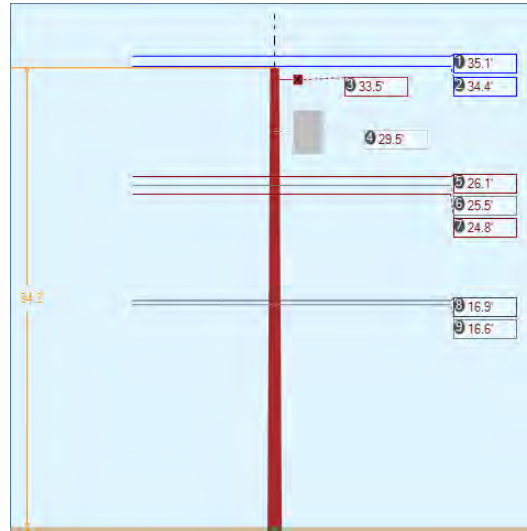
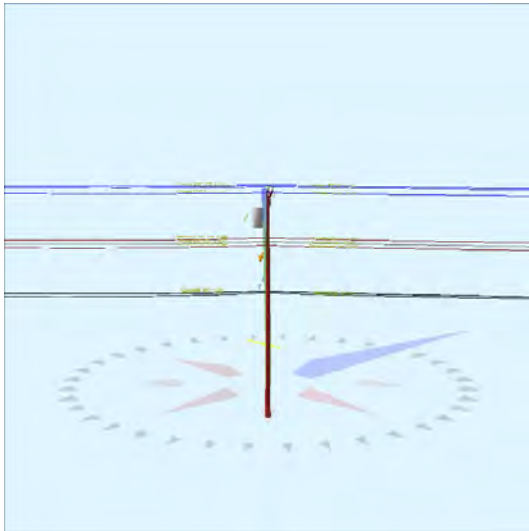
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.37	5.58	1.3300	1.56	0.337	115.4	50.2	115.4	925	-180	42	1,003	866
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.37	5.58	1.3300	0.75	0.337	59.9	229.9	59.9	925	259	22	520	801
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.43	5.62	1.5000	1.82	0.900	115.4	50.2	115.4	2,000	-366	74	1,034	742
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.43	5.62	1.5000	0.86	0.900	59.9	229.9	59.9	2,000	528	39	536	1,103
		COMMUNICATION													
Totals:											241	177	3,094	3,511	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 320.0°	Riser	KU, UTILITY	20.59	4.08	320.0	320.0	20.59	247.09	4.00	4.00	247.09	-17	64	47
Totals:											-17	64	47	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.10	0.00	140.0	50.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.50	0.00	140.0	50.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	20.79	0.00	140.0	50.0	2.00	3.00	3.19	2	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	16.37	0.00	140.0	50.0	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	15.43	0.00	140.0	50.0	5.00	3.00	0.00	4	0	4
Totals:										14	30	44

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	14.29	32.88	7.39	7.00	5.41	7.89	1.60e+6	60.00	57.00	23.33	16,687	167.07	13.16

Pole Num:	230W - 24060-428	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.59	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033817 Deg	Longitude:	-84.467943 Deg	Elevation:	948.114740346594		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.2	0.0
Groundline	38.2	0.0
Vertical	19.6	23.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,566	142.0
Groundline	25,566	142.0
GL Allowable	67,991	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 142.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	504	49.6	15,804	61.8	23.2	1,576	759	8	1,585	23.3
Comms	288	28.3	5,129	20.1	7.5	512	518	6	517	7.6
PowerEquipments	42	4.1	1,274	5.0	1.9	127	694	8	135	2.0
Pole	173	17.1	3,021	11.8	4.4	301	1,636	18	320	4.7
Crossarms	1	0.1	40	0.2	0.1	4	95	1	5	0.1
Insulators	9	0.8	298	1.2	0.4	30	78	1	31	0.5
Pole Load	1,017	100.0	25,566	100.0	37.6	2,550	3,778	42	2,592	38.1
Pole Reserve Capacity			42,425		62.4	4,250			4,208	61.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 142.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	554	54.5	17,365	67.9	25.5	1,732	1,511	17	1,749	25.7
Unknown, COMMUNICATION	288	28.3	5,140	20.1	7.6	513	537	6	519	7.6
Pole	173	17.1	3,021	11.8	4.4	301	1,636	18	320	4.7
<Undefined>	1	0.1	40	0.2	0.1	4	95	1	5	0.1
Totals:	1,017	100.0	25,566	100.0	37.6	2,550	3,778	42	2,592	38.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.12	0.00	0.7200	0.46	0.462	64.6	50.0	64.6	2,410	-2,963	0	807	-2,156
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.12	0.00	0.7200	1.72	0.462	175.2	229.6	175.2	2,410	3,554	0	2,189	5,743
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.35	45.29	0.7200	0.46	0.462	64.6	50.0	64.6	2,410	-2,898	175	790	-1,934
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.35	45.29	0.7200	1.72	0.462	175.2	229.6	175.2	2,410	3,476	474	2,141	6,092
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.35	45.29	0.7200	0.46	0.462	64.6	50.0	64.6	2,410	-2,898	-176	790	-2,285
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.35	45.29	0.7200	1.72	0.462	175.2	229.6	175.2	2,410	3,476	-478	2,141	5,139

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.13	6.32	0.3980	0.65	0.145	64.6	50.0	64.6	450	-411	11	442	42
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.13	6.32	0.3980	2.30	0.145	175.2	229.6	175.2	450	493	30	1,198	1,722
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.48	6.35	0.3980	0.65	0.145	64.6	50.0	64.6	450	-401	11	431	41
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.48	6.35	0.3980	2.30	0.145	175.2	229.6	175.2	450	481	31	1,168	1,680
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.82	6.39	0.3980	0.65	0.145	64.6	50.0	64.6	450	-391	11	420	40
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.82	6.39	0.3980	2.30	0.145	175.2	229.6	175.2	450	469	31	1,138	1,637
											Totals:	1,987	120	13,654	15,761

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.89	6.86	1.3300	0.82	0.337	64.6	50.0	64.6	925	-547	29	582	64
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.89	6.86	1.3300	2.62	0.337	175.2	229.6	175.2	925	656	79	1,578	2,312
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.59	6.87	1.5000	0.93	0.900	64.6	50.0	64.6	2,000	-1,161	51	625	-485
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.59	6.87	1.5000	3.10	0.900	175.2	229.6	175.3	2,000	1,392	138	1,694	3,224
		COMMUNICATION													
											Totals:	341	296	4,479	5,116

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.47	20.62	230.0	230.0	365.00	39.00	--	22.00	--	42	1,229	1,270
											Totals:	42	1,229	1,270

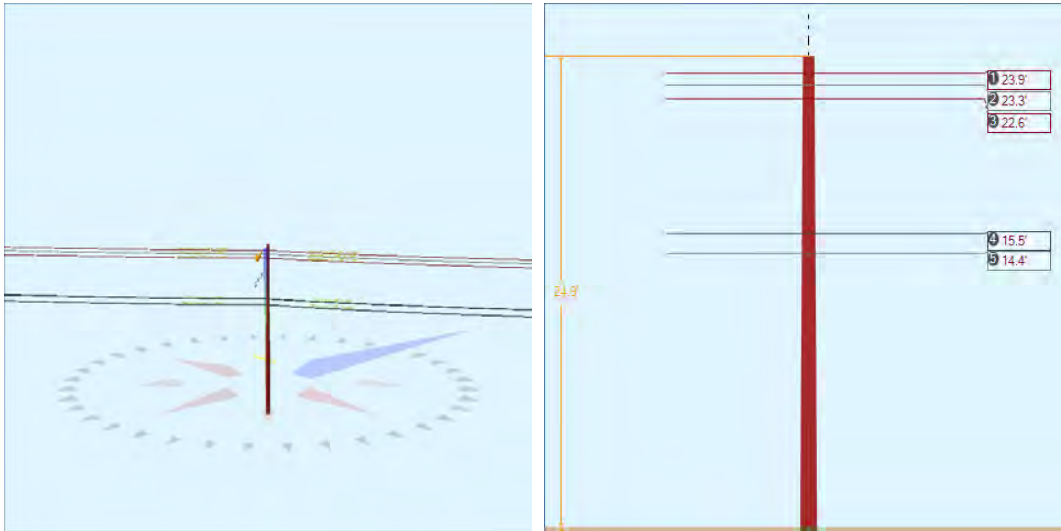
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	33.54	5.13	49.8	49.8	50.00	4.50	3.50	96.00	-2	41	40		
											Totals:	-2	41	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.24	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159

Pin	Pin Insulator - 5 kV	KU, UTILITY	33.73	45.00	133.3	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.73	-45.00	326.3	0.0	6.00	3.50	7.50	-43	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.13	0.00	139.8	49.8	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.48	0.00	139.8	49.8	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.82	0.00	139.8	49.8	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	16.89	0.00	139.8	49.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.59	0.00	139.8	49.8	5.00	3.00	0.00	5	0	5
Totals:										17	281	298

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	23.28	33.82	9.77	15.12	6.69	10.70	1.60e+6	60.00	57.00	34.24	19,232	192.76	5.10

Pole Num:	231W - NT	Pole Length / Class:	30 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.15	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	27.80	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.033941 Deg	Longitude:	-84.467755 Deg	Elevation:	941.569723805915		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.4	0.0
Groundline	30.4	0.0
Vertical	5.4	14.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	11,590	141.6
Groundline	11,590	141.6
GL Allowable	38,556	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 141.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	206	31.4	4,871	42.0	12.6	861	179	3	864	12.7
Comms	341	51.9	5,249	45.3	13.6	928	392	6	934	13.7
Pole	108	16.5	1,423	12.3	3.7	252	867	14	266	3.9
Insulators	1	0.2	47	0.4	0.1	8	30	0	9	0.1
Pole Load	656	100.0	11,590	100.0	30.1	2,050	1,469	24	2,073	30.5
Pole Reserve Capacity			26,966		69.9	4,751			4,727	69.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 141.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	208	31.6	4,909	42.4	12.7	868	191	3	871	12.8
Unknown, COMMUNICATION	341	51.9	5,258	45.4	13.6	930	411	7	936	13.8
Pole	108	16.5	1,423	12.3	3.7	252	867	14	266	3.9
Totals:	656	100.0	11,590	100.0	30.1	2,050	1,469	24	2,073	30.5

Detailed Load Components:

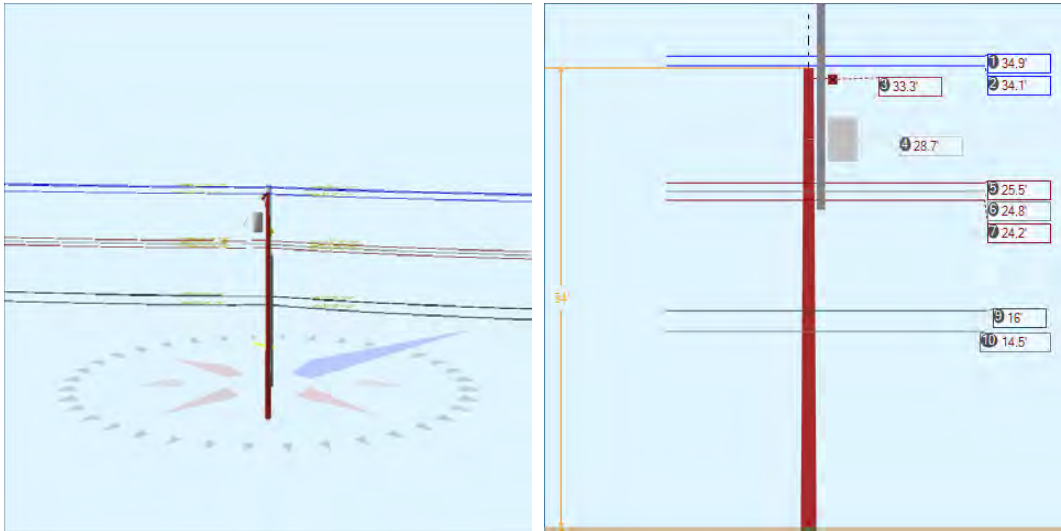
Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.94	5.58	0.3980	1.34	0.145	116.9	52.7	116.9	450	200	18	733	951
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.94	5.58	0.3980	0.65	0.145	64.6	230.0	64.6	450	308	10	405	722
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.32	5.61	0.3980	1.34	0.145	116.9	52.7	116.9	450	195	18	714	926
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.32	5.61	0.3980	0.65	0.145	64.6	230.0	64.6	450	300	10	394	704
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.60	5.65	0.3980	1.34	0.145	116.9	52.7	116.9	450	189	18	692	898
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.60	5.65	0.3980	0.65	0.145	64.6	230.0	64.6	450	291	10	382	682
Totals:											1,481	84	3,319	4,884	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	15.49	6.05	1.3300	1.59	0.337	116.9	52.7	116.9	925	266	46	966	1,278
CATV	CATV 1.0	Unknown, COMMUNICATION	15.49	6.05	1.3300	0.82	0.337	64.6	230.0	64.6	925	409	26	533	968
Telco	TELE 1.5	Unknown, COMMUNICATION	14.44	6.11	1.5000	1.85	0.900	116.9	52.7	116.9	2,000	536	82	985	1,602
Telco	TELE 1.5	Unknown, COMMUNICATION	14.44	6.11	1.5000	0.93	0.900	64.6	230.0	64.6	2,000	825	45	544	1,414
Totals:											2,036	199	3,028	5,262	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.94	0.00	141.4	51.4	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.32	0.00	141.4	51.4	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.60	0.00	141.4	51.4	2.00	3.00	3.19	2	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	15.49	0.00	141.4	51.4	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	14.44	0.00	141.4	51.4	5.00	3.00	0.00	5	0	5
Totals:										15	32	47

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	14.21	32.72	8.33	7.58	6.05	8.85	1.60e+6	60.00	57.00	24.85	27,209	272.01	18.52

Pole Num:	232W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.02	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.99	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.034136 Deg	Longitude:	-84.467482 Deg	Elevation:	941.830955033169		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	48.9	0.0
Groundline	48.9	0.0
Vertical	16.1	22.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	40,337	318.7
Groundline	40,337	318.7
GL Allowable	83,665	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	867	51.8	27,288	67.7	32.6	2,217	946	9	2,226	32.7
Comms	440	26.3	6,281	15.6	7.5	510	646	6	516	7.6
PowerEquipments	42	2.5	1,225	3.0	1.5	100	694	7	106	1.6
Pole	186	11.1	3,221	8.0	3.9	262	1,893	18	280	4.1
Crossarms	1	0.1	47	0.1	0.1	4	95	1	5	0.1
Risers	129	7.7	2,001	5.0	2.4	163	131	1	164	2.4
Insulators	9	0.5	274	0.7	0.3	22	78	1	23	0.3
Pole Load	1,673	100.0	40,337	100.0	48.2	3,277	4,482	43	3,320	48.8
Pole Reserve Capacity			43,328		51.8	3,523			3,480	51.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,046	62.5	30,800	76.4	36.8	2,502	1,830	18	2,520	37.1
Unknown, COMMUNICATION	440	26.3	6,269	15.5	7.5	509	665	6	516	7.6
Pole	186	11.1	3,221	8.0	3.9	262	1,893	18	280	4.1
<Undefined>	1	0.1	47	0.1	0.1	4	95	1	5	0.1
Totals:	1,673	100.0	40,337	100.0	48.2	3,277	4,482	43	3,320	48.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.86	0.00	0.7200	1.82	0.462	182.2	50.6	182.2	2,410	-2,767	0	2,258 -509
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.86	0.00	0.7200	1.00	0.462	116.9	232.7	116.9	2,410	5,844	0	1,442 7,287
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.13	45.33	0.7200	1.82	0.462	182.2	50.6	182.2	2,410	-2,710	498	2,211 0
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.13	45.33	0.7200	1.00	0.462	116.9	232.7	116.9	2,410	5,723	320	1,412 7,455
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.13	45.33	0.7200	1.82	0.462	182.2	50.6	182.2	2,410	-2,710	-492	2,211 -990

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.13	45.33	0.7200	1.00	0.462	116.9	232.7	116.9	2,410	5,723	-316	1,412	6,820
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.48	6.68	0.3980	2.43	0.145	182.2	50.6	182.3	450	-377	33	1,214	870
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.48	6.68	0.3980	1.34	0.145	116.9	232.7	116.9	450	797	21	775	1,594
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.85	6.72	0.3980	2.43	0.145	182.2	50.6	182.3	450	-368	34	1,184	849
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.85	6.72	0.3980	1.34	0.145	116.9	232.7	116.9	450	777	22	756	1,555
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.20	6.76	0.3980	2.43	0.145	182.2	50.6	182.3	450	-358	34	1,153	828
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.20	6.76	0.3980	1.34	0.145	116.9	232.7	116.9	450	757	22	736	1,515
Totals:											10,332	175	16,766	27,273	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.01	7.25	1.3300	2.76	0.337	182.2	50.6	182.3	925	-487	-87	1,555	981
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.01	7.25	1.3300	1.59	0.337	116.9	232.7	116.9	925	1,030	-56	993	1,967
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.49	7.35	1.5000	3.27	0.900	182.2	50.6	182.3	2,000	-954	-153	1,538	431
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.49	7.35	1.5000	1.85	0.900	116.9	232.7	116.9	2,000	2,015	-98	982	2,899
		COMMUNICATION													
Totals:											1,603	-393	5,068	6,278	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	28.70	20.98	230.0	230.0	365.00	39.00	--	22.00	--	27	1,197	1,224
Totals:											27	1,197	1,224	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		33.32	5.45	231.7	231.7	50.00	4.50	3.50	96.00	2	45	47
Totals:											2	45	47

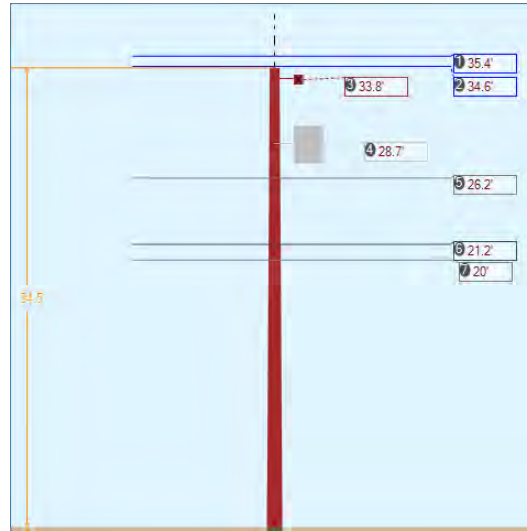
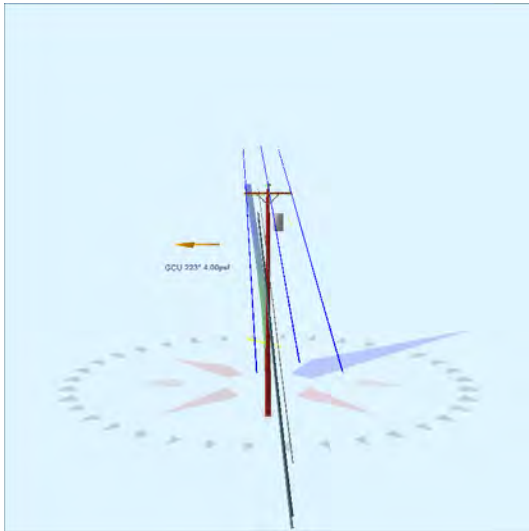
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 35.0°	Riser	KU, UTILITY	22.98	5.85	35.0	35.0	22.98	275.75	6.00	6.00	275.75	3	1,202	1,204
Riser 5.0°	Riser	KU, UTILITY	22.98	5.85	5.0	5.0	22.98	275.75	4.00	4.00	275.75	8	603	611
Riser 330.0°	Riser	KU, UTILITY	22.98	5.85	330.0	330.0	22.98	275.75	4.00	4.00	275.75	11	174	185
Totals:												21	1,979	2,000

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.98	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.51	45.00	314.7	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.51	-45.00	148.6	0.0	6.00	3.50	7.50	-42	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.48	0.00	321.7	231.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.85	0.00	321.7	231.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.20	0.00	321.7	231.7	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	16.01	0.00	141.7	231.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	14.49	0.00	141.7	231.7	5.00	3.00	0.00	-6	0	-6
Totals:										-5	279	274

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.52	33.59	10.54	16.21	7.32	11.46	1.60e+6	60.00	57.00	33.98	27,793	278.40	6.21

Pole Num:	236W - 21411-1613	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.52	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.18	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.034877 Deg	Longitude:	-84.466232 Deg	Elevation:	942.111945654613		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.2	0.0
Groundline	21.2	0.0
Vertical	12.6	22.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,550	223.2
Groundline	17,550	223.2
GL Allowable	85,005	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 223.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	285	39.3	9,495	54.1	11.2	756	481	5	760	11.2
Comms	205	28.3	4,468	25.5	5.3	356	386	4	359	5.3
PowerEquipments	36	5.0	-69	-0.4	-0.1	-6	636	6	1	0.0
Pole	190	26.2	3,339	19.0	3.9	266	1,934	19	284	4.2
Crossarms	1	0.2	42	0.2	0.1	3	95	1	4	0.1
Insulators	8	1.1	274	1.6	0.3	22	70	1	23	0.3
Pole Load	724	100.0	17,550	100.0	20.7	1,397	3,603	35	1,432	21.1
Pole Reserve Capacity			67,455		79.4	5,403			5,368	78.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 223.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	329	45.4	9,689	55.2	11.4	771	1,169	11	783	11.5
Unknown, COMMUNICATION	205	28.3	4,479	25.5	5.3	357	405	4	360	5.3
Pole	190	26.2	3,339	19.0	3.9	266	1,934	19	284	4.2
<Undefined>	1	0.2	42	0.2	0.1	3	95	1	4	0.1
Totals:	724	100.0	17,550	100.0	20.7	1,397	3,603	35	1,432	21.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.36	0.00	0.7200	0.26	0.462	117.8	133.6	117.8	6,210	1,677	0	1,483	3,160
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.36	0.00	0.7200	0.07	0.462	61.0	313.5	61.0	6,210	-1,294	0	768	-525
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.59	45.33	0.7200	0.26	0.462	117.8	133.6	117.8	6,210	1,641	321	1,450	3,412
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.59	45.33	0.7200	0.07	0.462	61.0	313.5	61.0	6,210	-1,266	166	752	-348
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.59	45.33	0.7200	0.26	0.462	117.8	133.6	117.8	6,210	1,641	-320	1,450	2,771
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.59	45.33	0.7200	0.07	0.462	61.0	313.5	61.0	6,210	-1,266	-166	752	-680

Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	26.19	6.66	0.5630	0.33	0.291	117.8	133.6	117.8	3,410	682	34	956	1,672
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	26.19	6.66	0.5630	0.09	0.291	61.0	313.5	61.0	3,410	-526	18	496	-13
Totals:											1,290	52	8,107	9,449	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.23	6.97	1.3300	1.60	0.337	117.8	133.6	117.8	925	150	54	1,334	1,538
CATV	CATV 1.0	Unknown, COMMUNICATION	21.23	6.97	1.3300	0.77	0.337	61.0	313.5	61.0	925	-116	28	692	604
Telco	TELE 1.5	Unknown, COMMUNICATION	20.05	7.04	1.5000	1.86	0.900	117.8	133.6	117.8	2,000	306	95	1,377	1,778
Telco	TELE 1.5	Unknown, COMMUNICATION	20.05	7.04	1.5000	0.87	0.900	61.0	313.5	61.0	2,000	-236	49	714	527
Totals:											104	226	4,117	4,447	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	28.72	21.01	40.0	40.0	335.00	34.00	--	22.00	--	-1,113	1,044	-68
Totals:											-1,113	1,044	-68	

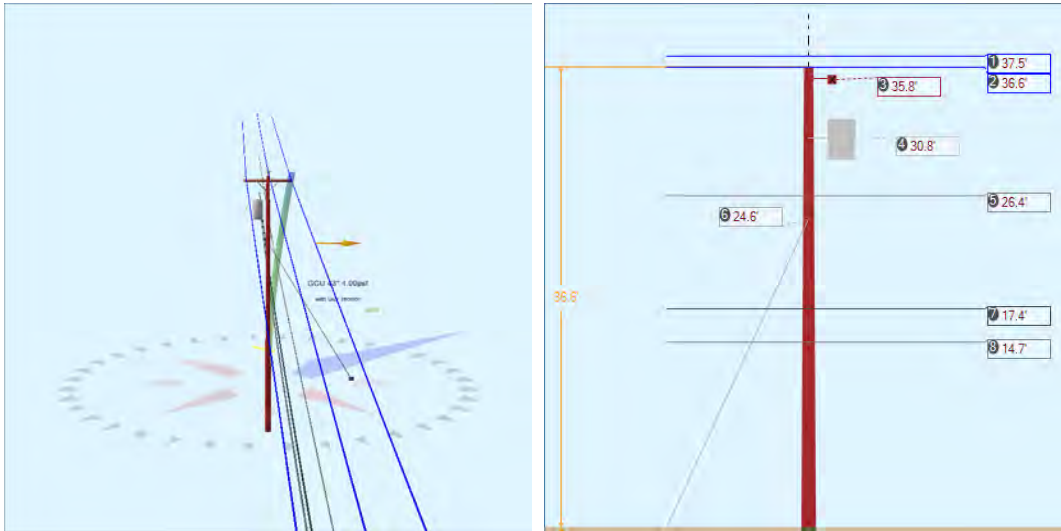
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		33.77	5.45	133.6	133.6	50.00	4.50	3.50	96.00	0	41	42
Totals:											0	41	42

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.48	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.96	45.00	216.6	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.96	-45.00	50.5	0.0	6.00	3.50	7.50	-43	43	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.19	0.00	223.6	133.6	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.23	0.00	223.6	133.6	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	20.05	0.00	223.6	133.6	5.00	3.00	0.00	6	0	6
Totals:										13	260	273

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.47	33.56	10.60	14.63	7.32	11.52	1.60e+6	60.00	57.00	34.48	28,614	285.94	7.94

Pole Num:	237W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.63	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.034663 Deg	Longitude:	-84.465928 Deg	Elevation:	933.144804905184		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	43.4
Groundline	0.0	43.4
Vertical	24.0	209.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	36,101	42.7
Groundline	36,101	42.7
GL Allowable	88,150	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	15.3	29.4		0.0	43.4	4.7	220.0
? EHS 3/8 (Down)			24.6	0.0	43.4	7.5	220.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 42.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	723	53.1	25,363	70.3	28.8	1,954	827	8	1,961	28.8
Comms	383	28.1	6,535	18.1	7.4	503	663	6	510	7.5
GuyBraces	2	0.1	36	0.1	0.0	3	9	0	3	0.0
PowerEquipments	42	3.1	81	0.2	0.1	6	694	6	13	0.2
Pole	203	14.9	3,751	10.4	4.3	289	2,088	20	309	4.5
Crossarms	1	0.1	44	0.1	0.1	3	95	1	4	0.1
Insulators	8	0.6	289	0.8	0.3	22	70	1	23	0.3
Pole Load	1,361	100.0	36,101	100.0	41.0	2,781	4,446	42	2,822	41.5
Pole Reserve Capacity			52,049		59.0	4,019			3,978	58.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 42.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	774	56.9	25,758	71.4	29.2	1,984	1,581	15	1,999	29.4
Unknown, COMMUNICATION	383	28.1	6,547	18.1	7.4	504	682	6	511	7.5
Pole	203	14.9	3,751	10.4	4.3	289	2,088	20	309	4.5
<Undefined>	1	0.1	44	0.1	0.1	3	95	1	4	0.1
Totals:	1,361	100.0	36,101	100.0	41.0	2,781	4,446	42	2,822	41.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.52	0.00	0.7200	0.65	0.462	189.5	133.0	189.5	6,210	-1,544	0	2,532	987
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.52	0.00	0.7200	0.26	0.462	117.8	313.6	117.8	6,210	4,719	0	1,573	6,292
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.64	45.33	0.7200	0.65	0.462	189.5	133.0	189.5	6,210	-1,508	516	2,472	1,480
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.64	45.33	0.7200	0.26	0.462	117.8	313.6	117.8	6,210	4,608	321	1,536	6,465
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.64	45.33	0.7200	0.65	0.462	189.5	133.0	189.5	6,210	-1,508	-515	2,472	449

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.64	45.33	0.7200	0.26	0.462	117.8	313.6	117.8	6,210	4,608	-320	1,536	5,824
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	26.39	6.77	0.5630	0.82	0.291	189.5	133.0	189.5	3,410	-596	55	1,550	1,009
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	26.39	6.77	0.5630	0.33	0.291	117.8	313.6	117.8	3,410	1,821	34	963	2,818
Totals:											10,599	91	14,634	25,325	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.40	7.30	1.3300	2.91	0.337	189.5	133.0	189.5	925	-107	91	1,760	1,744
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.40	7.30	1.3300	1.60	0.337	117.8	313.6	117.8	925	326	56	1,094	1,476
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.75	7.46	1.5000	3.45	0.900	189.5	133.0	189.5	2,000	-195	161	1,630	1,596
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.75	7.46	1.5000	1.86	0.900	117.8	313.6	117.8	2,000	597	100	1,013	1,710
		COMMUNICATION													
Totals:											621	409	5,496	6,525	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	30.82	21.01	230.0	230.0	365.00	39.00	--	22.00	--	-1,204	1,285	81
Totals:											-1,204	1,285	81	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		35.83	5.46	313.3	313.3	50.00	4.50	3.50	96.00	0	44	44
Totals:											0	44	44

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.65	0.00	0.0	0.0	13.00	9.00	10.50	0	170	170
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.01	45.00	36.3	0.0	6.00	3.50	7.50	43	46	89
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.01	-45.00	230.2	0.0	6.00	3.50	7.50	-43	46	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.39	0.00	43.3	313.3	2.00	3.00	3.19	2	12	14

Bolt	Three Bolt	Unknown, COMMUNICATION	17.40	0.00	43.3	313.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	14.75	0.00	43.3	313.3	5.00	3.00	0.00	6	0	6
Totals:										14	275	289

Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.57	0.00	15.34	0.375	75.00	29.4	57.8	0.273	27.28	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,041	947	0	0	0	0	36
Totals:										0	0	0	36

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	15.34	29.4	20,000	1.00	20,000	947	0	4.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.96	33.65	10.70	9.93	7.32	11.66	1.60e+6	60.00	57.00	36.65	209,182	2117.05	47.62

34' 1" - 126W - 25180-129

22' 2" - Lowest Power

20' 1" - Highest Tel Cable

20' 1" - Highest Tel Drop

19' 6" - Proposed Metronet

4' - Base offset

Base

32' 8" - 127W - 25180-145

22' 2" - Lowest Power

20' 7" - Proposed Metronet

20' 3" - Highest Tel Cable

20' 3" - Lowest Tel Drop

4' - Base offset

Base

33' 11" - 128W - 25180-153

23' 9" - Lowest Power

20' 3" - Proposed Metronet

19' 3" - Highest Tel Cable

19' 3" - Highest Tel Drop

4' - Base offset

Base

31' 7" - 129W - 25180-161

20' 8" - Lowest Power

18' 8" - Proposed Metronet

18' 4" - Highest Tel Cable

18' 4" - Highest Tel Drop

4' - Base offset

Base

32' 2" - 130W - 25180-169

22' 11" - Lowest Power

19' 5" - Proposed Metronet

18' 9" - Highest Tel Cable

18' 7" - Highest Tel Drop

4' - Base offset

Base

33' 7" - 131W - 25180-177

22' 10" - Lowest Power

20' - Proposed Metronet

19' - Highest Tel Cable

4' - Base offset

Base

32' 9" - 132W - NT

21' 6" - Lowest Power

20' 1" - Proposed Metronet

19' 8" - Highest Tel Cable

4' - Base offset

Base

33' - 133W - 25180-205

22' 1" - Lowest Power
20' 1" - Proposed Metronet
18' 11" - Highest Tel Cable
18' 7" - Highest Tel Drop

4' - Base offset

Base



34' 2" - 134W - NT

- 24' 8" - Lowest Power
- 21' 2" - Proposed Metronet
- 20' 7" - Highest Tel Cable
- 19' 10" - Highest Tel Drop

4' - Base offset

Base

34' - 135W - NT

24' 2" - Lowest Power

20' 9" - Proposed Metronet

20' - Highest Tel Cable

4' - Base offset

Base

33' 4" - 136W - 25180-237

22' 3" - Lowest Power

21' 1" - Proposed Metronet

19' 7" - Highest Tel Cable

4' - Base offset

Base

33' 11" - 137W - 25180-243

23' 10" - Lowest Power

20' 2" - Proposed Metronet

19' 8" - Highest Tel Cable

3' - Base offset

Base

33' 11" - 138W - 25180-245

22' 8" - Lowest Power

20' 11" - Proposed Metronet

19' 10" - Highest Tel Cable

19' 1" - Highest Tel Drop

4' - Base offset

Base

34' - 139W - 25180-255

22' - Lowest Power

20' 9" - Proposed Metronet

20' 2" - Highest Tel Cable

19' 2" - Highest Tel Drop

4' - Base offset

Base

36' 5" - 223W - 24060-400

25' 9" - Lowest Power

21' 6" - Proposed Metronet

18' 9" - Highest Tel Cable

18' 9" - Highest Tel Drop

4' - Base offset

Base

34' 1" - 224W - 24060-404

24' 2" - Lowest Power

18' 10" - Proposed Metronet

16' 9" - Highest Tel Cable

4' - Base offset

Base

35' 1" - 225W - NT

24' 8" - Lowest Power

17' 10" - Proposed Metronet

15' 7" - Highest Tel Cable

15' 7" - Base offset

Base

39' 2" - 226W - 24060-416

27' 2" - Lowest Power

15' 4" - Proposed Metronet

13' 5" - Highest Tel Cable

13' 5" - Highest Tel Drop

4' - Base offset

Base

34' 8" - 228W - NT

24' 4" - Lowest Power

17' 9" - Proposed Metronet

15' 8" - Highest Tel Cable

4' - Base offset

Base

23' 4" - 229W - 24050-426

20' 8" - Lowest Power

17' 4" - Proposed Metronet

15' 5" - Highest Tel Cable

4' - Base offset

Base

34' 3" - 230W - 24060-428

24' 9" - Lowest Power

17' 11" - Proposed Metronet

16' 7" - Base offset

16' 7" - Highest Tel Cable

Base

24' 10" - 231W - NT

22' 7" - Lowest Power

16' 6" - Proposed Metronet

14' 5" - Highest Tel Cable

4' - Base offset

Base

34' - 232W - NT

22' 11" - Lowest Power

17' 2" - Proposed Metronet

14' 5" - Highest Tel Cable

4' - Base offset

Base

34' 6" - 236W - 21411-1613

26' 1" - Lowest Power

22' 3" - Proposed Metronet

20' - Highest Tel Cable

4' - Base offset

Base

36' 8" - 237W - NT

24' 6" - Lowest Power

18' 5" - Proposed Metronet

14' 9" - Highest Tel Cable

14' 9" - Base offset

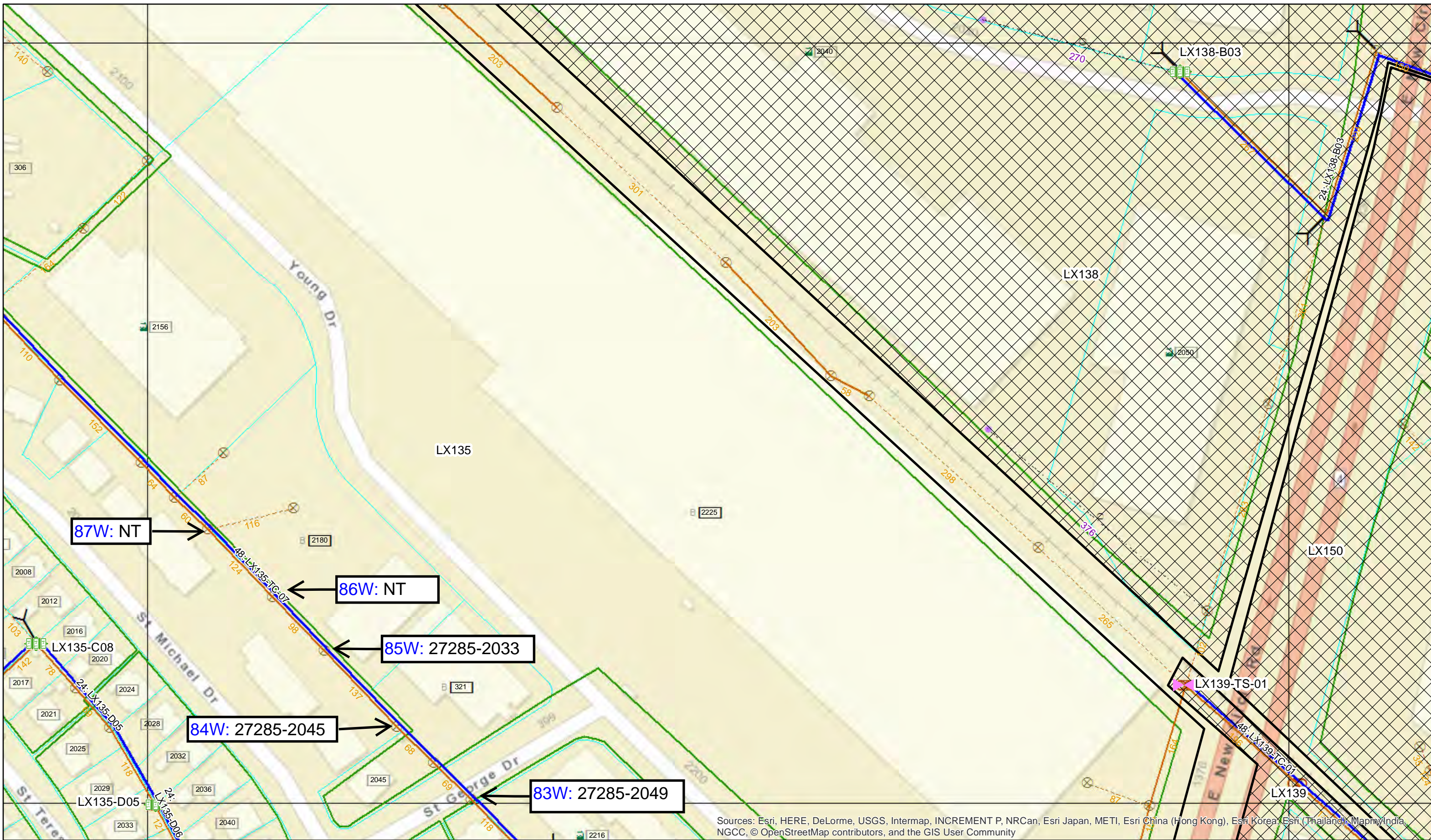
Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 1:26 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX135-02W
Attachments: LX135-02W - WINDSTREAM POLE INVENTORY REPORT.pdf; 135-02 Pole App Map.pdf; LX135-02W - METRONET POLE INVENTORY REPORT.XLSX; O-Calcs.pdf; Pole Photos.pdf; Map Key.pdf

Good Morning,
Please see attached for proposal titled LX135-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAX35
 PROJECT NUMBER:
 LXTNXY00437.CB
 DATE: 12/12/2017
 USER NAME: arqjls
 DESIGN ENG

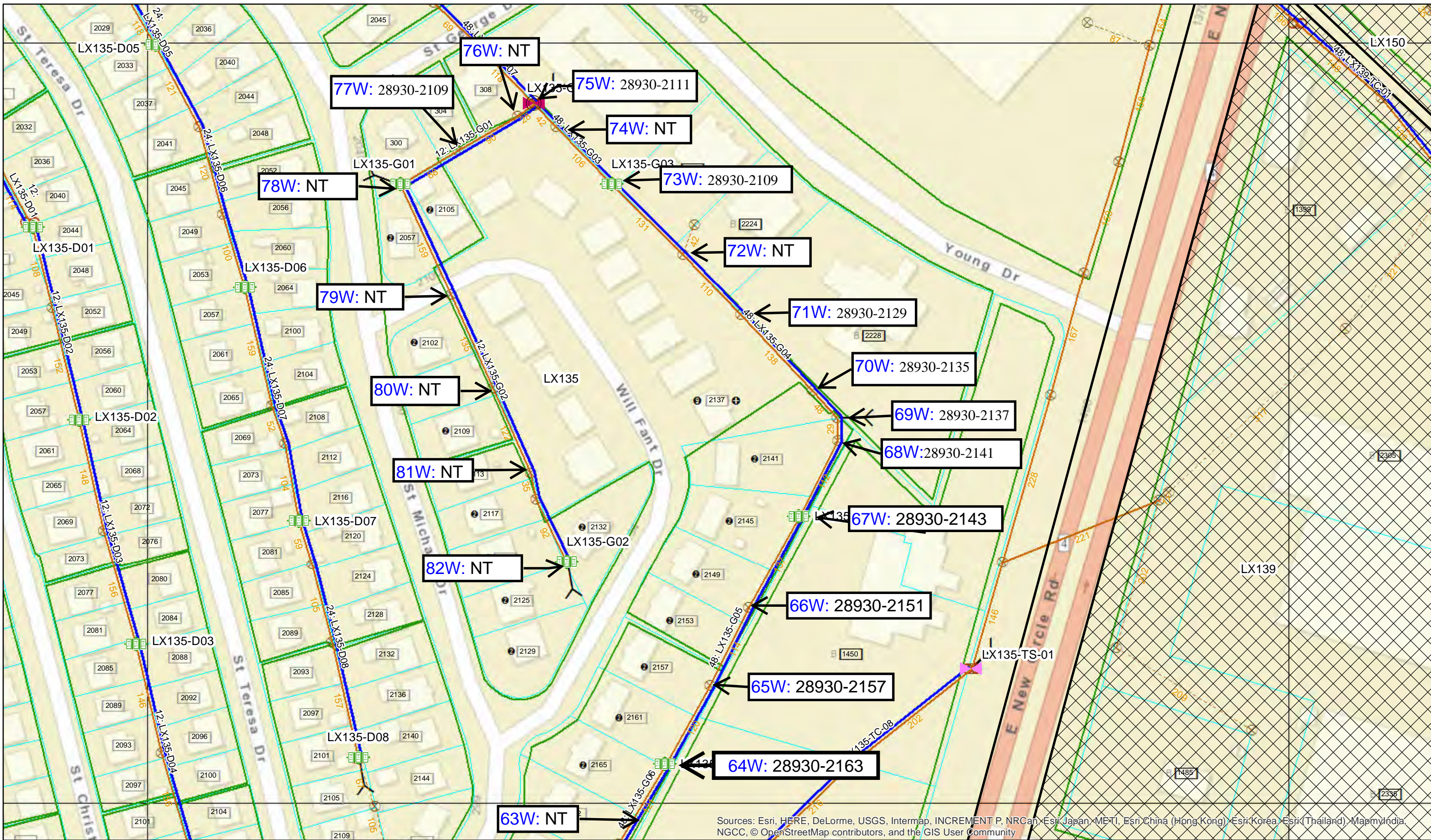
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAW35
 PROJECT NUMBER:
 LXTNXY.00457.CB
 DATE: 12/12/2017
 USER NAME: argjis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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 Evansville, In 47715



LX135-02W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		63W	NT	40/ 1	WS	2=Comms
KU	0	63W	NT		WS	
Windstream	25	63W	NT		WS	
Total Pole Count	25	63W	NT		WS	
Total Needing Make Ready	10	63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		64W	28930-2163	40/ 3	WS	1=None
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		65W	28930-2157	40/ 4	WS	1=None
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		65W	28930-2157		WS	
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		66W	28930-2151	40/ 4	WS	1=None
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67W	28930-2143		WS	
68W	28930-2141	40/ 3	WS	1=None
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69W	28930-2137	40/ 4	WS	1=None
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69W	28930-2137		WS	

70W	28930-2135	40/ 3	WS	1=None
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71W	28930-2129	45/ 3	WS	1=None
71W	28930-2129		WS	
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71W	28930-2129		WS	
71W	28930-2129		WS	
71W	28930-2129		WS	
72W	28930-2119	45/ 3	WS	4=Comms & Ele
72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
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72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
72W	28930-2119		WS	
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72W	28930-2119		WS	
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73W	28930-2115	45/ 3	WS	1=None
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73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
74W	NT	45/ 3	WS	1=None
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
75W	28930-2111	45/ 2	WS	2=Comms
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
76W	NT	40/ 4	WS	1=None
76W	NT		WS	

76W	NT		WS
76W	NT		WS
76W	NT		WS
76W	NT		WS
76W	NT		WS
77W	28930-2109	40/ 3	WS 2=Comms
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
78W	NT	40/ 3	WS 1=None
78W	NT		WS
78W	NT		WS
78W	NT		WS
78W	NT		WS
78W	NT		WS
79W	NT	40/ 3	WS 2=Comms
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
80W	NT	40/ 3	WS 3=Elec
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
81W	NT	40/ 3	WS 3=Elec
81W	NT		WS
81W	NT		WS
81W	NT		WS
81W	NT		WS

81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
82W	NT	40/ 3	WS	4=Comms & Ele
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
83W	27285-2049	45/ 3	WS	1=None
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
84W	27285-2045	45/ 3	WS	2=Comms
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
85W	27285-2033	45/3	WS	3=Elec
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	

Owner	1=None	2=Comms	5=Simple PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
by :	4=Comms&Elec	6=Complex PCO							

	272 ST ANN DR	38.02265	-84.45641	KU
		38.02265	-84.45641	KU
		38.02265	-84.45641	KU
		38.02265	-84.45641	KU
		38.02265	-84.45641	Metronet
Lower Charter		38.02265	-84.45641	Charter
Lower Windstream		38.02265	-84.45641	Windstream
Lower Windstream		38.02265	-84.45641	Windstream
Lower Windstream		38.02265	-84.45641	Windstream
Lower Windstream		38.02265	-84.45641	Windstream
Transfer to new pole	2163 WILL FANT DR, 1	38.02294	-84.45623	KU
Transfer to new pole		38.02294	-84.45623	KU
Transfer to new pole		38.02294	-84.45623	KU
Transfer to new pole		38.02294	-84.45623	KU
Transfer to new pole		38.02294	-84.45623	Metronet
Transfer to new pole		38.02294	-84.45623	Charter
Transfer to new pole		38.02294	-84.45623	Windstream
Transfer to new pole		38.02294	-84.45623	Windstream
Transfer to new pole		38.02294	-84.45623	Windstream
Transfer to new pole		38.02294	-84.45623	Windstream
	2157 WILL FANT DR, 1	38.02325	-84.45602	KU
		38.02325	-84.45602	KU
		38.02325	-84.45602	KU
		38.02325	-84.45602	KU
		38.02325	-84.45602	Metronet
		38.02325	-84.45602	Charter
		38.02325	-84.45602	Windstream
		38.02325	-84.45602	Windstream
		38.02325	-84.45602	Windstream
		38.02325	-84.45602	Windstream
	2151 WILL FANT DR	38.02352	-84.45586	KU
		38.02352	-84.45586	KU
		38.02352	-84.45586	KU

		38.02352	-84.45586	KU
		38.02352	-84.45586	KU
		38.02352	-84.45586	KU
		38.02352	-84.45586	Metronet
		38.02352	-84.45586	Charter
		38.02352	-84.45586	Charter
		38.02352	-84.45586	Windstream
		38.02352	-84.45586	Windstream
		38.02352	-84.45586	Windstream
		38.02352	-84.45586	Windstream
	2145 WILL FANT DR, 1	38.02382	-84.45561	KU
		38.02382	-84.45561	KU
		38.02382	-84.45561	KU
		38.02382	-84.45561	KU
		38.02382	-84.45561	Metronet
		38.02382	-84.45561	Charter
		38.02382	-84.45561	Windstream
		38.02382	-84.45561	Windstream
		38.02382	-84.45561	Windstream
		38.02382	-84.45561	Windstream
	32.30 2143 WILL FANT DR, 1	38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	Metronet
		38.02413	-84.45541	Charter
		38.02413	-84.45541	Windstream
		38.02413	-84.45541	Windstream
		38.02413	-84.45541	Windstream
		38.02413	-84.45541	Windstream
	2141 WILL FANT DR	38.02419	-84.45539	KU
		38.02419	-84.45539	KU
		38.02419	-84.45539	KU
		38.02419	-84.45539	KU
		38.02419	-84.45539	Metronet
		38.02419	-84.45539	Charter
		38.02419	-84.45539	Charter
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream

Lower Windstream	38.02478	-84.45611	Windstream
2117 WILL FANT DR, 3	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	Metronet
	38.02502	-84.45640	Charter
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
2216 YOUNG DR, 6	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	Metronet
	38.02524	-84.45671	Charter
	38.02524	-84.45671	Windstream
	38.02524	-84.45671	Windstream
	38.02524	-84.45671	Windstream
25.10 2216 YOUNG DR, 7	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	Metronet
Lower Charter	38.02532	-84.45678	Charter
Lower Charter	38.02532	-84.45678	Charter
Lower Windstream	38.02532	-84.45678	Windstream
Lower Windstream	38.02532	-84.45678	Windstream
Lower Windstream	38.02532	-84.45678	Windstream
308 ST GEORGE DR	38.02529	-84.45688	KU
	38.02529	-84.45688	KU

	38.02529	-84.45688	KU
	38.02529	-84.45688	KU
	38.02529	-84.45688	Metronet
	38.02529	-84.45688	Charter
	38.02529	-84.45688	Windstream
304 ST GEORGE DR	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	Metronet
Lower Charter	38.02516	-84.45714	Charter
Lower Windstream	38.02516	-84.45714	Windstream
2057 ST MICHAEL DR	38.02504	-84.45741	KU
	38.02504	-84.45741	KU
	38.02504	-84.45741	KU
	38.02504	-84.45741	Metronet
	38.02504	-84.45741	Charter
	38.02504	-84.45741	Windstream
2102 WILL FANT DR	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	Metronet
Lower & Resag Charter	38.02464	-84.45718	Charter
Lower Windstream	38.02464	-84.45718	Windstream
2105 ST MICHAEL DR,	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
Raise secondary drip loop	38.02433	-84.45701	KU
	38.02433	-84.45701	Metronet
	38.02433	-84.45701	Charter
	38.02433	-84.45701	Windstream
	38.02433	-84.45701	Windstream
2128 WILL FANT DR, 6	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU

Raise secondary drip loop	38.02401	-84.45683	KU	
	38.02401	-84.45683	Metronet	
	38.02401	-84.45683	Charter	
	38.02401	-84.45683	Windstream	
	38.02401	-84.45683	Windstream	
ec	2134 WILL FANT DR	38.02369	-84.45671	KU
		38.02369	-84.45671	KU
		38.02369	-84.45671	KU
		38.02369	-84.45671	KU
Raise secondary drip loop		38.02369	-84.45671	KU
		38.02369	-84.45671	Metronet
Lower Charter		38.02369	-84.45671	Charter
		38.02369	-84.45671	Charter
		38.02369	-84.45671	Windstream
		38.02369	-84.45671	Windstream
	308 ST GEORGE DR	38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	Metronet
		38.02557	-84.45709	Charter
		38.02557	-84.45709	Windstream
		38.02557	-84.45709	Windstream
	2041 ST MICHAEL DR,	38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	Metronet
Resag Charter		38.02580	-84.45740	Charter
		38.02580	-84.45740	Windstream
		38.02580	-84.45740	Windstream
	2029 ST MICHAEL DR,	38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU

	g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped	A: DOT Tr	Y/N
Primary	33'6"					Y	N		D: Pedestrian Only 9.5'				
Neutral	26'3"					Y	N						
Secondary	25'6"					Y	N						
Secondary	24'9"					Y	N						
Communication		21'5"				Y	N						
Communication	21'9"	20'5"		39		Y	N						
Communication	20'9"	19'5"				Y	N						
Communication	19'8"	18'5"				Y	N						
Communication	18'8"	17'4"				Y	N						
Communication	17'7"	16'4"	15'10"			Y	N						
Primary		33'10"				N	N		D: Pedestrian Only 9.5'				
Neutral		28'4"				N	N						
Secondary		27'4"				N	N						
Secondary		26'4"				N	N						
Communication		23'0"				N	N						
Communication		22'0"		67		N	N						
Communication		21'0"				N	N						
Communication		20'0"				N	N						
Communication		19'0"				N	N						
Communication		18'0"	14'9"			N	N						
Primary	34'1"					N	N		D: Pedestrian Only 9.5'				
Neutral	28'2"					N	N						
Secondary	27'4"					N	N						
Secondary	26'5"					N	N						
Communication		22'0"				N	N						
Communication	21'0"			60		N	N						
Communication	19'9"					N	N						
Communication	18'9"					N	N						
Communication	17'6"					N	N						
Communication	16'7"		15'0"			N	N						
Primary	33'5"					N	N		D: Pedestrian Only 9.5'				
Primary	32'7"					N	N						
Transformer	27'3"					N	N						

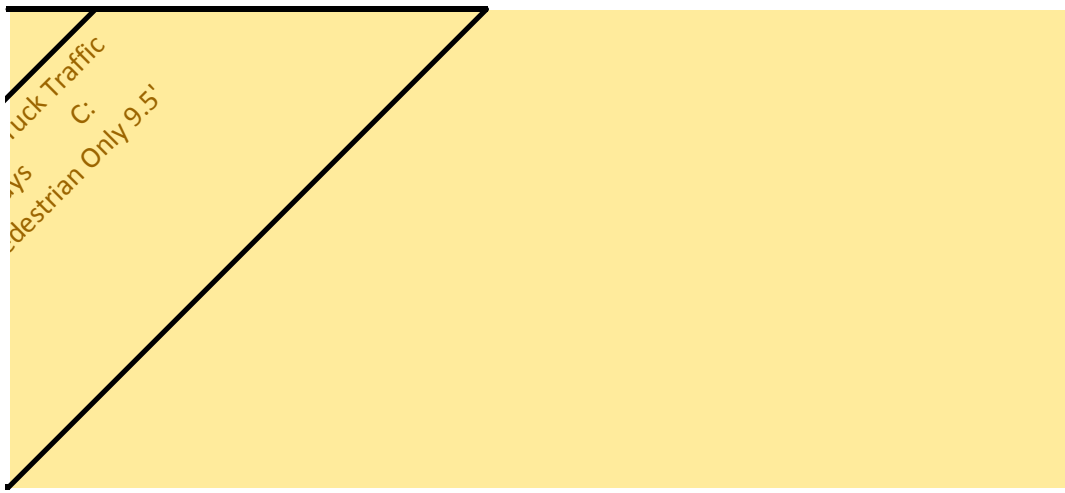
Neutral	25'7"		N	N	
Secondary	24'11"		N	N	
Secondary	24'3"		N	N	
Communication		20'11"	N	N	
OH Guy	20'3"		N	N	
Communication	19'11"		42	N	N
Communication	18'4"			N	N
Communication	17'4"			N	N
Communication	16'4"			N	N
Communication	15'1"	13'8"		N	N
Primary	32'5"			N	N D: Pedestrian Only 9.5'
Neutral	25'5"			N	N
Secondary	24'9"			N	N
Secondary	24'1"			N	N
Communication		20'6"		N	N
Communication	19'6"		45	N	N
Communication	18'7"			N	N
Communication	17'7"			N	N
Communication	16'6"			N	N
Communication	15'6"	14'6"		N	N
Primary	33'5"			N	N D: Pedestrian Only 9.5'
Neutral	26'11"			N	N
Secondary	26'3"			N	N
Secondary	25'6"			N	N
Down Guy	24'7"			N	N
Communication		21'2"		N	N
Communication	20'2"		94	N	N
Communication	18'4"			N	N
Communication	17'5"			N	N
Communication	16'6"			N	N
Communication	15'1"	14'1"		N	N
Primary	30'8"			N	N D: Pedestrian Only 9.5'
Primary	28'4"			N	N
Neutral	23'8"			N	N
OH Guy	21'3"			N	N
Communication		17'5"		N	N
OH Guy	16'5"			N	N
Communication	16'3"			N	N
Communication	15'10"		81	N	N
Communication	15'8"			N	N
Communication	15'4"			N	N
Communication	15'2"			N	N
Communication	13'7"			N	N
Communication	13'1"			N	N
Communication	12'6"	12'9"		N	N
Communication	12'3"			N	N

Primary	35'6"		N	N	D: Pedestrian Only 9.5'
Primary	33'1"		N	N	
Neutral	25'6"		N	N	
Secondary	24'6"		N	N	
Secondary	23'10"		N	N	
Secondary	22'9"		N	N	
Communication		16'11"	N	N	
Communication	15'11"		72	N	N
Communication	15'8"			N	N
Communication	14'11"			N	N
Communication	14'0"			N	N
Communication	13'1"	14'4"		N	N
Primary	38'7"		N	N	D: Pedestrian Only 9.5'
Primary	38'1"		N	N	
Transformer	30'8"		N	N	
Neutral	30'0"		N	N	
Secondary	29'1"		N	N	
Secondary	28'3"		N	N	
Secondary	27'4"		N	N	
Streetlight	25'9"		N	N	
Streetlight	25'2"		N	N	
Communication		23'1"	N	N	
Communication	22'1"			N	N
Communication	20'8"			N	N
Communication	20'1"		67	N	N
Communication	19'1"			N	N
Communication	18'2"			N	N
Communication	17'4"			N	N
Communication	16'6"	14'5"		N	N
Primary	37'10"		Y	N	D: Pedestrian Only 9.5'
Transformer	27'7"		Y	N	
Neutral	27'2"		Y	N	
Secondary	26'7"		Y	N	
Secondary	25'10"		Y	N	
Secondary	25'3"		Y	N	
Streetlight	24'6"		Y	N	
Secondary Riser	24'2"		Y	N	
Secondary Drip Loop	23'0"	24'2"	Y	N	
Communication		21'0"	Y	N	
Communication	21'10"	20'0"	Y	N	
Communication	21'0"	19'1"	49	Y	N
Communication	20'3"	18'2"	Y	N	
Communication	19'1"	17'3"	Y	N	
Communication	18'2"	16'3"	Y	N	

Communication	17'3"	15'3"	15'8"	Y	N	
Primary	35'11"			N	N	D: Pedestrian Only 9.5'
Primary	35'1"			N	N	
Transformer	30'7"			N	N	
Neutral	30'5"			N	N	
Secondary	29'1"			N	N	
Secondary	27'11"			N	N	
Streetlight	27'7"			N	N	
Secondary	26'10"			N	N	
OH Guy	25'9"			N	N	
Communication		21'5"		N	N	
Communication	20'5"		85	N	N	
Communication	19'1"			N	N	
Communication	18'1"			N	N	
Communication	17'0"			N	N	
Communication	16'2"		12'10"	N	N	
Primary	38'4"			N	N	D: Pedestrian Only 9.5'
Primary	37'10"			N	N	
Transformer	28'10"			N	N	
Neutral	27'9"			N	N	
Secondary	27'0"			N	N	
Secondary	26'2"			N	N	
Secondary	25'6"			N	N	
Secondary Drip Loop	24'11"			N	N	
Streetlight	23'10"			N	N	
Communication		18'9"		N	N	
Communication	17'9"		99	N	N	
Communication	16'8"			N	N	
Communication	15'8"			N	N	
Communication	14'5"		15'0"	N	N	
Primary	39'11"			Y	N	D: Pedestrian Only 9.5'
Primary	39'3"			Y	N	
Primary	35'10"			Y	N	
Neutral	25'11"			Y	N	
Secondary	24'8"			Y	N	
Communication		21'4"		Y	N	
Communication	22'3"	20'4"	49	Y	N	
Communication	20'11"	19'4"		Y	N	
Communication	19'11"	18'4"	18'7"	Y	N	
Communication	18'9"	17'4"		Y	N	
Communication	18'0"	16'4"		Y	N	
Primary	34'1"			N	N	D: Pedestrian Only 9.5'
Neutral	26'9"			N	N	

Secondary	25'10"			N	N	
Secondary	25'0"			N	N	
Communication		20'11"		N	N	
Communication	19'11"		70	N	N	
Communication	19'1"	15'8"		N	N	
Primary	33'0"			N	N	D: Pedestrian Only 9.5'
Transformer	25'10"			N	N	
Neutral	25'4"			N	N	
Secondary	24'7"			N	N	
Secondary	23'11"			N	N	
Communication		20'4"		N	N	
Communication	20'4"	19'4"	57	N	N	
Communication	18'11"	18'4"	16'0"	N	N	
Primary	32'6"			N	N	B:Residential/Over Driveways
Neutral	25'10"			N	N	
OH Guy	23'5"			N	N	
Communication		21'2"		N	N	
Communication	20'2"		69	N	N	
Communication	18'5"	18'6"		N	N	
Primary	32'7"			Y	Y	D: Pedestrian Only 9.5'
Neutral	25'6"			Y	Y	
Secondary	24'1"			Y	Y	
Secondary	23'6"			Y	Y	
Streetlight	21'5"			Y	Y	
Communication		20'2"		Y	Y	
Communication	20'8"	19'2"	20	Y	Y	
Communication	19'8"	18'2"	12'0"	Y	Y	
Primary	33'5"			Y	N	D: Pedestrian Only 9.5'
Transformer	26'7"			Y	N	
Neutral	25'6"			Y	N	
Secondary	24'9"			Y	N	
Secondary	24'0"			Y	N	
Secondary Drip Loop	21'11"	23'7"		Y	N	
Communication		20'3"		Y	N	
Communication	19'3"			Y	N	
Communication	17'10"		45	Y	N	
Communication	17'5"	17'1"		Y	N	
Primary	32'10"			Y	N	D: Pedestrian Only 9.5'
Transformer	25'8"			Y	N	
Neutral	24'8"			Y	N	
Secondary	23'11"			Y	N	
Secondary	23'3"			Y	N	

Secondary Drip Loop	22'8"	23'3"		Y	N	
Communication		19'11"		Y	N	
Communication	18'11"		42	Y	N	
Communication	18'3"			Y	N	
Communication	17'8"	11'0"		Y	N	
Primary	31'10"			Y	N	N/A
Neutral	25'3"			Y	N	
Secondary	24'8"			Y	N	
Secondary	24'0"			Y	N	
Secondary Drip Loop	21'7"	24'0"		Y	N	
Communication		20'8"		Y	N	
OH Guy	19'11"	19'8"		Y	N	
Communication	18'8"		N/A	Y	N	
Communication	18'3"			Y	N	
Communication	17'8"	N/A		Y	N	
Primary	39'3"			N	N	B:Residential/Over Driveways
Primary	38'8"			N	N	
Capacitor Bank	32'3"			N	N	
Neutral	31'7"			N	N	
Secondary	30'6"			N	N	
Secondary Riser	28'4"			N	N	
OH Guy	28'1"			N	N	
Streetlight	25'2"			N	N	
Communication		22'5"		N	N	
Communication	21'5"		71	N	N	
Communication	20'11"			N	N	
Communication	20'3"	18'10"		N	N	
Primary	36'7"			N	Y	D: Pedestrian Only 9.5'
Transformer	27'4"			N	Y	
Neutral	25'11"			N	Y	
Secondary	25'3"			N	Y	
Secondary	24'7'			N	Y	
Secondary	23'10"			N	Y	
OH Guy	22'6"			N	Y	
Communication		20'6"		N	Y	
Communication	19'6"		14	N	Y	
Communication	18'8"			N	Y	
Communication	17'9"	13'10"		N	Y	
Primary	37'10"			N	N	D: Pedestrian Only 9.5'
Transformer	28'6"			N	N	
Neutral	25'9"			N	N	
Secondary	25'1"			N	N	
Secondary	24'4"			N	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX135-02W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812-213-1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Lauren Sandefur 3.18.19

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	NT	63W	272 ST ANN DR, Lexington, KY 40502	40, 1, WXM	20'9"	19'11"	24'9"		(1)Fiber/Strand		
2	28930-2163	64W	2163 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	N/A	N/A	N/A		(1)Fiber/Strand		
3	28930-2157	65W	2157 WILL FANT DR, 1/2, Lexington, KY 40502	40, 4, WXM	19'9"	18'9"	26'5"		(1)Fiber/Strand		
4	28930-2151	66W	2151 WILL FANT DR, Lexington, KY 40502	40, 4, WXM	18'4"	18'0"	24'3"		(1)Fiber/Strand		
5	28930-2143	67W	2145 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	18'7"	17'10"	24'1"		(1)Fiber/Strand		
6	28930-2141	68W	2143 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	18'4"	N/A	25'6"		(1)Fiber/Strand		
7	28930-2137	69W	2141 WILL FANT DR, Lexington, KY 40502	40, 4, WXM	15'10"	N/A	23'8"		(1)Fiber/Strand		
8	28930-2135	70W	2137 WILL FANT DR, 4, Lexington, KY 40502	40, 3, WXM	15'8"	13'3"	22'9"		(1)Fiber/Strand		
9	28930-2129	71W	2133 WILL FANT DR, 4, Lexington, KY 40502	45, 3, WXM	22'1"	20'0"	25'2"		(1)Fiber/Strand		
10	28930-2119	72W	2121 WILL FANT DR, 2, Lexington, KY 40502	45, 3, WXM	21'10"	21'10"	23'0"		(1)Fiber/Strand		
11	28930-2115	73W	2117 WILL FANT DR, 3, Lexington, KY 40502	45, 3, WXM	19'1"	17'0"	26'10"		(1)Fiber/Strand		
12	NT	74W	2216 YOUNG DR, 6, Lexington, KY 40502	45, 3, WXM	16'8"	N/A	23'10"		(1)Fiber/Strand		
13	28930-2111	75W	2216 YOUNG DR, 7, Lexington, KY 40502	45, 2, WXM	19'11"	19'11"	24'8"		(1)Fiber/Strand		
14	NT	76W	308 ST GEORGE DR, Lexington, KY 40502	40, 4, WXM	19'1"	19'1"	25'0"		(1)Fiber/Strand		
15	28930-2109	77W	304 ST GEORGE DR, Lexington, KY 40502	40, 3, WXM	18'11"	18'11"	23'11"		(1)Fiber/Strand		
16	NT	78W	2057 ST MICHAEL DR, Lexington, KY 40502	40, 3, WXM	18'5"	19'1"	25'10"		(1)Fiber/Strand		
17	NT	79W	2102 WILL FANT DR, Lexington, KY 40502	40, 3, WXM	19'8"	20'11"	21'5"		(1)Fiber/Strand		
18	NT	80W	2105 ST MICHAEL DR, B, Lexington, KY 40502	40, 3, WXM	17'10"	17'10"	21'11"		(1)Fiber/Strand		
19	NT	81W	2128 WILL FANT DR, 6, Lexington, KY 40502	40, 3, WXM	18'3"	18'3"	22'8"		(1)Fiber/Strand		

20	NT	82W	2134 WILL FANT DR, Lexington, KY 40502	40, 3, WXM	18'3"	18'3"	21'7"		(1)Fiber/Strand			
21	27285-2049	83W	308 ST GEORGE DR, Lexington, KY 40502	45, 3, WXM	20'11"	N/A	25'2"		(1)Fiber/Strand			
22	27285-2045	84W	2041 ST MICHAEL DR, 6, Lexington, KY 40	45, 3, WXM	18'8"	18'8"	23'10"		(1)Fiber/Strand			
23	27285-2033	85W	2029 ST MICHAEL DR, 13, Lexington, KY 4	45, 3, WXM	18'1"	N/A	21'1"		(1)Fiber/Strand			
24	NT	86W	2029 ST MICHAEL DR, 10, Lexington, KY 4	45, 3, WXM	17'7"	N/A	25'9"		(1)Fiber/Strand			
25	NT	87W	2021 ST MICHAEL DR, 5, Lexington, KY 40	40, 3, WXM	16'0"	N/A	23'1"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

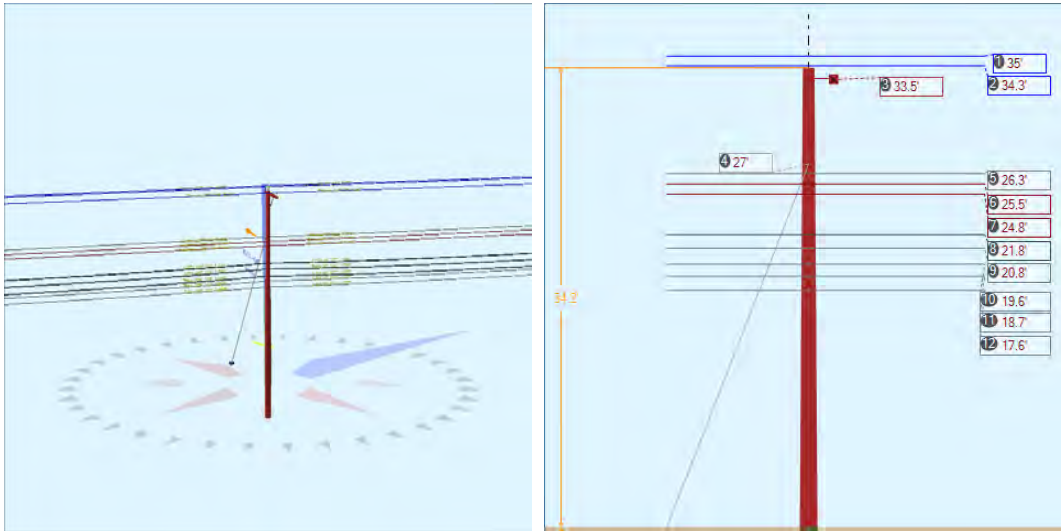
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN) Footage	ROADS
AERIAL (SLACK SPAN) Footage	WORK POINTS
NEW / PROPOSED TRENCH Footage	RAILROADS
EXISTING INHERITED TRENCH Footage	

Pole Num:	63W - NT	Pole Length / Class:	40 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022646 Deg	Longitude:	-84.456415 Deg	Elevation:	881.730368443642		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	16.9	0.0
Groundline	16.9	0.0
Vertical	0.8	19.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,436	300.2
Groundline	20,436	300.2
GL Allowable	124,251	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.0	290.0		0.0	300.0	9.6	120.0
? EHS 3/8 (Down)			27.0	0.0	300.0	15.2	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 300.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	236	24.4	6,968	34.1	5.6	380	479	4	384	5.6
Comms	503	52.1	9,366	45.8	7.5	511	1,073	8	519	7.6
GuyBraces	1	0.1	36	0.2	0.0	2	10	0	2	0.0
Pole	216	22.3	3,781	18.5	3.0	206	2,528	19	225	3.3
Crossarms	1	0.1	41	0.2	0.0	2	95	1	3	0.0
Insulators	9	0.9	244	1.2	0.2	13	106	1	14	0.2
Pole Load	966	100.0	20,436	100.0	16.5	1,115	4,291	32	1,147	16.9
Pole Reserve Capacity			103,815		83.6	5,685			5,653	83.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 300.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	365	37.8	9,745	47.7	7.8	532	748	6	537	7.9
Unknown, COMMUNICATION	384	39.8	6,869	33.6	5.5	375	920	7	382	5.6
Pole	216	22.3	3,781	18.5	3.0	206	2,528	19	225	3.3
<Undefined>	1	0.1	41	0.2	0.0	2	95	1	3	0.0
Totals:	966	100.0	20,436	100.0	16.5	1,115	4,291	32	1,147	16.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	0.00	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	594	0	1,126	1,720
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	0.00	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,440	0	1,099	-341
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	582	-151	1,103	1,533
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,410	-148	1,076	-482
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	582	152	1,103	1,836
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,410	148	1,076	-186

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.30	7.31	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	446	-25	845	1,266
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.30	7.31	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,081	-24	825	-280
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.53	7.36	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	433	-25	820	1,228
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.53	7.36	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,049	-24	800	-273
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	7.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	420	-25	796	1,191
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	7.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,018	-24	777	-265
Totals:											-4,353	-146	11,447	6,948	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	KU, UTILITY	21.76	7.61	1.3300	1.68	0.337	122.7	29.8	122.7	925	160	-61	1,425	1,524
CATV	CATV 1.0	KU, UTILITY	21.76	7.61	1.3300	1.63	0.337	119.7	209.3	119.7	925	-389	-60	1,390	942
Telco	TELE 1.5	Unknown, COMMUNICATION	20.76	7.68	1.5000	1.96	0.900	122.7	29.8	122.7	2,000	331	-108	1,486	1,708
Telco	TELE 1.5	Unknown, COMMUNICATION	20.76	7.68	1.5000	1.90	0.900	119.7	209.3	119.7	2,000	-801	-105	1,449	543
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.75	1.5000	1.96	0.900	122.7	29.8	122.7	2,000	311	-109	1,400	1,602
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.75	1.5000	1.90	0.900	119.7	209.3	119.7	2,000	-755	-106	1,365	504
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.66	7.81	0.6570	1.67	0.190	122.7	29.8	122.7	750	111	-36	772	848
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.66	7.81	0.6570	1.62	0.190	119.7	209.3	119.7	750	-270	-35	754	449
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.62	7.88	0.6570	1.67	0.190	122.7	29.8	122.7	750	105	-36	729	798
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.62	7.88	0.6570	1.62	0.190	119.7	209.3	119.7	750	-255	-35	712	421
Totals:											-1,452	-691	11,482	9,339	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	33.50	6.09	29.8	29.8	50.00	4.50	3.50	96.00	0	41	41
Totals:										0	41	41

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.16	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	45.00	112.1	0.0	6.00	3.50	7.50	-43	43	0
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	-45.00	307.5	0.0	6.00	3.50	7.50	43	43	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.30	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.53	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.77	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	9
Bolt	Three Bolt	KU, UTILITY	21.76	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.76	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.56	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.66	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Totals:										-38	281	243

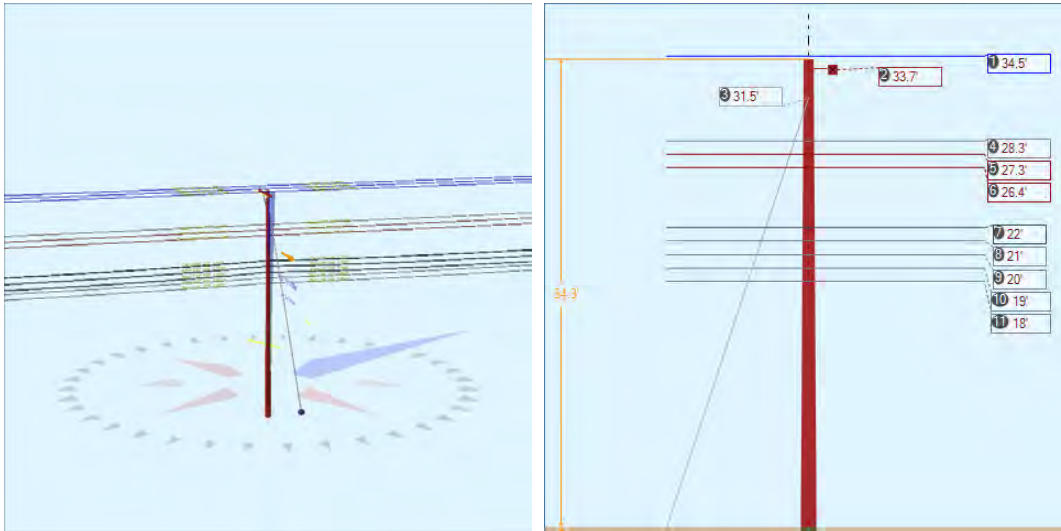
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	27.01	0.00	16.00	0.375	75.00	290.0	59.1	0.273	29.69	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,106	1,914	0	0	0	0	36
Totals:										0	0	0	36

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.00	290.0	20,000	1.00	20,000	1,914	0	9.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.43	32.92	12.23	8.96	8.60	13.08	1.60e+6	60.00	57.00	34.16	542,638	5363.82	125.00

Pole Num:	64W - 28930-2163	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022937 Deg	Longitude:	-84.456227 Deg	Elevation:	884.360812389547		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.7	0.0
Groundline	19.7	0.0
Vertical	1.3	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,219	120.0
Groundline	16,219	120.0
GL Allowable	84,503	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.2	116.5		0.0	119.3	9.2	300.0
? EHS 3/8 (Down)			31.5	0.0	119.3	14.7	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	144	18.2	4,288	26.4	5.1	347	472	5	352	5.2
Comms	451	57.0	8,458	52.2	10.0	685	1,058	10	695	10.2
GuyBraces	1	0.1	35	0.2	0.0	3	11	0	3	0.0
Pole	188	23.8	3,263	20.1	3.9	264	1,918	18	283	4.2
Crossarms	1	0.2	41	0.3	0.1	3	95	1	4	0.1
Insulators	5	0.7	134	0.8	0.2	11	93	1	12	0.2
Pole Load	790	100.0	16,219	100.0	19.2	1,314	3,647	35	1,349	19.8
Pole Reserve Capacity			68,284		80.8	5,486			5,451	80.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	150	19.0	4,484	27.7	5.3	363	529	5	368	5.4
Unknown, COMMUNICATION	451	57.0	8,430	52.0	10.0	683	1,105	11	693	10.2
Pole	188	23.8	3,263	20.1	3.9	264	1,918	18	283	4.2
<Undefined>	1	0.2	41	0.3	0.1	3	95	1	4	0.1
Totals:	790	100.0	16,219	100.0	19.2	1,314	3,647	35	1,349	19.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	5.45	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	0	1,051	-648
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	5.45	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	0	1,110	1,475
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	-143	1,051	-791
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	-151	1,110	1,324
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	144	1,051	-505
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	152	1,110	1,627

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.30	6.53	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,392	-21	861	-552
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.30	6.53	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	299	-22	909	1,187
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.34	6.58	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,345	-21	832	-534
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.34	6.58	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	289	-22	879	1,145
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.37	6.64	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,297	-21	802	-516
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.37	6.64	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	279	-22	847	1,104
Totals:											-7,171	-128	11,614	4,315	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.96	6.91	1.3300	1.57	0.337	116.2	29.0	116.2	925	-469	-53	1,362	839
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.96	6.91	1.3300	1.68	0.337	122.7	209.8	122.7	925	101	-56	1,438	1,483
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.01	6.97	1.5000	1.83	0.900	116.2	29.0	116.2	2,000	-971	-93	1,423	360
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.01	6.97	1.5000	1.96	0.900	122.7	209.8	122.7	2,000	209	-98	1,503	1,614
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.96	7.03	1.5000	1.83	0.900	116.2	29.0	116.2	2,000	-923	-93	1,353	336
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.96	7.03	1.5000	1.96	0.900	122.7	209.8	122.7	2,000	198	-99	1,428	1,528
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.98	7.09	0.6570	1.56	0.190	116.2	29.0	116.2	750	-329	-31	744	384
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.98	7.09	0.6570	1.67	0.190	122.7	209.8	122.7	750	71	-33	786	824
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.15	0.6570	1.56	0.190	116.2	29.0	116.2	750	-313	-31	707	363
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.15	0.6570	1.67	0.190	122.7	209.8	122.7	750	67	-33	746	781
		COMMUNICATION													
Totals:											-2,359	-618	11,490	8,513	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	33.72	5.45	209.4	209.4	50.00	4.50	3.50	96.00	0	41	42
Totals:										0	41	42

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	0.00	209.4	0.0	6.00	3.50	7.50	0	43	43
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	45.00	292.5	0.0	6.00	3.50	7.50	-43	43	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	-45.00	126.3	0.0	6.00	3.50	7.50	43	43	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.30	0.00	299.4	209.4	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.34	0.00	299.4	209.4	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.37	0.00	299.4	209.4	2.00	3.00	3.19	-2	12	10
Bolt	Three Bolt	Unknown, COMMUNICATION	21.96	0.00	299.4	209.4	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.01	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.96	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.98	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.03	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Totals:										-34	168	134

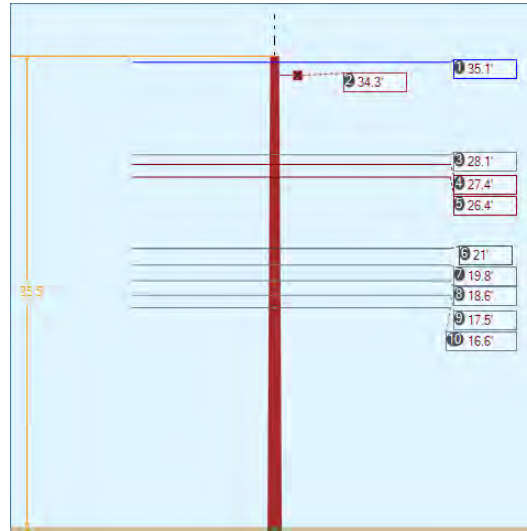
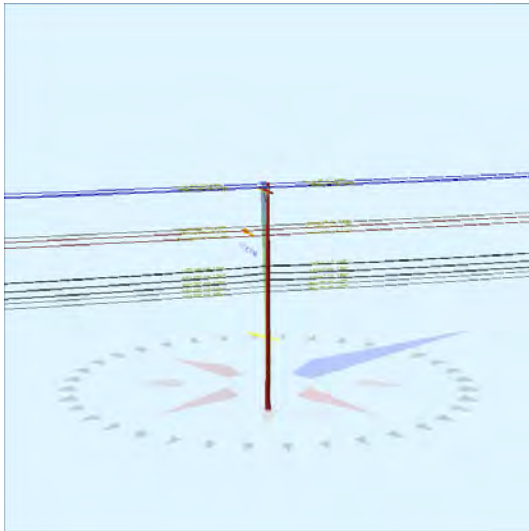
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	31.47	0.00	17.21	0.375	75.00	116.5	61.1	0.273	34.22	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,031	1,846	0	0	0	0	35
Totals:										0	0	0	35

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	17.21	116.5	20,000	1.00	20,000	1,846	0	9.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.25	33.22	10.68	8.36	7.32	11.50	1.60e+6	60.00	57.00	34.30	290,016	2805.47	76.92

Pole Num:	65W - 28930-2157	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.45	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023250 Deg	Longitude:	-84.456018 Deg	Elevation:	883.385342969925		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	58.6	0.0
Groundline	58.6	0.0
Vertical	11.9	20.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	41,169	297.9
Groundline	41,169	297.9
GL Allowable	70,946	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 297.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	743	44.4	23,067	56.0	32.5	2,215	458	5	2,220	32.6
Comms	741	44.3	14,620	35.5	20.6	1,404	1,026	11	1,415	20.8
Pole	182	10.9	3,265	7.9	4.6	313	1,730	19	332	4.9
Crossarms	1	0.1	42	0.1	0.1	4	95	1	5	0.1
Insulators	5	0.3	175	0.4	0.3	17	93	1	18	0.3
Pole Load	1,672	100.0	41,169	100.0	58.0	3,953	3,401	37	3,990	58.7
Pole Reserve Capacity			29,777		42.0	2,847			2,810	41.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 297.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	748	44.7	23,215	56.4	32.7	2,229	503	5	2,234	32.9
Unknown, COMMUNICATION	741	44.3	14,647	35.6	20.7	1,406	1,073	12	1,418	20.9
Pole	182	10.9	3,265	7.9	4.6	313	1,730	19	332	4.9
<Undefined>	1	0.1	42	0.1	0.1	4	95	1	5	0.1
Totals:	1,672	100.0	41,169	100.0	58.0	3,953	3,401	37	3,990	58.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	24.55	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	76	1,062	1,931
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	24.55	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	77	1,068	2,568
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	18.73	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	-57	1,062	1,798
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	18.73	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	-57	1,068	2,434
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	36.37	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	-114	1,062	1,741
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	36.37	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	-115	1,068	2,377
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.09	6.28	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	635	20	849	1,504

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.09	6.28	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,139	20	855	2,013
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.38	6.32	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	619	20	828	1,467
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.38	6.32	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,110	20	833	1,963
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.42	6.38	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	597	20	799	1,416
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.42	6.38	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,071	20	804	1,895
Totals:											11,820	-70	11,357	23,107	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.04	6.69	1.3300	1.56	0.337	115.5	27.3	115.5	925	207	51	1,297	1,554
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.04	6.69	1.3300	1.57	0.337	116.2	209.0	116.2	925	371	51	1,304	1,726
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.78	6.76	1.5000	1.82	0.900	115.5	27.3	115.5	2,000	420	89	1,332	1,841
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.78	6.76	1.5000	1.83	0.900	116.2	209.0	116.2	2,000	754	90	1,340	2,184
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.61	6.83	1.5000	1.82	0.900	115.5	27.3	115.5	2,000	395	90	1,253	1,739
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.61	6.83	1.5000	1.83	0.900	116.2	209.0	116.2	2,000	709	91	1,261	2,061
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.50	6.90	0.6570	1.55	0.190	115.5	27.3	115.5	750	139	30	682	851
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.50	6.90	0.6570	1.56	0.190	116.2	209.0	116.2	750	250	30	686	966
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.57	6.95	0.6570	1.55	0.190	115.5	27.3	115.5	750	132	30	646	808
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.57	6.95	0.6570	1.56	0.190	116.2	209.0	116.2	750	237	30	650	917
		COMMUNICATION													
Totals:											3,613	582	10,450	14,645	

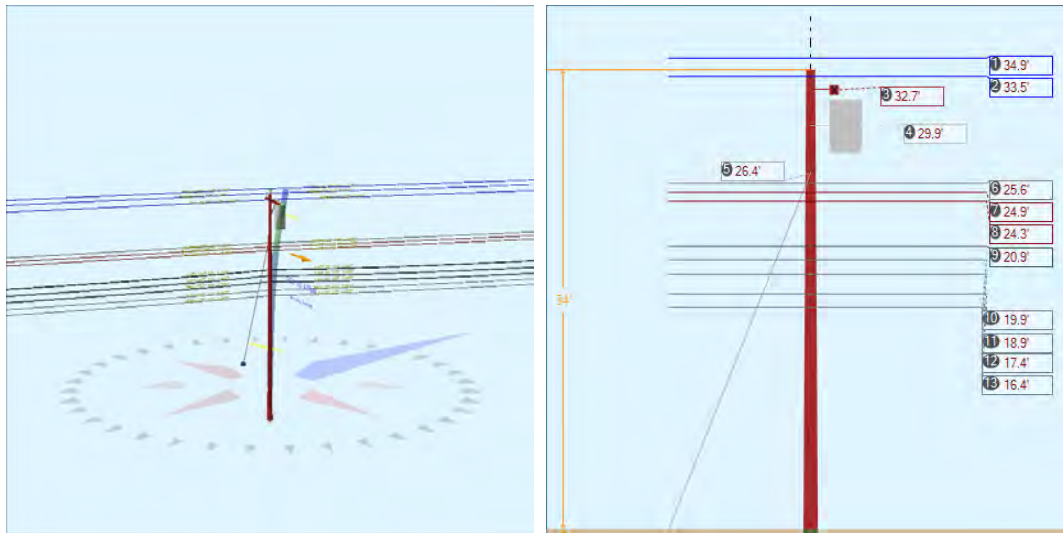
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	34.28	5.17	208.2	208.2	50.00	4.50	3.50	96.00	0	42	42
Totals:										0	42	42

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV KU, UTILITY	34.47	24.00	286.0	0.0	6.00	3.50	7.50	23	44	67	
Pin	Pin Insulator - 5 kV KU, UTILITY	34.47	-18.00	134.2	0.0	6.00	3.50	7.50	-17	44	27	
Pin	Pin Insulator - 5 kV KU, UTILITY	34.47	-36.00	126.3	0.0	6.00	3.50	7.50	-34	44	10	
Spool	Spool Insulator - 25 kV KU, UTILITY	28.09	0.00	298.2	208.2	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.38	0.00	298.2	208.2	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	26.42	0.00	298.2	208.2	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt Unknown, COMMUNICATION	21.04	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	19.78	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.61	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	17.50	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	16.57	0.00	298.2	208.2	5.00	3.00	0.00	6	0	6	
Totals:										5	171	175

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.26	33.28	10.06	13.60	6.69	10.85	1.60e+6	60.00	57.00	35.55	28,498	285.79	8.40

Pole Num:	66W - 28930-2151	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.99	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023519 Deg	Longitude:	-84.455864 Deg	Elevation:	915.900661817411		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.1	26.7
Groundline	11.4	0.0
Vertical	7.3	24.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	5,331	92.1
Groundline	5,152	102.0
GL Allowable	67,470	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.2	297.0		19.1	110.0	19.2	120.0
? EHS 3/8 (Down)			26.4	27.6	110.0	30.5	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 102.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,177	244.2	19,416	376.9	28.8	3,512	497	6	3,518	51.7
Comms	969	200.9	10,615	206.0	15.7	1,920	1,113	12	1,933	28.4
GuyBraces	-1,900	-394.0	-27,922	-542.0	-41.4	-5,051	4,924	55	-4,996	-73.5
PowerEquipments	54	11.3	1,178	22.9	1.8	213	1,216	14	227	3.3
Pole	170	35.3	1,638	31.8	2.4	296	1,619	18	315	4.6
Crossarms	3	0.5	55	1.1	0.1	10	95	1	11	0.2
Insulators	9	1.8	172	3.3	0.3	31	106	1	32	0.5
Pole Load	482	100.0	5,152	100.0	7.6	932	9,570	107	1,039	15.3
Pole Reserve Capacity			62,318		92.4	5,868			5,761	84.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 102.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-660	-136.8	-7,170	-139.2	-10.6	-1,297	6,695	75	-1,222	-18.0
Unknown, COMMUNICATION	969	200.9	10,629	206.3	15.8	1,923	1,161	13	1,936	28.5
Pole	170	35.3	1,638	31.8	2.4	296	1,619	18	315	4.6
<Undefined>	3	0.5	55	1.1	0.1	10	95	1	11	0.2
Totals:	482	100.0	5,152	100.0	7.6	932	9,570	107	1,039	15.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.88	0.00	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	30,225	0	1,161	31,386
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.88	0.00	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-25,547	0	1,010	-24,538
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	29,054	166	1,116	30,337
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-24,558	141	970	-23,446
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	29,054	-155	1,116	30,015

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-24,558	-132	970	-23,719
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.61	6.33	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	22,182	23	852	23,057
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.61	6.33	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-18,749	19	741	-17,989
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.94	6.37	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	21,602	23	830	22,455
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.94	6.37	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-18,259	19	722	-17,518
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.29	6.41	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	21,039	23	808	21,871
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.29	6.41	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-17,783	19	703	-17,061
											Totals:	23,702	147	11,001	34,850

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.94	6.61	1.3300	1.90	0.337	135.9	30.2	135.9	925	7,885	56	1,420	9,362
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.94	6.61	1.3300	1.56	0.337	115.5	207.3	115.5	925	-6,665	48	1,235	-5,382
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.67	1.5000	2.22	0.900	135.9	30.2	136.0	2,000	16,233	99	1,478	17,810
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.67	1.5000	1.82	0.900	115.5	207.3	115.5	2,000	-13,721	84	1,285	-12,352
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.88	6.73	1.5000	2.22	0.900	135.9	30.2	136.0	2,000	15,369	100	1,399	16,869
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.88	6.73	1.5000	1.82	0.900	115.5	207.3	115.5	2,000	-12,991	85	1,217	-11,689
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	6.81	0.6570	1.88	0.190	135.9	30.2	135.9	750	5,316	33	747	6,096
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	6.81	0.6570	1.55	0.190	115.5	207.3	115.5	750	-4,493	28	649	-3,816
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.44	6.87	0.6570	1.88	0.190	135.9	30.2	135.9	750	5,017	33	705	5,755
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.44	6.87	0.6570	1.55	0.190	115.5	207.3	115.5	750	-4,240	28	613	-3,599
		COMMUNICATION													
											Totals:	7,710	596	10,747	19,053

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	29.87	21.58	25.0	25.0	640.00	47.00	--	24.00	--	494	1,622	2,115
Totals:												494	1,622	2,115

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		32.72	5.17	28.8	28.8	50.00	4.50	3.50	96.00	12	86	98	
Totals:												12	86	98

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.01	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157		
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.91	45.00	112.2	0.0	6.00	3.50	7.50	42	42	84		
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.91	-45.00	305.3	0.0	6.00	3.50	7.50	-40	42	2		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.61	0.00	118.8	28.8	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.94	0.00	118.8	28.8	2.00	3.00	3.19	2	11	13		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.29	0.00	118.8	28.8	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	20.94	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.94	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.88	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.42	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	16.44	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Totals:												34	275	309

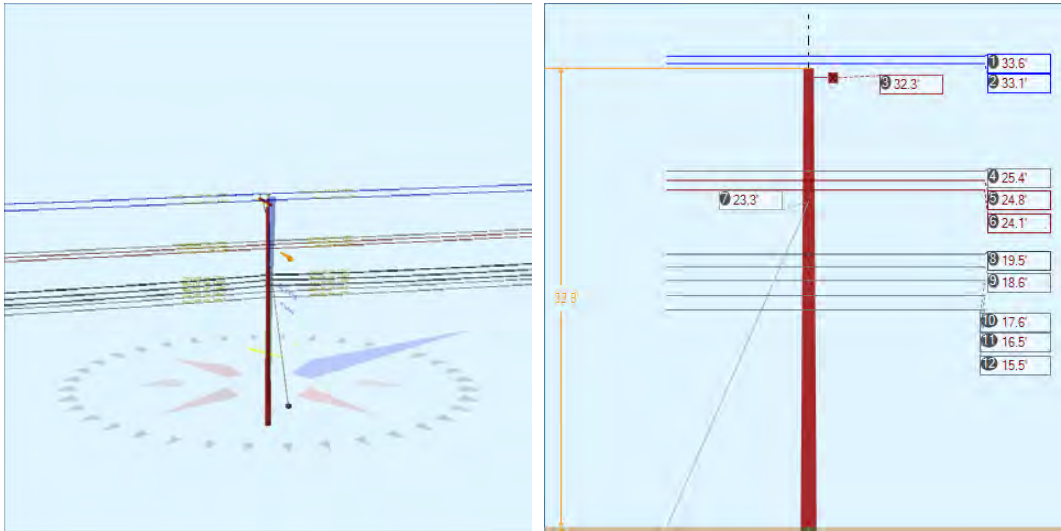
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	26.38	0.00	16.15	0.375	75.00	297.0	58.3	0.273	29.27	0.70

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,222	3,838	3,821	3,252	2,007	-1,938	-50,118
Totals:										3,252	2,007	-1,938	-50,118

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.15	297.0	20,000	1.00	20,000	3,838	3,821	19.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.79	34.08	9.68	14.51	6.69	10.67	1.60e+6	60.00	57.00	34.01	130,476	1310.91	13.70

Pole Num:	67W - 28930-2143	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.23	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023825 Deg	Longitude:	-84.455606 Deg	Elevation:	879.398984248307		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.2	120.0
Groundline	24.2	120.0
Vertical	1.2	300.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,082	120.4
Groundline	19,082	120.4
GL Allowable	80,463	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.5	120.4		0.0	120.0	11.6	300.0
? EHS 3/8 (Down)			23.3	0.0	120.0	18.3	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 120.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	249	25.9	7,098	37.2	8.8	598	495	5	603	8.9
Comms	522	54.4	8,672	45.5	10.8	731	1,109	11	742	10.9
GuyBraces	1	0.1	26	0.1	0.0	2	8	0	2	0.0
Pole	178	18.6	3,010	15.8	3.7	254	1,795	18	272	4.0
Crossarms	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	237	1.2	0.3	20	106	1	21	0.3
Pole Load	959	100.0	19,082	100.0	23.7	1,609	3,608	36	1,645	24.2
Pole Reserve Capacity			61,381		76.3	5,191			5,155	75.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 120.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	258	26.9	7,388	38.7	9.2	623	562	6	628	9.2
Unknown, COMMUNICATION	522	54.4	8,644	45.3	10.7	729	1,156	12	740	10.9
Pole	178	18.6	3,010	15.8	3.7	254	1,795	18	272	4.0
<Undefined>	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Totals:	959	100.0	19,082	100.0	23.7	1,609	3,608	36	1,645	24.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.64	0.00	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,087	0	1,009	-78
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.64	0.00	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	275	0	1,198	1,473
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,070	-141	993	-218
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	270	-168	1,179	1,282
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,070	141	993	64
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	270	168	1,179	1,617

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.61	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-821	-21	762	-80
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.61	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	208	-25	905	1,088
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.65	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-800	-21	742	-78
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.65	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	202	-25	882	1,059
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.08	6.69	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-778	-21	722	-77
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.08	6.69	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	197	-25	857	1,029
Totals:											-4,204	-136	11,422	7,081	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.49	6.97	1.3300	1.55	0.337	114.5	29.7	114.5	925	-274	-52	1,191	865
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.49	6.97	1.3300	1.90	0.337	135.9	210.2	135.9	925	69	-62	1,414	1,421
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.59	7.02	1.5000	1.80	0.900	114.5	29.7	114.5	2,000	-564	-92	1,241	585
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.59	7.02	1.5000	2.23	0.900	135.9	210.2	136.0	2,000	143	-109	1,474	1,508
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.62	7.08	1.5000	1.80	0.900	114.5	29.7	114.5	2,000	-535	-93	1,176	549
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.62	7.08	1.5000	2.23	0.900	135.9	210.2	136.0	2,000	135	-110	1,397	1,422
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.54	7.15	0.6570	1.54	0.190	114.5	29.7	114.5	750	-188	-31	639	420
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.54	7.15	0.6570	1.89	0.190	135.9	210.2	135.9	750	48	-36	759	770
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.53	7.21	0.6570	1.54	0.190	114.5	29.7	114.5	750	-177	-31	600	392
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.53	7.21	0.6570	1.89	0.190	135.9	210.2	135.9	750	45	-37	712	720
		COMMUNICATION													
Totals:											-1,299	-653	10,602	8,651	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	32.29	5.44	209.9	209.9	50.00	4.50	3.50	96.00	0	40	40
Totals:										0	40	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.77	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	45.00	293.0	0.0	6.00	3.50	7.50	-43	42	-1
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	-45.00	126.8	0.0	6.00	3.50	7.50	43	42	84
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.42	0.00	299.9	209.9	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.76	0.00	299.9	209.9	2.00	3.00	3.19	-2	12	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.08	0.00	299.9	209.9	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	19.49	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.59	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.54	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.53	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Totals:										-34	270	236

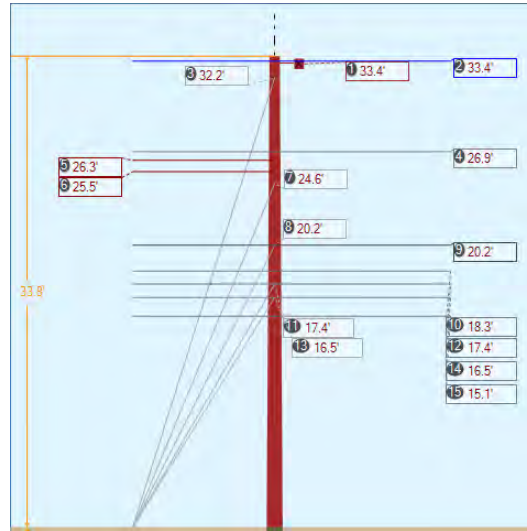
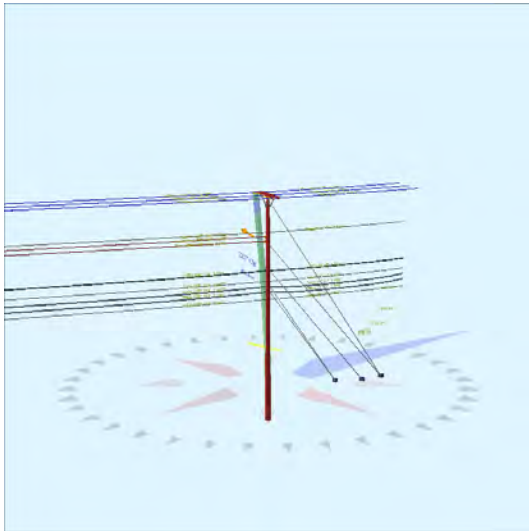
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	23.25	0.00	13.46	0.375	75.00	120.4	59.7	0.273	25.19	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,542	2,310	0	0	0	0	26
Totals:										0	0	0	26

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	13.46	120.4	20,000	1.00	20,000	2,310	0	11.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.10	33.08	10.54	8.08	7.32	11.31	1.60e+6	60.00	57.00	32.77	309,510	3006.40	83.33

Pole Num:	68W - 28930-2141	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.25	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024129 Deg	Longitude:	-84.455415 Deg	Elevation:	893.605450627136		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.7	0.0
Groundline	30.7	0.0
Vertical	19.0	24.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,506	263.8
Groundline	21,506	263.8
GL Allowable	83,051	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.1	28.5		75.8	297.0	78.9	175.0
? EHS 3/8 (Down)			32.2	54.8	297.0	61.8	210.0
? EHS 3/8 (Down)			24.6	54.8	297.0	63.7	140.0
? Single Helix Anchor	17.1	32.2		18.5	297.0	18.5	292.8
? EHS 1/4 (Down)			20.2	61.7	297.0	67.9	292.8
? Single Helix Anchor	12.3	30.5		33.2	297.0	33.3	250.0
? EHS 1/4 (Down)			17.4	55.3	297.0	61.0	260.0
? EHS 1/4 (Down)			16.5	55.8	297.0	61.6	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 263.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,777	350.9	94,703	440.4	114.0	13,650	216	2	13,652	200.8
Comms	4,521	274.6	44,786	208.3	53.9	6,455	628	6	6,462	95.0
GuyBraces	-8,832	-536.4	-119,985	-557.9	-144.5	-17,295	30,759	300	-16,995	-249.9
Pole	155	9.4	1,508	7.0	1.8	217	1,874	18	236	3.5
Crossarms	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Insulators	25	1.5	494	2.3	0.6	71	127	1	72	1.1
Pole Load	1,646	100.0	21,506	100.0	25.9	3,100	33,794	329	3,429	50.4
Pole Reserve Capacity			61,545		74.1	3,700			3,371	49.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 263.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	696	42.3	13,737	63.9	16.5	1,980	18,613	181	2,161	31.8
Unknown, COMMUNICATION	796	48.3	6,260	29.1	7.5	902	13,117	128	1,030	15.2
Pole	155	9.4	1,508	7.0	1.8	217	1,874	18	236	3.5
<Undefined>	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Totals:	1,646	100.0	21,506	100.0	25.9	3,100	33,794	329	3,429	50.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	7.34	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	-1	197	-8,138
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	46.53	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	2	197	-8,136
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	44.64	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	-2	197	-8,140
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	18.17	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	5	764	31,819
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	49.41	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	9	764	31,824
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	47.63	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	-6	764	31,808
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.90	6.58	0.3250	0.01	0.107	27.3	19.1	27.3	150	-2,238	4	158	-2,076
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.90	6.58	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	32,811	15	615	33,442
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.28	6.62	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	32,046	10	601	32,657
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.47	6.66	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	31,064	10	583	31,657
Totals:										161,833	45	4,839	166,717	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.21	6.98	1.3300	0.33	0.337	27.3	19.1	27.3	150	-1,681	11	264	-1,406
CATV	CATV 1.0 Unknown, COMMUNICATION	20.21	6.98	1.3300	1.55	0.337	114.5	207.7	114.5	925	13,537	46	1,025	14,608

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.35	7.10	0.6570	0.31	0.190	27.3	19.1	27.3	150	-1,526	6	152	-1,369
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.35	7.10	0.6570	1.54	0.190	114.5	207.7	114.5	750	9,966	26	589	10,581
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.15	1.5000	0.37	0.900	27.3	19.1	27.4	150	-1,450	19	249	-1,181
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.15	1.5000	1.80	0.900	114.5	207.7	114.5	2,000	25,236	81	966	26,283
Telco	TELE 1.5	Unknown, COMMUNICATION	16.46	7.21	1.5000	0.37	0.900	27.3	19.1	27.4	150	-1,370	20	235	-1,115
Telco	TELE 1.5	Unknown, COMMUNICATION	16.46	7.21	1.5000	1.80	0.900	114.5	207.7	114.5	2,000	23,848	82	913	24,843
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.12	7.29	0.6570	0.31	0.190	27.3	19.1	27.3	150	-1,258	6	125	-1,127
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.12	7.29	0.6570	1.54	0.190	114.5	207.7	114.5	750	8,213	27	485	8,725
Totals:											73,515	325	5,002	78,843	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.39	5.43	203.4	203.4	50.00	4.50	3.50	96.00	0	1	1	
Totals:											0	1	1

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	0.00	203.4	-184.3	3.00	3.80	12.75	-3	132	129
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	45.00	286.5	-184.3	3.00	3.80	12.75	35	132	166
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	-45.00	120.3	-184.3	3.00	3.80	12.75	-40	132	92
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	0.00	203.4	4.3	3.00	3.80	12.75	9	132	141
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	45.00	286.5	4.3	3.00	3.80	12.75	46	132	178
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	-45.00	120.3	4.3	3.00	3.80	12.75	-28	132	104
Spool	Spool Insulator - 25 kV KU, UTILITY	26.90	0.00	293.4	203.4	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV KU, UTILITY	26.28	0.00	207.7	207.7	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV KU, UTILITY	25.47	0.00	207.7	207.7	2.00	3.00	3.19	1	10	11

Bolt	Single Bolt	Unknown, COMMUNICATION	20.21	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	18.35	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	17.42	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	16.46	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	15.12	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Totals:										49	820	869

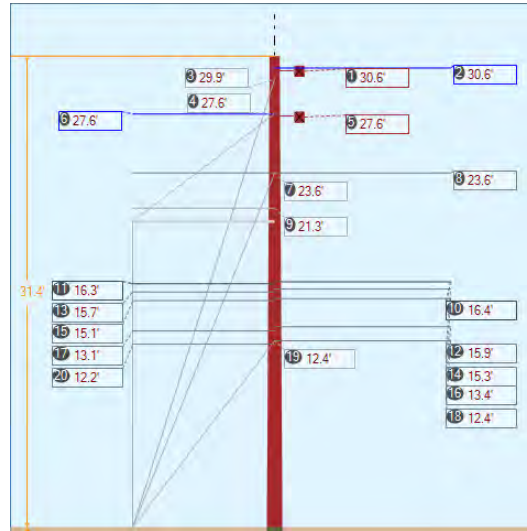
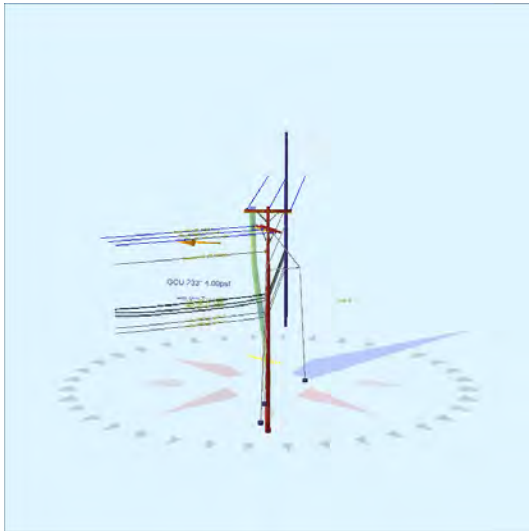
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	32.20	0.00	21.06	0.375	75.00	28.5	56.6	0.273	36.80	1.76
EHS 3/8	Down	KU, UTILITY	24.62	0.00	21.06	0.375	75.00	28.5	49.3	0.273	30.67	1.47
EHS 1/4	Down	Unknown, COMMUNICATION	20.21	0.00	17.08	0.25	75.00	32.2	49.6	0.121	24.72	1.29
EHS 1/4	Down	Unknown, COMMUNICATION	17.42	0.00	12.26	0.25	75.00	30.5	54.7	0.121	19.58	0.92
EHS 1/4	Down	Unknown, COMMUNICATION	16.46	0.00	12.26	0.25	75.00	30.5	53.1	0.121	18.80	0.89

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,559	7,781	7,593	6,340	4,179	-2,376	-75,064
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,829	8,026	7,597	5,759	4,955	-2,818	-68,314
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,063	3,694	3,693	2,813	2,392	-1,484	-29,414
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,648	3,316	3,307	2,698	1,912	-1,141	-19,309
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,686	3,351	3,337	2,670	2,002	-1,195	-19,124
Totals:										20,280	15,440	-9,013	-211,225

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.06	28.5	20,000	1.00	20,000	15,775	15,159	78.9
Single Helix Anchor			18.00	17.08	32.2	20,000	1.00	20,000	3,694	3,693	18.5
Single Helix Anchor			18.00	12.26	30.5	20,000	1.00	20,000	6,667	6,644	33.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.58	33.93	10.41	26.98	7.32	11.43	1.60e+6	60.00	57.00	33.75	178,169	1778.63	5.26

Pole Num:	69W - 28930-2137	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.56	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024186 Deg	Longitude:	-84.455387 Deg	Elevation:	902.239085450167		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	60.3	232.7
Groundline	60.3	232.7
Vertical	28.4	259.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,917	232.7
Groundline	33,917	232.7
GL Allowable	61,940	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.0	138.0		83.9	232.7	85.1	300.0
? EHS 3/8 (Down)			29.9	68.7	232.7	76.1	280.0
? EHS 3/8 (Down)			23.6	52.6	232.7	59.1	320.0
? Single Helix Anchor	7.1	22.0		19.5	232.7	19.5	225.6
? EHS 3/8 (Sidewalk)			27.6	28.1	232.7	31.0	225.6
? Sidewalk Strut	6.0	22.0	20.4	46.6	232.7	46.6	225.6
? Single Helix Anchor	45.2	319.6		0.0	232.7	0.0	0.0
? EHS 3/8 (Span/Head)			21.3	0.0	232.7	0.0	0.0
? Single Helix Anchor	11.5	138.0		24.2	232.7	25.0	350.0
? EHS 1/4 (Down)			12.5	80.8	232.7	91.9	350.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 254.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,788	150.1	89,808	264.8	145.0	14,974	79	1	14,975	220.2
Comms	4,135	129.7	40,884	120.5	66.0	6,817	321	4	6,821	100.3
GuyBraces	-5,944	-186.4	-99,596	-293.7	-160.8	-16,606	29,590	351	-16,256	-239.1
Pole	146	4.6	1,551	4.6	2.5	259	1,443	17	276	4.1
Crossarms	38	1.2	705	2.1	1.1	118	380	5	122	1.8
Insulators	27	0.8	564	1.7	0.9	94	167	2	96	1.4
Pole Load	3,189	100.0	33,917	100.0	54.8	5,655	31,979	379	6,034	88.7
Pole Reserve Capacity			28,023		45.2	1,145			766	11.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 254.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	280	8.8	2,314	6.8	3.7	386	24,332	288	674	9.9
Unknown, COMMUNICATION	2,725	85.5	29,347	86.5	47.4	4,893	5,825	69	4,962	73.0
Pole	146	4.6	1,551	4.6	2.5	259	1,443	17	276	4.1
<Undefined>	38	1.2	705	2.1	1.1	118	380	5	122	1.8
Totals:	3,189	100.0	33,917	100.0	54.8	5,655	31,979	379	6,034	88.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	17.89	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	1	303	27,993
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	48.43	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	3	303	27,995
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	48.43	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	-2	303	27,989
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.64	6.30	0.3250	0.01	0.107	27.3	199.1	27.3	150	2,652	4	70	2,726
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.64	6.30	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	21,357	6	234	21,597
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	18.07	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	1	82	9,367
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	48.49	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	2	82	9,368
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	48.49	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	-1	82	9,365
										Totals:	134,924	15	1,459	136,399	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	16.38	6.72	1.3300	0.56	0.337	45.2	319.6	45.2	925	8,131	8	359	8,498
CATV	CATV 1.0	Unknown, COMMUNICATION	16.25	6.73	1.3300	0.33	0.337	27.3	199.1	27.3	150	1,824	7	107	1,938
Telco	TELE 1.5	Unknown, COMMUNICATION	15.90	6.75	1.5000	0.63	0.900	45.2	319.6	45.2	2,000	17,067	14	381	17,463

Telco	TELE 1.5	Unknown, COMMUNICATION	15.70	6.76	1.5000	0.37	0.900	27.3	199.1	27.4	150	1,762	12	113	1,887
Telco	TELE 1.5	Unknown, COMMUNICATION	15.27	6.79	1.5000	0.63	0.900	45.2	319.6	45.2	2,000	16,385	14	366	16,765
Telco	TELE 1.5	Unknown, COMMUNICATION	15.13	6.80	1.5000	0.37	0.900	27.3	199.1	27.4	150	1,697	12	109	1,819
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.40	6.90	0.6570	0.54	0.190	45.2	319.6	45.2	750	5,391	5	186	5,581
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.11	6.92	0.6570	0.31	0.190	27.3	199.1	27.3	150	1,471	4	55	1,529
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	12.45	6.95	0.6570	0.54	0.190	45.2	319.6	45.2	750	5,009	5	173	5,186
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	12.22	6.97	0.6570	0.31	0.190	27.3	199.1	27.3	150	1,371	4	51	1,427
Totals:											60,107	86	1,900	62,093	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	30.64	5.14	139.0	139.0	50.00	4.50	3.50	96.00	0	123	123	
Normal	Crossarm	27.58	5.32	200.0	200.0	50.00	4.50	3.50	96.00	0	947	947	
Totals:											0	1,071	1,071

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	0.00	319.0	180.0	3.00	3.80	12.75	7	134	142
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	45.00	235.5	180.0	3.00	3.80	12.75	46	134	180
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	-45.00	42.5	180.0	3.00	3.80	12.75	-32	134	103
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.64	0.00	259.3	169.3	2.00	3.00	3.19	2	10	12
Bolt	Single Bolt	Unknown, COMMUNICATION	16.38	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	16.25	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	15.90	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	15.70	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	15.27	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2

Bolt	Single Bolt	Unknown, COMMUNICATION	15.13	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	13.40	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	13.11	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	12.45	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	12.22	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	0.00	200.0	0.0	3.00	3.80	12.75	10	121	131
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	45.00	283.3	0.0	3.00	3.80	12.75	45	121	166
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	-45.00	116.7	0.0	3.00	3.80	12.75	-24	121	97
Totals:										80	777	857

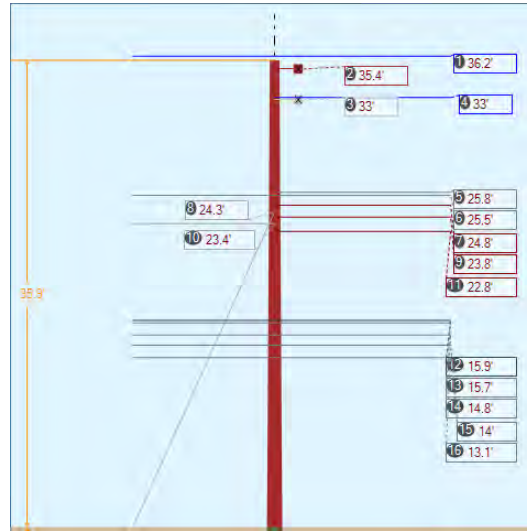
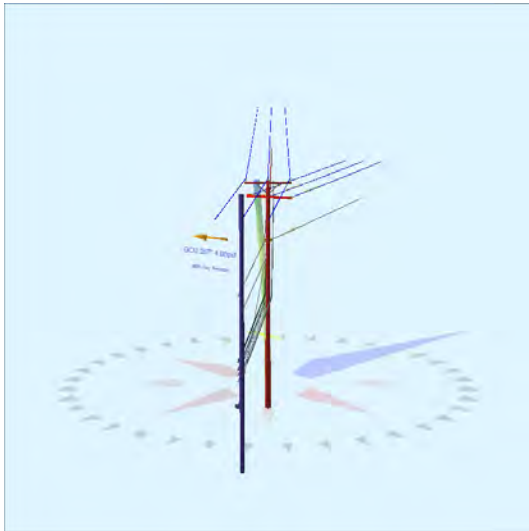
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.91	0.00	21.96	0.375	75.00	138.0	53.5	0.273	35.44	2.13
EHS 3/8	Down	KU, UTILITY	23.64	0.00	21.96	0.375	75.00	138.0	47.0	0.273	30.55	1.40
EHS 3/8	Sidewalk	KU, UTILITY	27.61	0.00	7.10	0.375	75.00	22.0	49.5	0.273	28.12	0.63
EHS 3/8	Span/Head	KU, UTILITY	21.29	21.29	45.19	0.375	75.00	319.6	0.0	0.273	43.36	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	12.45	0.00	11.51	0.25	75.00	138.0	47.1	0.121	15.20	1.04

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,554	9,595	9,527	7,662	5,662	-2,480	-72,997
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,187	7,443	7,289	5,327	4,975	-2,179	-50,797
EHS 3/8	Sidewalk	2.30e+7	15,400	0.90	13,860	700	4,293	3,903	3,899	2,967	2,531	-1,559	-10,152
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	231
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,499	4,999	4,836	3,542	3,293	-1,442	-17,548
Totals:										19,497	16,461	-7,660	-151,264

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.96	138.0	20,000	1.00	20,000	17,010	16,788	85.0
Single Helix Anchor			18.00	7.10	22.0	20,000	1.00	20,000	3,903	3,899	19.5
Single Helix Anchor			18.00	45.19	319.6	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor			18.00	11.51	138.0	20,000	1.00	20,000	4,999	4,836	25.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.98	34.23	9.36	26.44	6.69	10.37	1.60e+6	60.00	57.00	31.45	112,747	1126.04	3.52

Pole Num:	70W - 28930-2135	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.09	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024280 Deg	Longitude:	-84.455504 Deg	Elevation:	920.767840368862		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	61.5	23.3
Groundline	56.0	0.0
Vertical	1.5	20.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,495	307.7
Groundline	48,200	227.0
GL Allowable	88,915	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	14.0	155.5		3.1	257.0	23.4	40.0
? EHS 3/8 (Down)			24.3	4.5	257.0	37.1	40.0
? Single Helix Anchor	45.2	139.6		56.3	257.0	56.6	236.9
? EHS 3/8 (Span/Head)			23.4	81.2	257.0	89.9	236.9
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	480	20.7	14,365	29.8	16.2	1,096	427	4	1,100	16.2
Comms	1,033	44.5	15,666	32.5	17.6	1,195	881	8	1,203	17.7
GuyBraces	621	26.8	14,627	30.4	16.5	1,116	834	8	1,124	16.5
Pole	172	7.4	3,150	6.5	3.5	240	2,053	19	259	3.8
Crossarms	1	0.0	10	0.0	0.0	1	190	2	3	0.0
Insulators	11	0.5	381	0.8	0.4	29	118	1	30	0.4
Pole Load	2,318	100.0	48,200	100.0	54.2	3,678	4,504	42	3,719	54.7
Pole Reserve Capacity			40,715		45.8	3,123			3,081	45.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,113	48.0	29,355	60.9	33.0	2,240	1,331	12	2,252	33.1
Unknown, COMMUNICATION	1,033	44.5	15,684	32.5	17.6	1,197	929	9	1,205	17.7
Pole	172	7.4	3,150	6.5	3.5	240	2,053	19	259	3.8
<Undefined>	1	0.0	10	0.0	0.0	1	190	2	3	0.0
Totals:	2,318	100.0	48,200	100.0	54.2	3,678	4,504	42	3,719	54.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	5.44	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	1	1,141	3,522
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	5.44	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	0	349	3,922
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	-156	1,141	3,366
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	-46	349	3,876
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	157	1,141	3,679
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	46	349	3,968

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	18.34	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	-1	403	-5,725
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	48.59	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	-5	403	-5,728
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	48.59	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	4	403	-5,720
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.76	6.78	0.3250	0.05	0.107	54.6	335.5	54.6	450	-4,777	-8	314	-4,471
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.52	6.79	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	2,515	7	246	2,768
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.52	6.79	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	1,676	24	803	2,503
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.84	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	2,055	1	848	2,904
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.84	6.89	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	1,979	1	817	2,797
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.76	6.96	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	1,889	1	780	2,670
											Totals:	4,817	25	9,488	14,331

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	15.90	7.38	1.3300	0.56	0.337	45.2	139.6	45.2	925	861	22	340	1,223
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	15.90	7.38	1.3300	2.20	0.337	153.9	315.3	153.9	925	574	74	1,110	1,759
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.73	7.39	1.5000	2.60	0.900	153.9	315.3	153.9	2,000	1,227	-130	1,200	2,298
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.73	7.39	1.5000	0.63	0.900	45.2	139.6	45.2	2,000	1,841	-38	368	2,171
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.79	7.45	1.5000	0.63	0.900	45.2	139.6	45.2	2,000	1,731	38	346	2,115
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.79	7.45	1.5000	2.60	0.900	153.9	315.3	153.9	2,000	1,154	131	1,129	2,413
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.00	7.49	0.6570	0.53	0.190	45.2	139.6	45.2	750	614	13	189	816
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.00	7.49	0.6570	2.15	0.190	153.9	315.3	153.9	750	410	43	618	1,070
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	13.05	7.55	0.6570	0.53	0.190	45.2	139.6	45.2	750	573	13	176	762
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.05	7.55	0.6570	2.15	0.190	153.9	315.3	153.9	750	382	43	576	1,001
											Totals:	9,367	209	6,053	15,629

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.42	5.44	315.3	315.3	50.00	4.50	3.50	96.00	1	56	57	
Normal	Crossarm	33.04	5.59	335.5	335.5	50.00	4.50	3.50	96.00	-14	-33	-47	
										Totals:	-13	23	10

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	0.00	315.3	0.0	6.00	3.50	7.50	0	39	40		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	45.00	38.4	0.0	6.00	3.50	7.50	-43	39	-3		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	-45.00	232.2	0.0	6.00	3.50	7.50	43	39	82		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	0.00	335.5	0.0	3.00	3.80	12.75	-3	67	65		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	45.00	58.4	0.0	3.00	3.80	12.75	-23	67	44		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	-45.00	252.6	0.0	3.00	3.80	12.75	18	67	85		
Spool	Spool Insulator - 25 kV KU, UTILITY	25.76	0.00	65.5	335.5	2.00	3.00	3.19	-2	10	8		
Spool	Spool Insulator - 25 kV KU, UTILITY	25.52	0.00	227.5	137.5	2.00	3.00	3.19	2	10	12		
Spool	Spool Insulator - 25 kV KU, UTILITY	24.76	0.00	315.3	315.3	2.00	3.00	3.19	0	10	10		
Spool	Spool Insulator - 25 kV KU, UTILITY	23.84	0.00	315.3	315.3	2.00	3.00	3.19	0	10	10		
Spool	Spool Insulator - 25 kV KU, UTILITY	22.76	0.00	315.3	315.3	2.00	3.00	3.19	0	9	9		
Bolt	Single Bolt Unknown, COMMUNICATION	15.90	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt Unknown, COMMUNICATION	15.73	0.00	45.3	315.3	5.00	3.00	0.00	-6	0	-6		
Bolt	Single Bolt Unknown, COMMUNICATION	14.79	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Single Bolt Unknown, COMMUNICATION	14.00	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Single Bolt Unknown, COMMUNICATION	13.05	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
										Totals:	10	370	380

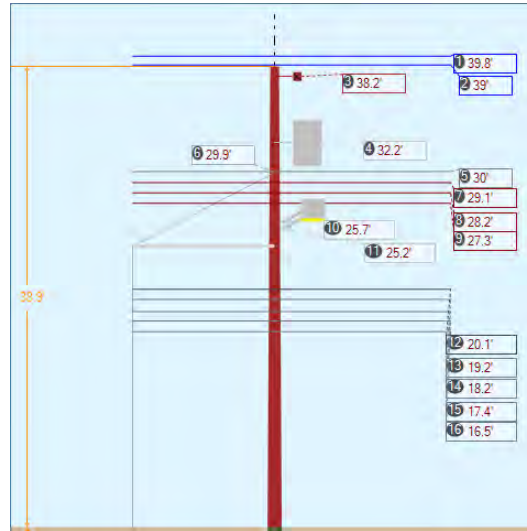
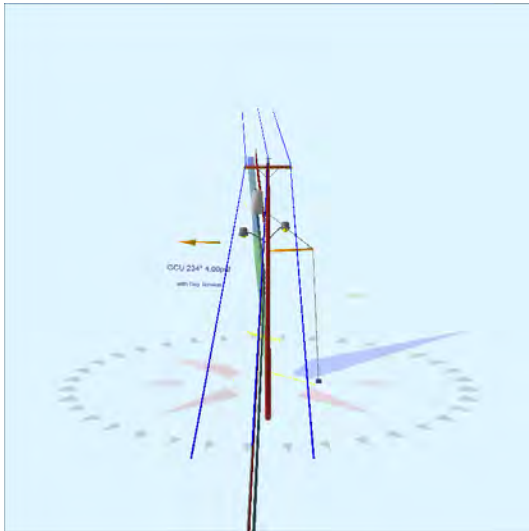
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	24.29	0.00	14.00	0.375	75.00	155.5	59.8	0.273	26.36	0.10
EHS 3/8	Span/Head	KU, UTILITY	23.35	23.35	45.19	0.375	75.00	139.6	0.0	0.273	43.32	3.07

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,142	4,675	623	539	313	99	2,518
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	12,455	11,323	11,259	0	11,259	507	12,074
Totals:										539	11,572	606	14,593

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	14.00	155.5	20,000	1.00	20,000	4,675	623	23.4
Single Helix Anchor			18.00	45.19	139.6	20,000	1.00	20,000	11,323	11,259	56.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.37	33.18	10.87	9.30	7.32	11.70	1.60e+6	60.00	57.00	35.91	307,964	3002.40	66.67

Pole Num:	71W - 28930-2129	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.09	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.47	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024577 Deg	Longitude:	-84.455875 Deg	Elevation:	914.843628308852		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.8	0.0
Groundline	34.8	0.0
Vertical	4.7	26.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	31,805	239.2
Groundline	31,805	239.2
GL Allowable	94,360	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	9.2	30.7		16.4	234.1	16.7	220.0
? EHS 3/8 (Sidewalk)			30.0	23.7	234.1	26.5	220.0
? Sidewalk Strut	8.0	30.7	23.8	99.7	234.1	101.2	220.0
System Capacity Summary:				Inadequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 239.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	922	41.9	21,527	67.7	22.8	2,195	537	5	2,200	32.3
Comms	827	37.6	11,310	35.6	12.0	1,153	1,146	10	1,163	17.1
GuyBraces	128	5.8	-7,875	-24.8	-8.4	-803	3,050	27	-776	-11.4
PowerEquipments	55	2.5	2,735	8.6	2.9	279	1,216	11	290	4.3
Pole	218	9.9	3,004	9.4	3.2	306	2,283	20	327	4.8
Crossarms	3	0.1	62	0.2	0.1	6	95	1	7	0.1
Streetlights	40	1.8	784	2.5	0.8	80	171	2	81	1.2
Insulators	9	0.4	258	0.8	0.3	26	110	1	27	0.4
Pole Load	2,199	100.0	31,805	100.0	33.7	3,243	8,608	77	3,320	48.8
Pole Reserve Capacity			62,555		66.3	3,557			3,480	51.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 239.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,152	52.4	17,409	54.7	18.5	1,775	5,036	45	1,820	26.8
Unknown, COMMUNICATION	827	37.6	11,330	35.6	12.0	1,155	1,194	11	1,166	17.1
Pole	218	9.9	3,004	9.4	3.2	306	2,283	20	327	4.8
<Undefined>	3	0.1	62	0.2	0.1	6	95	1	7	0.1
Totals:	2,199	100.0	31,805	100.0	33.7	3,243	8,608	77	3,320	48.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	0.00	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,892	0	1,414	-19,478
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	0.00	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	23,392	0	953	24,345
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,501	146	1,387	-18,967
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	22,954	100	935	23,989

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,501	-156	1,387	-19,270
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	22,954	-107	935	23,783
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.02	6.69	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-15,759	22	1,066	-14,670
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.02	6.69	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	17,644	15	719	18,379
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.74	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-19,308	28	1,125	-18,155
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.74	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	21,619	19	759	22,396
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.79	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-18,737	28	1,092	-17,617
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.79	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	20,979	19	736	21,735
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.35	6.84	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-18,142	28	1,057	-17,056
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.35	6.84	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	20,313	19	713	21,045
Totals:											16,016	162	14,280	30,457	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.10	7.27	1.3300	2.22	0.337	153.9	135.3	153.9	925	-5,795	71	1,584	-4,140
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.10	7.27	1.3300	1.40	0.337	105.1	313.6	105.1	925	6,489	49	1,068	7,605
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.24	7.32	1.5000	2.61	0.900	153.9	135.3	153.9	2,000	-11,996	125	1,657	-10,215
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.24	7.32	1.5000	1.62	0.900	105.1	313.6	105.1	2,000	13,432	85	1,117	14,634
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.22	7.38	1.5000	2.61	0.900	153.9	135.3	153.9	2,000	-11,361	126	1,569	-9,666
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.22	7.38	1.5000	1.62	0.900	105.1	313.6	105.1	2,000	12,721	86	1,058	13,865
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	7.43	0.6570	2.19	0.190	153.9	135.3	153.9	750	-4,073	41	868	-3,164
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	7.43	0.6570	1.38	0.190	105.1	313.6	105.1	750	4,560	28	585	5,174
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.52	7.49	0.6570	2.19	0.190	153.9	135.3	153.9	750	-3,862	42	823	-2,997
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.52	7.49	0.6570	1.38	0.190	105.1	313.6	105.1	750	4,324	28	555	4,907
Totals:												4,438	681	10,883	16,002

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	32.19	22.06	220.0	220.0	640.00	47.00	--	24.00	--	2,111	1,758	3,869
Totals:												2,111	1,758	3,869

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	38.23	5.45	134.5	134.5	50.00	4.50	3.50	96.00	-11	99	88		
Totals:												-11	99	88

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	25.72	4.44	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-123	508	385
General	Streetlight - 3 ft. Arm	KU, UTILITY	25.19	4.47	220.0	220.0	45.00	24.00	20.00	3.00	36.00	226	498	724
Totals:												104	1,006	1,109

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.91	0.00	0.0	0.0	13.00	9.00	10.50	0	180	180
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.41	45.00	217.5	0.0	6.00	3.50	7.50	40	49	89
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.41	-45.00	51.4	0.0	6.00	3.50	7.50	-43	49	6
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.02	0.00	224.5	134.5	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.11	0.00	224.5	134.5	2.00	3.00	3.19	2	13	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.25	0.00	224.5	134.5	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.35	0.00	224.5	134.5	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	20.10	0.00	225.3	135.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.24	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.22	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	17.42	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.52	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Totals:										34	331	365

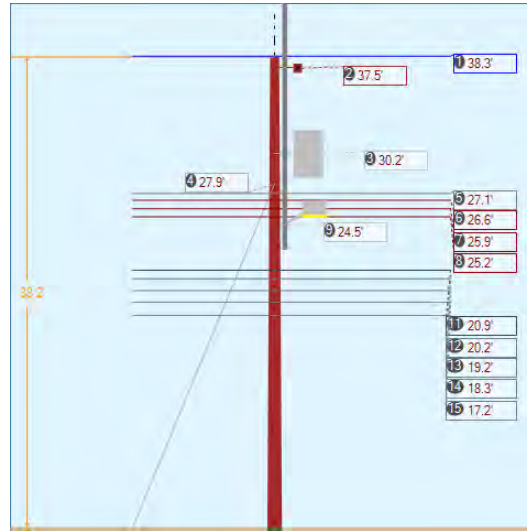
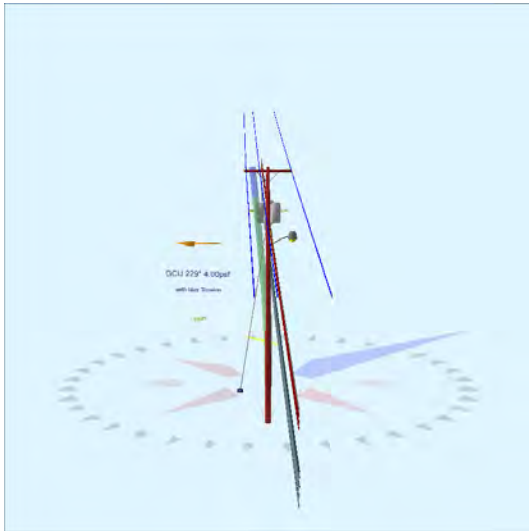
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Sidewalk	KU, UTILITY	29.95	0.00	9.18	0.375	75.00	30.7	37.3	0.273	32.13	0.53

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8 Sidewalk	2.30e+7	15,400	0.90	13,860	700	3,670	3,336	3,289	1,991	2,617	-2,301	-11,142	
Totals:										1,991	2,617	-2,301	-11,142

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.18	30.7	20,000	1.00	20,000	3,336	3,289	16.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.28	33.91	10.87	14.27	7.32	11.93	1.60e+6	60.00	57.00	38.91	185,035	1831.54	21.28

Pole Num:	72W - 28930-2119	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.80	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.20	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024776 Deg	Longitude:	-84.456110 Deg	Elevation:	912.909039302674		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	228.6
Groundline	0.0	228.6
Vertical	24.8	6.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,575	234.0
Groundline	28,575	234.0
GL Allowable	92,389	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	6.1	186.7		0.0	228.6	17.8	30.0
? EHS 3/8 (Down)			27.9	0.0	228.6	28.2	30.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 234.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	314	25.8	9,754	34.1	10.6	719	451	4	723	10.6
Comms	478	39.3	8,692	30.4	9.4	641	963	9	649	9.6
GuyBraces	4	0.4	120	0.4	0.1	9	9	0	9	0.1
PowerEquipments	138	11.3	4,770	16.7	5.2	352	2,603	24	375	5.5
Pole	213	17.5	4,075	14.3	4.4	300	2,221	20	321	4.7
Crossarms	2	0.1	72	0.3	0.1	5	95	1	6	0.1
Streetlights	20	1.6	245	0.9	0.3	18	86	1	19	0.3
Risers	42	3.5	672	2.4	0.7	50	46	0	50	0.7
Insulators	6	0.5	175	0.6	0.2	13	97	1	14	0.2
Pole Load	1,216	100.0	28,575	100.0	30.9	2,106	6,571	60	2,166	31.9
Pole Reserve Capacity			63,814		69.1	4,694			4,634	68.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 234.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	524	43.1	15,764	55.2	17.1	1,162	3,244	29	1,191	17.5
Unknown, COMMUNICATION	478	39.3	8,664	30.3	9.4	639	1,011	9	648	9.5
Pole	213	17.5	4,075	14.3	4.4	300	2,221	20	321	4.7
<Undefined>	2	0.1	72	0.3	0.1	5	95	1	6	0.1
Totals:	1,216	100.0	28,575	100.0	30.9	2,106	6,571	60	2,166	31.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	18.81	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	44	948	-14,189
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	18.81	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	48	1,017	15,958
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	-103	948	-14,336
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	-110	1,017	15,800

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	107	948	-14,126
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	115	1,017	16,026
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.13	6.82	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-10,758	-16	672	-10,102
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.13	6.82	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	10,554	-17	721	11,258
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.56	6.85	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-13,309	-19	716	-12,612
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.56	6.85	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	13,057	-21	768	13,804
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.87	6.89	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-12,966	-20	698	-12,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.87	6.89	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	12,720	-21	748	13,447
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.22	6.93	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-12,637	-20	680	-11,977
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.22	6.93	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	12,397	-21	729	13,105
Totals:											-1,805	-53	11,626	9,768	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.87	7.19	1.3300	1.40	0.337	105.1	133.6	105.1	925	-4,547	-49	1,147	-3,449
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.87	7.19	1.3300	1.52	0.337	112.6	313.8	112.6	925	4,460	-52	1,230	5,638
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	7.23	1.5000	1.62	0.900	105.1	133.6	105.1	2,000	-9,507	-85	1,212	-8,380
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	7.23	1.5000	1.76	0.900	112.6	313.8	112.6	2,000	9,326	-91	1,300	10,535
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.23	7.28	1.5000	1.62	0.900	105.1	133.6	105.1	2,000	-9,058	-86	1,155	-7,989
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.23	7.28	1.5000	1.76	0.900	112.6	313.8	112.6	2,000	8,886	-92	1,238	10,032
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.27	7.34	0.6570	1.39	0.190	105.1	133.6	105.1	750	-3,227	-28	635	-2,621
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.27	7.34	0.6570	1.50	0.190	112.6	313.8	112.6	750	3,166	-30	681	3,817
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.22	7.40	0.6570	1.39	0.190	105.1	133.6	105.1	750	-3,041	-29	598	-2,471
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.22	7.40	0.6570	1.50	0.190	112.6	313.8	112.6	750	2,983	-31	641	3,594
Totals:												-557	-574	9,836	8,705

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.18	22.14	315.0	315.0	640.00	47.00	--	24.00	--	352	1,647	2,000
Transformer	1PH-25KVA	KU, UTILITY	30.18	21.14	315.0	315.0	365.00	39.00	--	22.00	--	271	2,506	2,777
Totals:												624	4,154	4,777

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	37.46	5.45	313.7	313.7	50.00	4.50	3.50	96.00	8	64	72		
Totals:												8	64	72

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	24.52	4.47	50.0	50.0	45.00	24.00	20.00	3.00	36.00	-239	484	245
Totals:												-239	484	245

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	24.20	6.09	360.0	360.0	24.20	290.45	4.00	4.00	290.45	-7	680	673
Totals:												-7	680	673

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	-18.00	240.6	0.0	6.00	3.50	7.50	18	48	66
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	45.00	36.8	0.0	6.00	3.50	7.50	-41	48	7
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	-45.00	230.6	0.0	6.00	3.50	7.50	43	48	91
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.13	0.00	43.7	313.7	2.00	3.00	3.19	-2	13	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.56	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.87	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.22	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10

Bolt	Three Bolt	Unknown, COMMUNICATION	20.87	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.19	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.23	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.27	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.22	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Totals:										-17	192	175

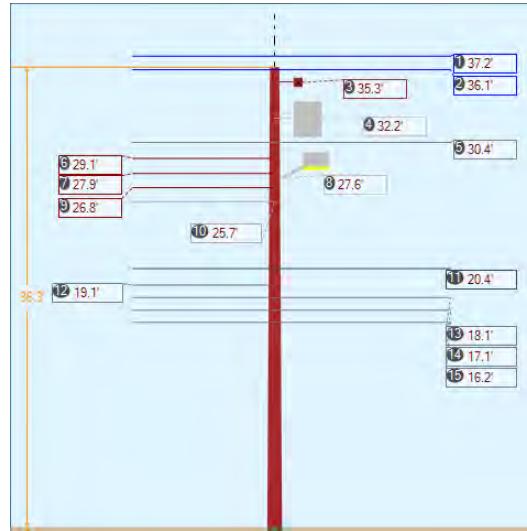
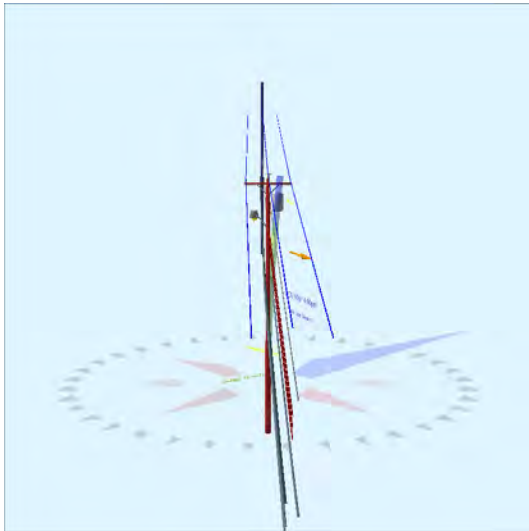
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	27.90	0.00	6.10	0.375	75.00	186.7	77.4	0.273	26.99	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,908	3,553	0	0	0	0	121
Totals:										0	0	0	121

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	6.10	186.7	20,000	1.00	20,000	3,553	0	17.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.81	33.72	10.85	12.18	7.32	11.85	1.60e+6	60.00	57.00	38.20	206,127	2053.39	31.25

Pole Num:	73W - 28930-2115	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.68	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025024 Deg	Longitude:	-84.456404 Deg	Elevation:	924.211746379987		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	55.7	25.7
Groundline	44.9	0.0
Vertical	1.8	134.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,285	124.8
Groundline	28,411	95.7
GL Allowable	87,276	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.4	314.3		51.6	108.6	51.7	130.0
? EHS 3/8 (Span/Head)			25.7	74.4	108.6	82.1	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 95.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,663	608.8	187,545	660.1	214.9	14,573	370	3	14,576	214.4
Comms	2,209	201.8	41,973	147.7	48.1	3,261	884	8	3,270	48.1
GuyBraces	-8,060	-736.5	-207,794	-731.4	-238.1	-16,146	29	0	-16,146	-237.4
PowerEquipments	35	3.2	1,687	5.9	1.9	131	636	6	137	2.0
Pole	196	17.9	3,591	12.6	4.1	279	2,060	19	298	4.4
Crossarms	24	2.2	820	2.9	0.9	64	95	1	65	0.9
Streetlights	19	1.8	297	1.0	0.3	23	86	1	24	0.4
Insulators	9	0.8	293	1.0	0.3	23	110	1	24	0.4
Pole Load	1,094	100.0	28,411	100.0	32.6	2,208	4,272	40	2,248	33.1
Pole Reserve Capacity			58,865		67.4	4,592			4,552	66.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 95.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-1,334	-121.9	-17,962	-63.2	-20.6	-1,396	1,184	11	-1,384	-20.4
Unknown, COMMUNICATION	2,209	201.8	41,962	147.7	48.1	3,261	932	9	3,269	48.1
Pole	196	17.9	3,591	12.6	4.1	279	2,060	19	298	4.4
<Undefined>	24	2.2	820	2.9	0.9	64	95	1	65	0.9
Totals:	1,094	100.0	28,411	100.0	32.6	2,208	4,272	40	2,248	33.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.20	0.00	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-63,659	0	306	-63,353
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.20	0.00	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	64,100	0	265	64,365
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	62,236	60	257	62,554
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-61,808	67	297	-61,443

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	62,236	-82	257	62,412
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-61,808	-92	297	-61,603
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.38	6.51	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	52,334	10	216	52,560
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.38	6.51	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-51,973	12	250	-51,712
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.12	6.59	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	63,391	16	226	63,632
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.93	6.66	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	60,797	16	216	61,029
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.81	6.72	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	58,369	16	208	58,593
Totals:											184,214	24	2,796	187,034	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.43	7.10	1.3300	1.50	0.337	112.6	133.8	112.6	925	19,330	-33	323	19,620
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.43	7.10	1.3300	1.72	0.337	126.4	314.3	126.4	925	-19,197	-36	373	-18,861
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.11	7.18	1.5000	1.75	0.900	112.6	133.8	112.6	2,000	39,093	57	330	39,480
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.14	7.24	1.5000	1.75	0.900	112.6	133.8	112.6	2,000	37,117	-58	313	37,372
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.14	7.24	1.5000	2.02	0.900	126.4	314.3	126.4	2,000	-36,861	-65	362	-36,564
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.14	7.30	0.6570	1.44	0.190	112.6	133.8	112.6	750	13,149	-19	171	13,301
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.14	7.30	0.6570	1.65	0.190	126.4	314.3	126.4	750	-13,058	-21	198	-12,882
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.18	7.35	0.6570	1.44	0.190	112.6	133.8	112.6	750	12,412	-19	162	12,554
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.18	7.35	0.6570	1.65	0.190	126.4	314.3	126.4	750	-12,326	-22	187	-12,161
		COMMUNICATION													
Totals:											39,657	-216	2,417	41,858	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Transformer	1PH-15KVA	KU, UTILITY	32.16	20.91	35.0	35.0	335.00	34.00	--	22.00	--	543	1,140	1,683
Totals:												543	1,140	1,683

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		35.30	5.47	314.0	314.0	50.00	4.50	3.50	96.00	-34	852	818	
Totals:											-34	852	818

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	27.59	4.18	280.0	280.0	45.00	24.00	20.00	3.00	36.00	-238	533	296
Totals:											-238	533	296

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.32	0.00	0.0	0.0	13.00	9.00	10.50	0	165	165
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.49	45.00	37.1	0.0	6.00	3.50	7.50	22	44	67
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.49	-45.00	231.0	0.0	6.00	3.50	7.50	-31	44	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.38	0.00	44.0	314.0	2.00	3.00	3.19	1	14	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.12	0.00	133.8	133.8	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.93	0.00	133.8	133.8	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.81	0.00	133.8	133.8	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	20.43	0.00	224.0	314.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	19.11	0.00	43.8	133.8	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	18.14	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	17.14	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	16.18	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4
Totals:										-13	305	292

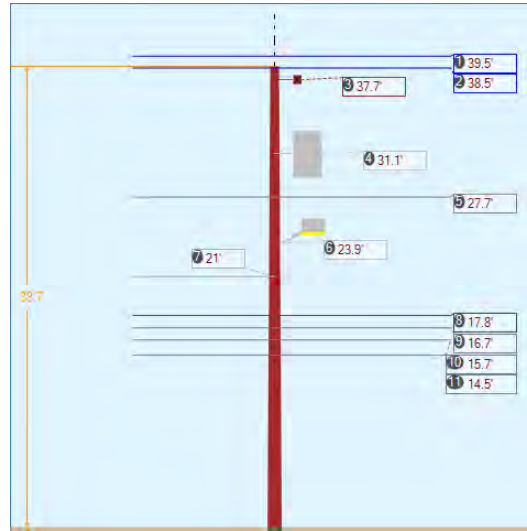
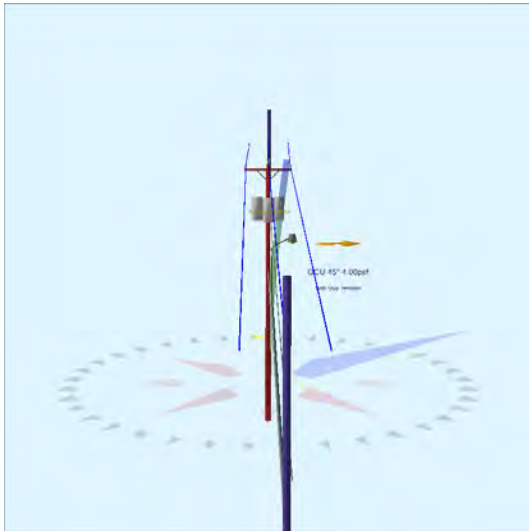
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.71	25.71	126.35	0.375	75.00	314.3	0.0	0.273	124.49	8.09

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	11,376	10,342	10,317	0	10,317	-8,068	-207,228
Totals:									0	10,317	-8,068	-207,228

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	126.35	314.3	20,000	1.00	20,000	10,342	10,317	51.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.44	33.43	10.73	9.46	7.32	11.63	1.60e+6	60.00	57.00	36.32	240,941	2373.07	55.56

Pole Num:	74W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.37	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025242 Deg	Longitude:	-84.456705 Deg	Elevation:	919.426969304131		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	44.8
Groundline	0.0	44.8
Vertical	26.3	224.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	43.0	44.8
Groundline	43.0	44.8
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.4	134.2		0.0	44.8	1.9	310.0
? EHS 3/8 (Span/Head)			21.0	0.0	44.8	3.0	310.0
? Single Helix Anchor	36.3	315.2		0.7	44.8	3.7	140.0
? EHS 3/8 (Span/Head)			21.0	1.0	44.8	5.9	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	294	26.0	10,666	37.1	11.4	772	176	2	774	11.4
Comms	382	33.7	6,597	22.9	7.0	478	497	4	482	7.1
GuyBraces	47	4.1	988	3.4	1.1	72	38	0	72	1.1
PowerEquipments	164	14.5	5,243	18.2	5.6	380	3,648	33	412	6.1
Pole	217	19.1	4,216	14.7	4.5	305	2,261	20	326	4.8
Crossarms	1	0.1	48	0.2	0.1	3	95	1	4	0.1
Streetlights	20	1.8	713	2.5	0.8	52	86	1	52	0.8
Insulators	8	0.7	316	1.1	0.3	23	89	1	24	0.3
Pole Load	1,132	100.0	28,788	100.0	30.7	2,084	6,890	62	2,146	31.6
Pole Reserve Capacity			64,853		69.3	4,716			4,654	68.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	533	47.1	17,903	62.2	19.1	1,296	3,999	36	1,332	19.6
Unknown, COMMUNICATION	382	33.7	6,621	23.0	7.1	479	535	5	484	7.1
Pole	217	19.1	4,216	14.7	4.5	305	2,261	20	326	4.8
<Undefined>	1	0.1	48	0.2	0.1	3	95	1	4	0.1
Totals:	1,132	100.0	28,788	100.0	30.7	2,084	6,890	62	2,146	31.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.53	0.00	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-2,033	0	1,202	-831
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.53	0.00	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,392	0	345	3,737
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,981	129	1,171	-681
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,305	37	336	3,679

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,981	-128	1,171	-938
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,305	-37	336	3,605
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.72	6.81	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,425	19	842	-563
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.72	6.81	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	2,378	6	242	2,625
Totals:											4,960	26	5,647	10,634	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.78	7.40	1.3300	1.74	0.337	126.4	134.3	126.4	925	-502	61	1,199	758
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.78	7.40	1.3300	0.45	0.337	36.3	315.2	36.3	925	838	18	344	1,200
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.74	7.46	1.5000	2.03	0.900	126.4	134.3	126.4	2,000	-1,022	108	1,233	319
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.74	7.46	1.5000	0.50	0.900	36.3	315.2	36.3	2,000	1,705	31	354	2,091
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.72	7.52	0.6570	1.73	0.190	126.4	134.3	126.4	750	-360	35	670	346
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.72	7.52	0.6570	0.42	0.190	36.3	315.2	36.3	750	601	10	193	803
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.46	7.59	0.6570	1.73	0.190	126.4	134.3	126.4	750	-331	36	616	321
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.46	7.59	0.6570	0.42	0.190	36.3	315.2	36.3	750	552	10	177	740
		COMMUNICATION													
Totals:											1,481	309	4,787	6,577	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	31.09	22.11	130.0	130.0	640.00	47.00	--	24.00	--	115	5,112	5,227
Totals:											115	5,112	5,227	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		37.71	5.47	314.7	314.7	50.00	4.50	3.50	96.00	1	46	47
Totals:											1	46	47

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.87	4.54	35.0	35.0	45.00	24.00	20.00	3.00	36.00	238	473	711
Totals:												238	473	711

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.65	0.00	0.0	0.0	13.00	9.00	10.50	0	179	179	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.89	45.00	37.8	0.0	6.00	3.50	7.50	43	48	91	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.89	-45.00	231.7	0.0	6.00	3.50	7.50	-43	48	6	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.72	0.00	44.7	314.7	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.78	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.74	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.72	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.46	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Totals:											26	289	316

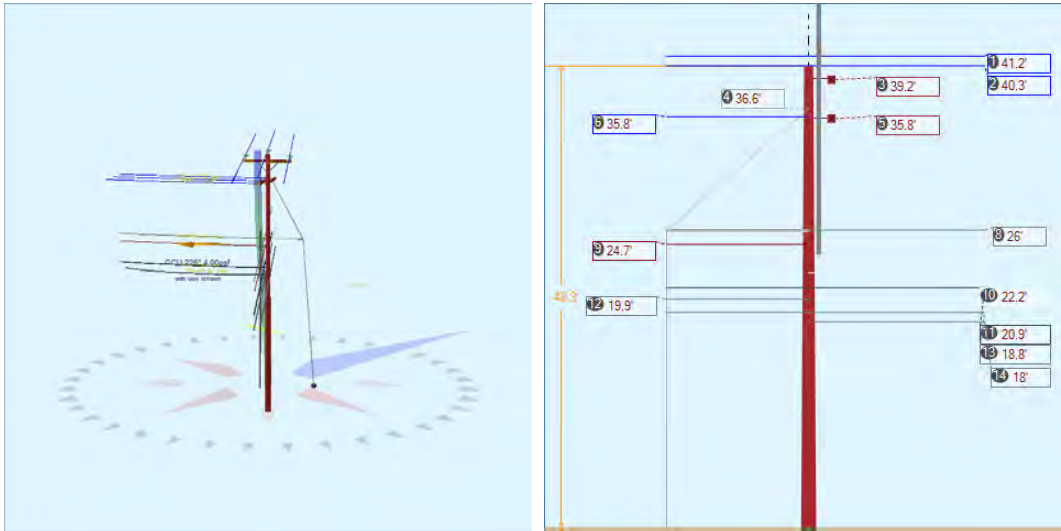
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	21.04	21.04	126.35	0.375	75.00	134.2	0.0	0.273	124.46	0.00
EHS 3/8	Span/Head	KU, UTILITY	21.04	21.04	36.32	0.375	75.00	315.2	0.0	0.273	34.43	0.03

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	420	382	0	0	0	0	675	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	815	741	140	0	140	6	310	
Totals:											0	140	6	985

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	126.35	134.2	20,000	1.00	20,000	382	0	1.9
Single Helix Anchor			18.00	36.32	315.2	20,000	1.00	20,000	741	140	3.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.35	33.93	10.84	12.82	7.32	11.90	1.60e+6	60.00	57.00	38.65	181,860	1813.05	26.32

Pole Num:	75W - 28930-2111	Pole Length / Class:	45 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.72	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.01	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025322 Deg	Longitude:	-84.456783 Deg	Elevation:	923.358725241214		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.8	0.0
Groundline	23.8	0.0
Vertical	3.8	29.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,392	222.7
Groundline	28,392	222.7
GL Allowable	123,745	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	8.0	50.0		14.2	225.6	14.2	231.2
? EHS 3/8 (Sidewalk)			36.6	20.4	225.6	22.5	231.2
? Sidewalk Strut	6.0	50.0	25.9	47.7	225.6	47.8	231.2
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 222.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,198	66.2	29,342	103.4	23.7	2,037	125	1	2,038	30.0
Comms	329	18.2	5,367	18.9	4.3	373	325	2	375	5.5
GuyBraces	-78	-4.3	-13,233	-46.6	-10.7	-919	3,723	28	-891	-13.1
Pole	247	13.6	3,917	13.8	3.2	272	2,819	21	293	4.3
Crossarms	66	3.6	1,881	6.6	1.5	131	285	2	133	2.0
Risers	28	1.5	431	1.5	0.4	30	52	0	30	0.4
Insulators	22	1.2	688	2.4	0.6	48	146	1	49	0.7
Pole Load	1,811	100.0	28,392	100.0	22.9	1,971	7,476	56	2,027	29.8
Pole Reserve Capacity			95,353		77.1	4,829			4,773	70.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 222.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,170	64.6	17,221	60.7	13.9	1,196	3,999	30	1,226	18.0
Unknown, COMMUNICATION	329	18.2	5,373	18.9	4.3	373	373	3	376	5.5
Pole	247	13.6	3,917	13.8	3.2	272	2,819	21	293	4.3
<Undefined>	66	3.6	1,881	6.6	1.5	131	285	2	133	2.0
Totals:	1,811	100.0	28,392	100.0	22.9	1,971	7,476	56	2,027	29.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	41.16	0.00	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	7,055	0	367	7,422
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	41.16	0.00	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-7,055	0	359	-6,696
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	18.76	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	2	10	6,796
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	48.75	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	0	10	6,794
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	48.75	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	1	10	6,795

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	4,448	6	232	4,685
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.01	0.107	25.9	236.7	25.9	150	4,911	4	8	4,923
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-4,448	6	226	-4,216
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.71	7.46	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	4,234	5	220	4,459
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.71	7.46	0.3250	0.01	0.107	25.9	236.7	25.9	150	4,675	4	7	4,685
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	6,910	38	360	7,308
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-6,910	37	351	-6,522
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	6,910	-37	360	7,234
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-6,910	-36	351	-6,595
Totals:											34,168	32	2,872	37,072	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Overlashed Bundle	1/4" EHS	Unknown,	22.23	7.62	0.2500	0.02	0.121	36.3	317.2	36.3	1,800	-4,072	0	183	-3,889
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.92	7.77	1.5000	0.51	0.900	37.2	137.2	37.2	2,000	4,055	-19	431	4,466
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.92	7.77	1.5000	0.35	0.900	25.9	236.7	25.9	150	3,770	-13	14	3,770
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.77	7.84	1.5000	0.51	0.900	37.2	137.2	37.2	2,000	3,819	33	406	4,258
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.77	7.84	1.5000	0.50	0.900	36.3	317.2	36.3	2,000	-3,819	32	396	-3,390
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.96	7.89	1.5000	0.50	0.900	36.3	317.2	36.3	2,000	-3,655	-3	379	-3,279
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.46	0.337	37.2	137.2	37.2	925	1,971	19	414	2,404
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.31	0.337	25.9	236.7	25.9	150	3,962	13	13	3,989
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.45	0.337	36.3	317.2	36.3	925	-1,971	18	405	-1,548
	COMMUNICATION														
Totals:											4,059	80	2,642	6,781	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		35.85	6.01	236.7	236.7	50.00	4.50	3.50	96.00	0	2,298	2,298
Normal	Crossarm		39.25	5.79	142.0	142.0	50.00	4.50	3.50	96.00	7	71	78
Totals:											7	2,369	2,377

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 200.0°	Riser	KU, UTILITY	27.54	6.57	200.0	200.0	27.54	330.46	4.00	4.00	330.46	35	510	545
Totals:											35	510	545	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	40.28	0.00	0.0	0.0	13.00	9.00	10.50	0	187	187	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	0.00	236.7	0.0	3.00	3.80	12.75	9	84	93	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	45.00	319.1	0.0	3.00	3.80	12.75	3	84	88	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	-45.00	154.3	0.0	3.00	3.80	12.75	14	84	98	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.96	0.00	230.4	140.4	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	186.9	96.9	2.00	3.00	3.19	2	11	13	
Bolt	Single Bolt	Unknown, COMMUNICATION	22.23	0.00	317.2	407.2	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.92	0.00	96.9	186.9	5.00	3.00	0.00	-4	0	-4	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.77	0.00	227.2	227.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.96	0.00	317.2	407.2	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.94	0.00	230.0	140.0	5.00	3.00	0.00	6	0	6	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.44	45.00	224.7	0.0	13.00	9.00	10.50	93	182	275	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.44	-45.00	59.3	0.0	13.00	9.00	10.50	-89	182	93	
Totals:											42	827	869

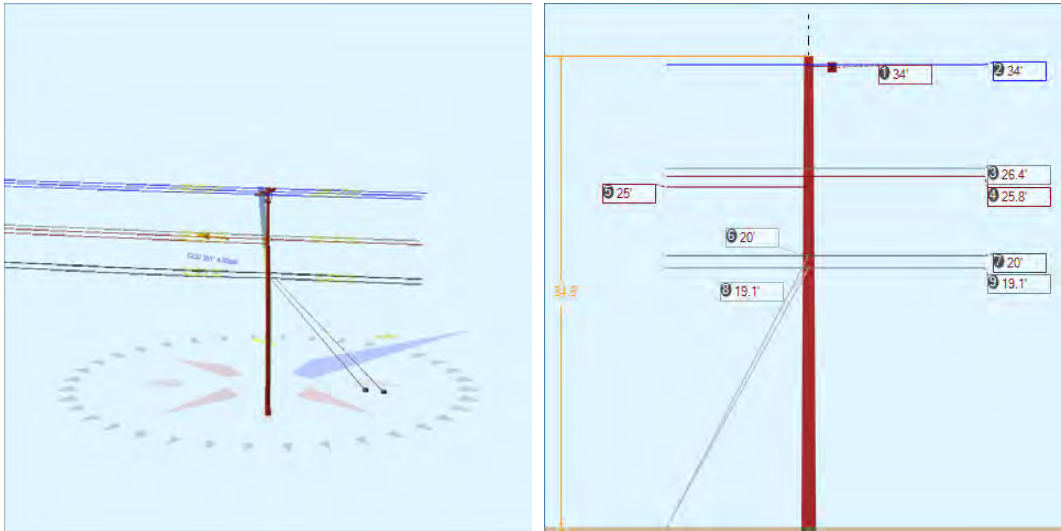
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Sidewalk	KU, UTILITY	36.55	0.00	8.00	0.375	75.00	50.0	59.8	0.273	36.54	0.64

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Sidewalk	2.30e+7	15,400	0.90	13,860	700	3,118	2,835	2,831	2,446	1,424	-1,413	-16,720
Totals:										2,446	1,424	-1,413	-16,720

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	8.00	50.0	20,000	1.00	20,000	2,835	2,831	14.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.77	34.33	11.76	14.19	7.96	13.06	1.60e+6	60.00	57.00	40.28	197,478	1967.33	26.32

Pole Num:	76W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025288 Deg	Longitude:	-84.456881 Deg	Elevation:	918.994880949127		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	62.2	20.0
Groundline	44.6	0.0
Vertical	4.1	19.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,943	255.0
Groundline	23,629	340.1
GL Allowable	68,854	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.4	57.7		18.8	260.5	18.8	255.6
? EHS 1/4 (Down)			20.0	62.8	260.5	69.1	255.6
? Single Helix Anchor	17.1	56.2		14.2	260.5	14.6	210.0
? EHS 1/4 (Down)			19.1	47.4	260.5	53.6	210.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 340.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-175	-16.4	-1,856	-7.9	-2.7	-173	194	2	-170	-2.5
Comms	191	18.0	3,918	16.6	5.7	364	253	3	367	5.4
GuyBraces	1,021	96.1	21,219	89.8	30.8	1,973	7,182	79	2,052	30.2
Pole	32	3.0	598	2.5	0.9	56	1,663	18	74	1.1
Crossarms	-12	-1.2	-442	-1.9	-0.6	-41	190	2	-39	-0.6
Insulators	6	0.5	192	0.8	0.3	18	122	1	19	0.3
Pole Load	1,062	100.0	23,629	100.0	34.3	2,197	9,604	106	2,303	33.9
Pole Reserve Capacity			45,225		65.7	4,603			4,497	66.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 340.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-169	-15.9	-1,664	-7.0	-2.4	-155	278	3	-152	-2.2
Unknown, COMMUNICATION	1,212	114.1	25,137	106.4	36.5	2,337	7,473	83	2,419	35.6
Pole	32	3.0	598	2.5	0.9	56	1,663	18	74	1.1
<Undefined>	-12	-1.2	-442	-1.9	-0.6	-41	190	2	-39	-0.6
Totals:	1,062	100.0	23,629	100.0	34.3	2,197	9,604	106	2,303	33.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	7.62	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	0	83	17,274
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	45.89	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	2	83	17,275
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	45.39	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	-2	83	17,272
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	17.88	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	-1	270	-14,129
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	48.65	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	6	270	-14,122
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	48.19	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	-7	270	-14,134

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.37	6.33	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	13,335	4	65	13,403
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.37	6.33	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-11,169	13	210	-10,946
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.80	6.36	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	13,043	1	63	13,107
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.36	0.3980	0.12	0.145	91.3	238.9	91.3	2,128	-13,804	-3	223	-13,584
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.00	6.41	0.3980	0.12	0.145	91.3	238.9	91.3	2,128	-13,376	-3	216	-13,163
Totals:											-3,594	9	1,838	-1,747	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.96	6.70	1.3300	1.18	0.337	91.3	238.9	91.3	925	-4,642	-8	352	-4,298
Telco	TELE 1.5	Unknown, COMMUNICATION	19.07	6.75	1.5000	0.35	0.900	25.9	56.7	25.9	2,000	11,450	5	113	11,568
Telco	TELE 1.5	Unknown, COMMUNICATION	19.07	6.75	1.5000	1.37	0.900	91.3	238.9	91.3	2,000	-9,590	-14	367	-9,236
CATV	CATV 1.0	Unknown, COMMUNICATION	19.96	6.70	1.3300	0.31	0.337	25.9	56.7	25.9	925	5,544	2	109	5,654
Totals:											2,761	-15	941	3,688	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	34.00	5.13	237.8	237.8	50.00	4.50	3.50	96.00	0	-416	-416	
Totals:											0	-416	-416

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	0.00	237.8	-181.1	3.00	3.80	12.75	2	29	31
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	45.00	321.3	-181.1	3.00	3.80	12.75	44	29	73
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	-45.00	154.3	-181.1	3.00	3.80	12.75	-40	29	-11
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	0.00	237.8	1.1	3.00	3.80	12.75	-3	29	26
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	45.00	321.3	1.1	3.00	3.80	12.75	38	29	68
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	-45.00	154.3	1.1	3.00	3.80	12.75	-45	29	-16

Spool	Spool Insulator - 25 kV	KU, UTILITY	26.37	0.00	327.8	237.8	2.00	3.00	3.19	2	2	4
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	56.7	56.7	2.00	3.00	3.19	0	2	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	238.9	238.9	2.00	3.00	3.19	0	2	2
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.00	0.00	238.9	238.9	2.00	3.00	3.19	0	2	2
Bolt	Single Bolt	Unknown, COMMUNICATION	19.96	0.00	238.9	328.9	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.07	0.00	56.7	146.7	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.07	0.00	238.9	238.9	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.96	0.00	58.9	328.9	5.00	3.00	0.00	1	0	1
Totals:										-3	184	181

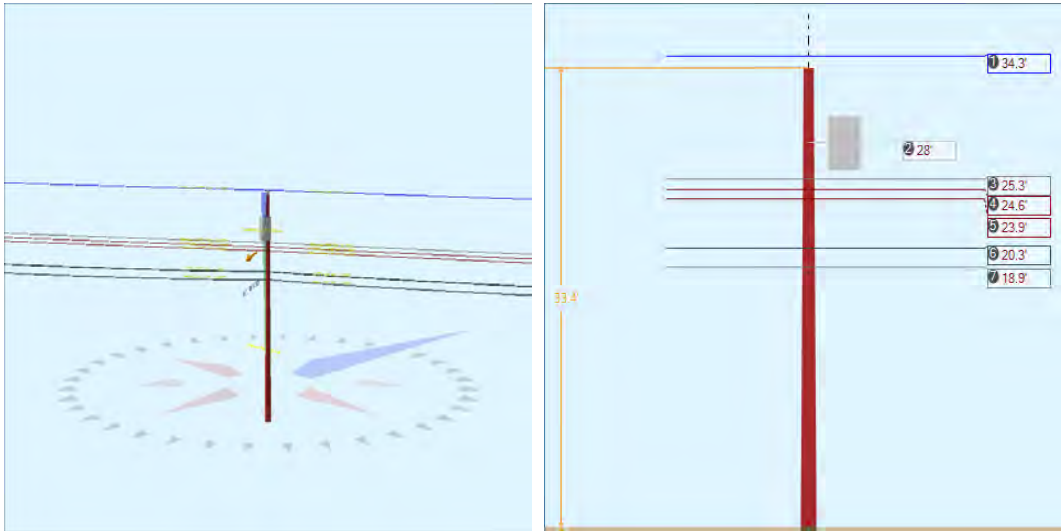
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4 Down	Unknown, COMMUNICATION	19.96	0.00	20.37	0.25	75.00	57.7	44.3	0.121	26.77	1.43
EHS 1/4 Down	Unknown, COMMUNICATION	19.07	0.00	17.12	0.25	75.00	56.2	47.9	0.121	23.89	0.96

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	4,134	3,758	3,756	2,622	2,690	574	11,383
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	3,206	2,915	2,835	2,105	1,900	455	8,590
Totals:									4,727	4,590	1,029	19,973

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	20.37	57.7	20,000	1.00	20,000	3,758	3,756	18.8
Single Helix Anchor		18.00	17.12	56.2	20,000	1.00	20,000	2,915	2,835	14.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.63	33.21	9.97	13.02	6.69	10.74	1.60e+6	60.00	57.00	34.63	234,937	2342.34	24.39

Pole Num:	77W - 28930-2109	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.77	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025160 Deg	Longitude:	-84.457145 Deg	Elevation:	918.682392152408		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.8	0.0
Groundline	30.8	0.0
Vertical	12.5	21.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,824	148.3
Groundline	24,824	148.3
GL Allowable	82,108	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 148.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	411	42.1	11,161	45.0	13.6	921	268	3	924	13.6
Comms	321	32.9	6,567	26.5	8.0	542	482	5	547	8.0
PowerEquipments	55	5.6	3,776	15.2	4.6	312	1,216	12	324	4.8
Pole	182	18.7	3,111	12.5	3.8	257	1,845	18	275	4.0
Insulators	6	0.6	208	0.8	0.3	17	55	1	18	0.3
Pole Load	974	100.0	24,824	100.0	30.2	2,049	3,866	38	2,087	30.7
Pole Reserve Capacity			57,284		69.8	4,751			4,713	69.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 148.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	471	48.4	15,134	61.0	18.4	1,249	1,520	15	1,264	18.6
Unknown, COMMUNICATION	321	32.9	6,579	26.5	8.0	543	501	5	548	8.1
Pole	182	18.7	3,111	12.5	3.8	257	1,845	18	275	4.0
Totals:	974	100.0	24,824	100.0	30.2	2,049	3,866	38	2,087	30.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.27	0.00	0.3250	0.29	0.107	132.0	237.5	132.0	1,684	758	0	1,088	1,847
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.27	0.00	0.3250	0.14	0.107	91.3	58.9	91.3	1,684	652	0	753	1,405
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.65	0.3250	0.14	0.107	91.3	58.9	91.3	1,684	482	14	556	1,052
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.65	0.3250	0.29	0.107	132.0	237.5	132.0	1,684	560	20	804	1,384
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.57	6.70	0.3980	0.16	0.145	91.3	58.9	91.3	2,128	591	17	587	1,195
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.57	6.70	0.3980	0.33	0.145	132.0	237.5	132.0	2,128	687	24	849	1,560
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.88	6.74	0.3980	0.16	0.145	91.3	58.9	91.3	2,128	574	17	571	1,162

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.88	6.74	0.3980	0.33	0.145	132.0	237.5	132.0	2,128	668	24	825	1,517
											Totals:	4,972	116	6,034	11,122

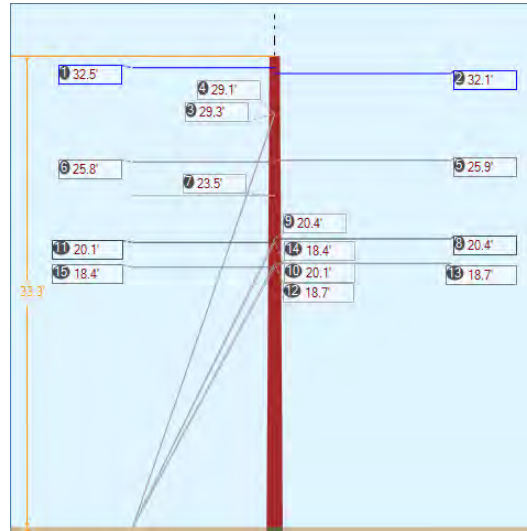
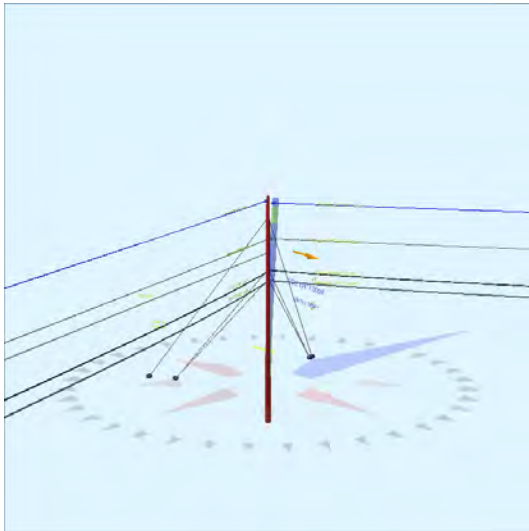
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.30	6.96	1.3300	1.19	0.337	91.3	58.9	91.3	925	212	42	989	1,242
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.30	6.96	1.3300	1.83	0.337	132.0	237.5	132.0	925	247	60	1,429	1,736
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.91	7.04	1.5000	1.37	0.900	91.3	58.9	91.3	2,000	427	73	1,007	1,507
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.91	7.04	1.5000	2.14	0.900	132.0	237.5	132.0	2,000	497	106	1,455	2,058
		COMMUNICATION													
											Totals:	1,383	282	4,880	6,544

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.00	21.99	150.0	150.0	640.00	47.00	--	24.00	--	2,227	1,535	3,763
											Totals:	2,227	1,535	3,763

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.40	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.33	0.00	148.2	58.2	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.57	0.00	148.2	58.2	2.00	3.00	3.19	2	11	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.88	0.00	148.2	58.2	2.00	3.00	3.19	2	11	13		
Bolt	Single Bolt	Unknown, COMMUNICATION	20.30	0.00	148.9	148.9	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.91	0.00	148.9	58.9	5.00	3.00	0.00	6	0	6		
											Totals:	17	190	207

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.29	33.41	10.52	14.72	7.32	11.39	1.60e+6	60.00	57.00	33.40	30,910	309.29	8.00

Pole Num:	78W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.74	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025037 Deg	Longitude:	-84.457408 Deg	Elevation:	909.124338184258		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.9	29.3
Groundline	14.2	0.0
Vertical	17.8	24.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,403	112.7
Groundline	11,586	107.8
GL Allowable	81,878	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.1	338.0	29.3	31.9 46.1	104.1 104.1	32.1 51.0	140.0 140.0
? Single Helix Anchor ? EHS 3/8 (Down)	22.0	240.0	29.2	33.1 47.7	104.1 104.1	33.3 52.8	70.0 70.0
? Single Helix Anchor ? EHS 3/8 (Span/Head)	192.4	159.0	23.5	0.0 0.0	104.1 104.1	0.0 0.0	0.0 0.0
? Single Helix Anchor ? EHS 1/4 (Down)	20.0	338.0	20.4	24.9 42.5	104.1 104.1	25.2 47.2	140.0 140.0
? EHS 1/4 (Down)			18.7	40.8	104.1	45.4	140.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.0	240.0	20.1	27.3 46.4	104.1 104.1	27.6 51.6	70.0 70.0
? EHS 1/4 (Down)			18.4	44.9	104.1	50.0	70.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 107.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,635	460.3	68,474	591.0	83.6	13,610	175	2	13,612	200.2
Comms	5,030	411.0	40,219	347.1	49.1	7,994	698	7	8,001	117.7
GuyBraces	-9,628	-786.5	-98,477	-850.0	-120.3	-19,573	27,322	269	-19,304	-283.9
Pole	181	14.8	1,285	11.1	1.6	256	1,838	18	274	4.0
Insulators	6	0.5	85	0.7	0.1	17	57	1	17	0.3
Pole Load	1,224	100.0	11,586	100.0	14.2	2,303	30,091	296	2,599	38.2
Pole Reserve Capacity			70,292		85.8	4,497			4,201	61.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 107.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	662	54.1	7,734	66.8	9.5	1,537	16,025	158	1,695	24.9
Unknown, COMMUNICATION	381	31.1	2,567	22.2	3.1	510	12,227	120	630	9.3
Pole	181	14.8	1,285	11.1	1.6	256	1,838	18	274	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,224	100.0	11,586	100.0	14.2	2,303	30,091	296	2,599	38.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.48	16.46	0.3250	0.52	0.107	192.4	159.0	192.4	1,684	44,598	10	959	45,567
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.07	16.49	0.3250	0.23	0.107	131.0	57.5	131.0	1,684	44,804	7	565	45,376
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.61	0.3250	0.23	0.107	131.0	57.5	131.0	1,684	36,228	12	457	36,697
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.82	6.62	0.3250	0.52	0.107	192.4	159.0	192.4	1,684	35,454	18	762	36,234
Totals:											161,084	48	2,743	163,874	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.39	6.95	1.3300	1.80	0.337	131.0	57.5	131.0	925	15,645	38	797	16,480
CATV	CATV 1.0	Unknown, COMMUNICATION	20.14	6.96	1.3300	2.95	0.337	192.4	159.0	192.5	925	15,190	55	1,318	16,564
Telco	TELE 1.5	Unknown, COMMUNICATION	18.66	7.05	1.5000	2.11	0.900	131.0	57.5	131.0	2,000	30,951	67	797	31,815
Telco	TELE 1.5	Unknown, COMMUNICATION	18.38	7.07	1.5000	3.51	0.900	192.4	159.0	192.5	2,000	29,980	98	1,315	31,393
Totals:											91,767	258	4,227	96,252	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.48	0.00	159.0	159.0	3.00	3.80	12.75	5	76	81
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.07	0.00	57.5	57.5	3.00	3.80	12.75	5	75	80
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	57.5	57.5	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.82	0.00	159.0	159.0	2.00	3.00	3.19	1	12	13
Bolt	Single Bolt	Unknown, COMMUNICATION	20.39	0.00	57.5	147.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.14	0.00	159.0	249.0	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	18.66	0.00	57.5	147.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	18.38	0.00	159.0	249.0	5.00	3.00	0.00	4	0	4
Totals:										27	176	202

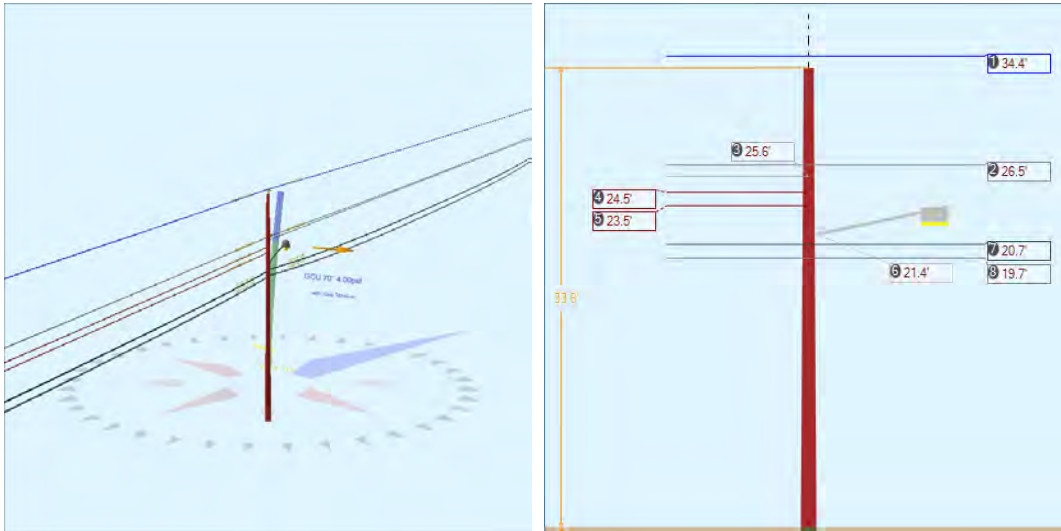
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.26	0.00	21.14	0.375	75.00	338.0	54.0	0.273	34.41	1.38
EHS 3/8	Down	KU, UTILITY	29.15	0.00	22.00	0.375	75.00	240.0	52.8	0.273	34.82	1.45
EHS 3/8	Span/Head	KU, UTILITY	23.46	23.46	192.41	0.375	75.00	159.0	0.0	0.273	190.56	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	20.39	0.00	20.01	0.25	75.00	338.0	45.4	0.121	26.81	0.97
EHS 1/4	Down	Unknown, COMMUNICATION	18.66	0.00	20.01	0.25	75.00	338.0	42.9	0.121	25.58	0.89
EHS 1/4	Down	Unknown, COMMUNICATION	20.14	0.00	17.00	0.25	75.00	240.0	49.7	0.121	24.62	0.97
EHS 1/4	Down	Unknown, COMMUNICATION	18.38	0.00	17.00	0.25	75.00	240.0	47.1	0.121	23.28	0.89

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,071	6,428	6,388	5,165	3,758	-2,408	-69,273
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,316	6,651	6,609	5,263	3,999	-2,683	-77,029
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	749
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,824	2,568	2,541	1,809	1,785	-1,143	-22,966
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,716	2,469	2,441	1,660	1,789	-1,147	-21,095
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,085	2,805	2,776	2,116	1,797	-1,206	-23,844
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,992	2,720	2,690	1,970	1,832	-1,229	-22,219
Totals:										17,983	14,959	-9,816	-235,677

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.14	338.0	20,000	1.00	20,000	6,428	6,388	32.1
Single Helix Anchor		18.00	22.00	240.0	20,000	1.00	20,000	6,651	6,609	33.3
Single Helix Anchor		18.00	192.41	159.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	20.01	338.0	20,000	1.00	20,000	5,035	4,981	25.2
Single Helix Anchor		18.00	17.00	240.0	20,000	1.00	20,000	5,524	5,465	27.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.89	33.99	10.35	25.63	7.32	11.38	1.60e+6	60.00	57.00	33.31	169,179	1690.48	5.62

Pole Num:	79W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024644 Deg	Longitude:	-84.457180 Deg	Elevation:	909.841159377569		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.4	0.0
Groundline	45.4	0.0
Vertical	0.9	18.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,141	103.3
Groundline	37,141	103.3
GL Allowable	82,537	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	192.4	339.0		21.6	70.0	22.2	160.0
? EHS 3/8 (Span/Head)			25.7	31.1	70.0	35.2	160.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 103.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,571	203.1	87,541	235.7	106.1	7,195	262	3	7,198	105.8
Comms	399	22.7	8,374	22.6	10.2	688	699	7	695	10.2
GuyBraces	-2,394	-136.1	-61,541	-165.7	-74.6	-5,058	45	0	-5,058	-74.4
Pole	153	8.7	2,624	7.1	3.2	216	1,858	18	234	3.4
Streetlights	24	1.4	-31	-0.1	0.0	-3	142	1	-1	0.0
Insulators	5	0.3	173	0.5	0.2	14	55	1	15	0.2
Pole Load	1,759	100.0	37,141	100.0	45.0	3,053	3,062	30	3,083	45.3
Pole Reserve Capacity			45,396		55.0	3,747			3,717	54.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 103.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,207	68.6	26,134	70.4	31.7	2,148	486	5	2,153	31.7
Unknown, COMMUNICATION	399	22.7	8,383	22.6	10.2	689	718	7	696	10.2
Pole	153	8.7	2,624	7.1	3.2	216	1,858	18	234	3.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,759	100.0	37,141	100.0	45.0	3,053	3,062	30	3,083	45.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.43	0.00	0.3250	0.29	0.107	131.5	157.1	131.5	1,684	44,567	0	878	45,446
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.43	0.00	0.3250	0.61	0.107	192.4	339.0	192.4	1,684	-42,526	0	1,317	-41,209
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.47	6.59	0.3250	0.29	0.107	131.5	157.1	131.5	1,684	34,252	16	675	34,943
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.47	6.59	0.3250	0.61	0.107	192.4	339.0	192.4	1,684	-32,683	23	1,012	-31,648
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.48	6.71	0.3980	0.32	0.145	131.5	157.1	131.5	2,128	40,026	14	680	40,720

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.49	6.77	0.3980	0.32	0.145	131.5	157.1	131.5	2,128	38,412	14	652	39,078	
												Totals:	82,048	68	5,214	87,331

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.67	6.94	1.3300	2.97	0.337	192.4	339.0	192.5	925	-14,018	72	1,753	-12,192
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.67	6.94	1.3300	1.83	0.337	131.5	157.1	131.6	925	14,690	49	1,169	15,909
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.01	1.5000	3.53	0.900	192.4	339.0	192.5	2,000	-28,838	127	1,823	-26,888
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.01	1.5000	2.14	0.900	131.5	157.1	131.6	2,000	30,223	87	1,216	31,525
		COMMUNICATION													
											Totals:	2,057	336	5,961	8,354

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 8 ft. Arm	KU, UTILITY	21.42	4.40	335.0	335.0	75.00	24.00	20.00	3.00	96.00	-542	512	-31
											Totals:	-542	512	-31

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.56	0.00	0.0	0.0	13.00	9.00	10.50	0	130	130	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.47	0.00	68.0	338.0	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.48	0.00	157.1	157.1	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.49	0.00	157.1	157.1	2.00	3.00	3.19	1	9	10	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.67	0.00	69.0	429.0	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.67	0.00	69.0	429.0	5.00	3.00	0.00	5	0	5	
										Totals:	13	159	173

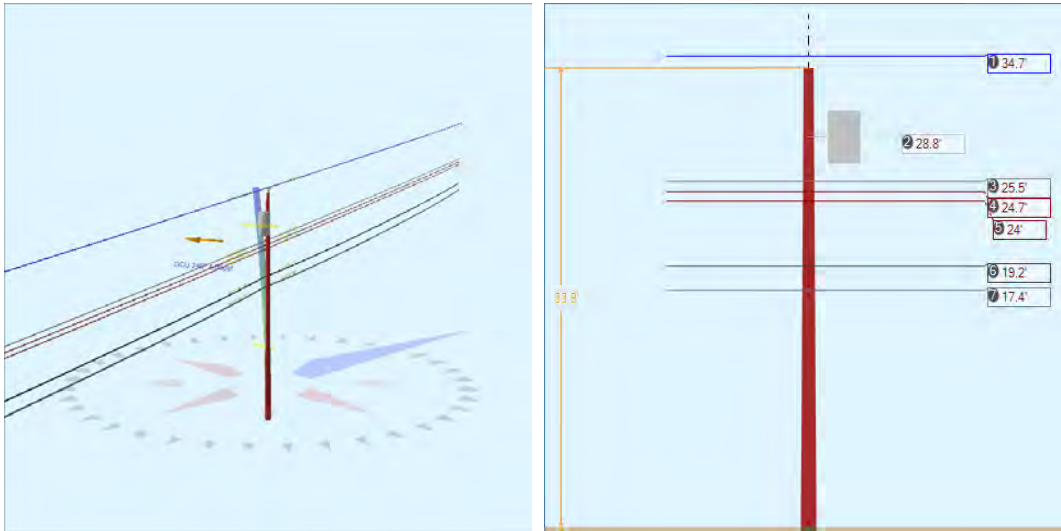
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.65	25.65	192.41	0.375	75.00	339.0	0.0	0.273	190.57	5.18

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	4,884	4,440	4,313	0	4,313	-2,434	-61,393
Totals:									0	4,313	-2,434	-61,393

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	192.41	339.0	20,000	1.00	20,000	4,440	4,313	22.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.24	32.92	10.67	7.37	7.32	11.41	1.60e+6	60.00	57.00	33.56	357,150	3402.52	111.11

Pole Num:	80W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.16	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.94	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024328 Deg	Longitude:	-84.457012 Deg	Elevation:	908.346405933806		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.1	0.0
Groundline	27.1	0.0
Vertical	13.0	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,071	241.4
Groundline	22,071	241.4
GL Allowable	83,274	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 241.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	384	40.0	10,561	47.9	12.7	859	303	3	862	12.7
Comms	331	34.4	6,385	28.9	7.7	519	545	5	525	7.7
PowerEquipments	55	5.7	1,723	7.8	2.1	140	1,216	12	152	2.2
Pole	185	19.2	3,193	14.5	3.8	260	1,881	18	278	4.1
Insulators	6	0.6	210	1.0	0.3	17	55	1	18	0.3
Pole Load	960	100.0	22,071	100.0	26.5	1,796	4,000	39	1,834	27.0
Pole Reserve Capacity			61,203		73.5	5,005			4,966	73.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 241.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	445	46.3	12,482	56.6	15.0	1,015	1,555	15	1,031	15.2
Unknown, COMMUNICATION	331	34.4	6,396	29.0	7.7	520	564	5	526	7.7
Pole	185	19.2	3,193	14.5	3.8	260	1,881	18	278	4.1
Totals:	960	100.0	22,071	100.0	26.5	1,796	4,000	39	1,834	27.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	0.00	0.3250	0.24	0.107	120.8	158.1	120.8	1,684	6,872	0	1,001	7,874
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	0.00	0.3250	0.29	0.107	131.5	337.1	131.5	1,684	-5,858	0	1,093	-4,765
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.49	6.67	0.3250	0.24	0.107	120.8	158.1	120.8	1,684	5,044	18	735	5,797
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.49	6.67	0.3250	0.29	0.107	131.5	337.1	131.5	1,684	-4,300	20	802	-3,477
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.71	6.72	0.3980	0.27	0.145	120.8	158.1	120.8	2,128	6,180	22	776	6,977
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.71	6.72	0.3980	0.32	0.145	131.5	337.1	131.5	2,128	-5,267	24	847	-4,397
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.03	6.76	0.3980	0.27	0.145	120.8	158.1	120.8	2,128	6,010	22	754	6,787

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.03	6.76	0.3980	0.32	0.145	131.5	337.1	131.5	2,128	-5,123	24	824	-4,275
Totals:												3,559	131	6,832	10,521

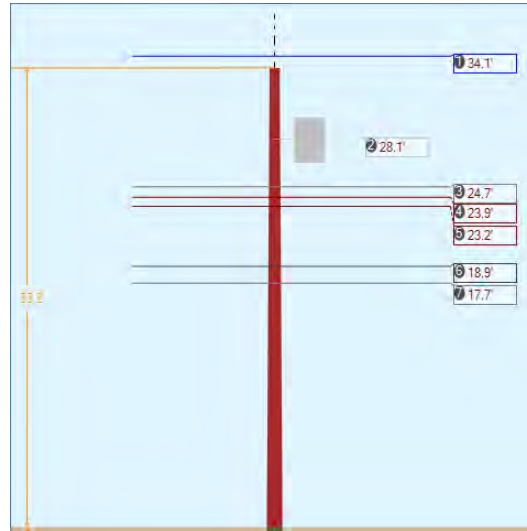
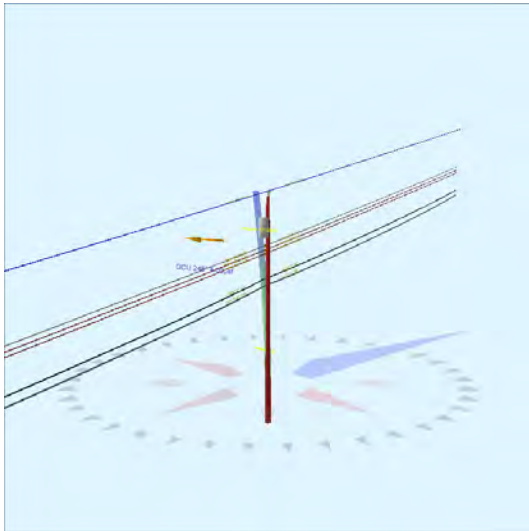
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.24	7.05	1.3300	1.65	0.337	120.8	158.1	120.8	925	2,091	55	1,230	3,377
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.24	7.05	1.3300	1.83	0.337	131.5	337.1	131.6	925	-1,782	60	1,343	-379
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.45	7.16	1.5000	1.92	0.900	120.8	158.1	120.8	2,000	4,101	98	1,220	5,419
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.45	7.16	1.5000	2.14	0.900	131.5	337.1	131.6	2,000	-3,496	107	1,332	-2,057
		COMMUNICATION													
Totals:												914	321	5,125	6,361

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.79	21.97	155.0	155.0	640.00	47.00	--	24.00	--	142	1,574	1,716
Totals:												142	1,574	1,716

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.84	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.49	0.00	247.6	157.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	247.6	157.6	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.03	0.00	247.6	157.6	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	19.24	0.00	247.6	157.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.45	0.00	247.6	157.6	5.00	3.00	0.00	6	0	6
Totals:										18	191	209

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.50	33.43	10.56	15.04	7.32	11.44	1.60e+6	60.00	57.00	33.84	30,814	307.66	7.69

Pole Num:	81W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.71	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024007 Deg	Longitude:	-84.456827 Deg	Elevation:	915.912831301788		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.0	0.0
Groundline	29.0	0.0
Vertical	9.5	19.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,276	245.7
Groundline	23,276	245.7
GL Allowable	81,690	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 245.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	449	43.5	11,948	51.3	14.6	991	298	3	994	14.6
Comms	353	34.3	6,778	29.1	8.3	562	536	5	567	8.3
PowerEquipments	42	4.0	1,266	5.4	1.6	105	694	7	112	1.6
Pole	181	17.6	3,078	13.2	3.8	255	1,832	18	273	4.0
Insulators	6	0.6	206	0.9	0.3	17	55	1	18	0.3
Pole Load	1,031	100.0	23,276	100.0	28.5	1,930	3,415	34	1,964	28.9
Pole Reserve Capacity			58,414		71.5	4,870			4,836	71.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 245.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	496	48.1	13,409	57.6	16.4	1,112	1,028	10	1,122	16.5
Unknown, COMMUNICATION	353	34.3	6,789	29.2	8.3	563	555	5	569	8.4
Pole	181	17.6	3,078	13.2	3.8	255	1,832	18	273	4.0
Totals:	1,031	100.0	23,276	100.0	28.5	1,930	3,415	34	1,964	28.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.11	0.00	0.3250	0.27	0.107	127.6	159.6	127.6	1,684	3,920	0	1,045	4,964
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.11	0.00	0.3250	0.24	0.107	120.8	338.1	120.8	1,684	-2,417	0	991	-1,427
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.68	0.3250	0.27	0.107	127.6	159.6	127.6	1,684	2,832	19	755	3,606
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.68	0.3250	0.24	0.107	120.8	338.1	120.8	1,684	-1,747	18	716	-1,012
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.89	6.73	0.3980	0.30	0.145	127.6	159.6	127.6	2,128	3,468	24	796	4,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.89	6.73	0.3980	0.27	0.145	120.8	338.1	120.8	2,128	-2,139	22	755	-1,361
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.23	6.77	0.3980	0.30	0.145	127.6	159.6	127.6	2,128	3,371	24	774	4,169

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.23	6.77	0.3980	0.27	0.145	120.8	338.1	120.8	2,128	-2,079	22	734	-1,323
Totals:												5,208	129	6,566	11,904

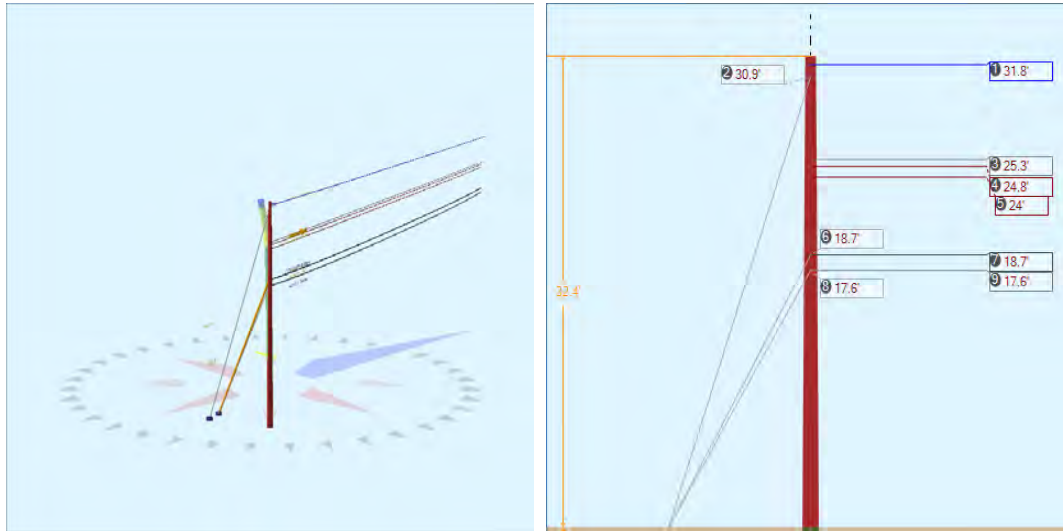
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.90	7.03	1.3300	1.76	0.337	127.6	159.6	127.6	925	1,192	59	1,283	2,534
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.90	7.03	1.3300	1.65	0.337	120.8	338.1	120.8	925	-735	56	1,217	538
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.67	7.11	1.5000	2.06	0.900	127.6	159.6	127.6	2,000	2,411	104	1,312	3,826
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.67	7.11	1.5000	1.92	0.900	120.8	338.1	120.8	2,000	-1,487	98	1,244	-145
		COMMUNICATION													
Totals:												1,381	316	5,056	6,753

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	28.09	20.97	160.0	160.0	365.00	39.00	--	22.00	--	91	1,171	1,262
Totals:												91	1,171	1,262

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.24	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.66	0.00	248.8	158.8	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.89	0.00	248.8	158.8	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.23	0.00	248.8	158.8	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.90	0.00	248.8	158.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.67	0.00	248.8	158.8	5.00	3.00	0.00	6	0	6
Totals:										18	188	205

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.86	33.19	10.56	13.47	7.32	11.37	1.60e+6	60.00	57.00	33.24	36,130	359.50	10.53

Pole Num:	82W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Deadend
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Near Capacity
Aux Data 2	Unset	Setting Depth (ft):	7.65	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.37	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023690 Deg	Longitude:	-84.456712 Deg	Elevation:	909.026306361053		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	64.5	25.0
Groundline	25.8	0.0
Vertical	14.8	24.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,895	162.1
Groundline	13,697	305.1
GL Allowable	79,392	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.1	161.0		45.0	340.0	45.0	342.8
? EHS 3/8 (Down)			30.9	64.9	340.0	71.4	342.8
? Single Helix Anchor	19.0	161.0		53.8	340.0	53.8	342.8
? EHS 1/4 (Down)			18.7	92.9	340.0	102.2	342.8
? EHS 1/4 (Down)			17.6	87.0	340.0	95.7	342.8
System Capacity Summary:				Near Capacity		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 305.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	8,166	807.7	98,300	717.7	123.8	18,341	153	2	18,343	269.7
Comms	3,133	309.8	25,908	189.2	32.6	4,834	275	3	4,837	71.1
GuyBraces	-10,434	-1032.1	-111,660	-815.2	-140.6	-20,834	22,334	224	-20,610	-303.1
Pole	144	14.2	1,100	8.0	1.4	205	1,762	18	223	3.3
Insulators	3	0.3	50	0.4	0.1	9	36	0	10	0.1
Pole Load	1,011	100.0	13,697	100.0	17.3	2,556	24,561	247	2,802	41.2
Pole Reserve Capacity			65,695		82.7	4,244			3,998	58.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 305.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	3,970	392.7	38,725	282.7	48.8	7,226	11,211	113	7,338	107.9
Unknown, COMMUNICATION	-3,103	-306.9	-26,128	-190.8	-32.9	-4,875	11,588	116	-4,759	-70.0
Pole	144	14.2	1,100	8.0	1.4	205	1,762	18	223	3.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,011	100.0	13,697	100.0	17.3	2,556	24,561	247	2,802	41.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.75	16.45	0.3250	0.19	0.107	127.6	339.6	127.6	1,684	57,270	6	-4	57,273
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.26	6.59	0.3250	0.19	0.107	127.6	339.6	127.6	1,684	45,559	16	-3	45,572
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.78	6.62	0.3980	0.23	0.145	127.6	339.6	127.6	2,128	56,471	19	-3	56,487
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.04	6.67	0.3980	0.23	0.145	127.6	339.6	127.6	2,128	54,792	19	-3	54,808
Totals:											214,093	60	-13	214,140	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.71	6.99	1.3300	1.74	0.337	127.6	339.6	127.6	925	18,534	48	-5	18,577
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.64	7.06	1.5000	2.04	0.900	127.6	339.6	127.6	2,000	37,782	85	-5	37,862
		COMMUNICATION													
Totals:											56,316	133	-10	56,439	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	31.75	0.00	0.0	0.0	3.00	3.80	12.75	4	61	66
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.26	0.00	339.6	339.6	2.00	3.00	3.19	2	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.78	0.00	339.6	339.6	2.00	3.00	3.19	2	9	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.04	0.00	339.6	339.6	2.00	3.00	3.19	2	9	11
Bolt	Three Bolt	Unknown, COMMUNICATION	18.71	0.00	339.6	339.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.64	0.00	339.6	339.6	5.00	3.00	0.00	5	0	5
Totals:										19	90	108

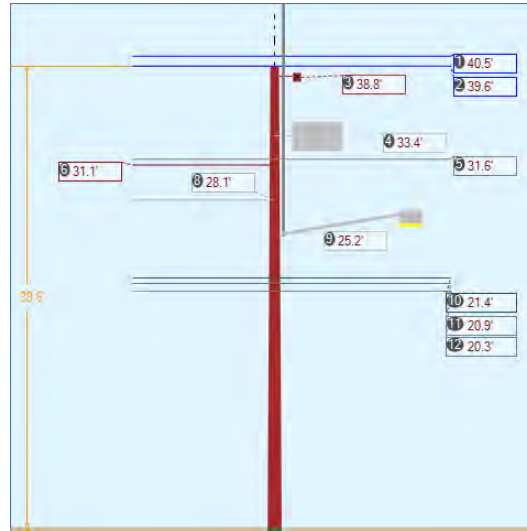
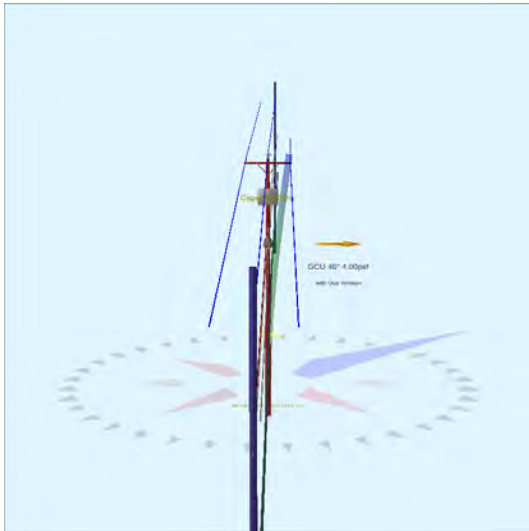
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	30.93	0.00	22.12	0.375	75.00	161.0	54.2	0.273	36.35	2.06
EHS 1/4	Down	Unknown, COMMUNICATION	18.71	0.00	18.98	0.25	75.00	161.0	44.4	0.121	24.88	1.96
EHS 1/4	Down	Unknown, COMMUNICATION	17.64	0.00	18.98	0.25	75.00	161.0	42.8	0.121	24.13	1.78

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,896	8,996	8,996	7,300	5,257	-4,258	-129,878
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	6,114	5,558	5,558	3,892	3,968	-3,214	-59,396
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,726	5,206	5,206	3,535	3,822	-3,095	-53,971
Totals:										14,726	13,048	-10,567	-243,245

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.12	161.0	20,000	1.00	20,000	8,996	8,996	45.0
Single Helix Anchor		18.00	18.98	161.0	20,000	1.00	20,000	10,763	10,763	53.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.60	33.99	10.24	23.03	7.32	11.26	1.60e+6	60.00	57.00	32.35	166,320	1659.51	6.76

Pole Num:	83W - 27285-2049	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.42	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.72	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025573 Deg	Longitude:	-84.457094 Deg	Elevation:	911.695628501899		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	45.6
Groundline	0.0	45.6
Vertical	24.0	225.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	43.3	45.6
Groundline	43.3	45.6
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	122.8	135.5		0.0	45.6	0.0	0.0
? EHS 3/8 (Span/Head)			28.1	0.0	45.6	0.0	0.0
? Single Helix Anchor	126.8	315.7		1.8	45.6	3.5	130.0
? EHS 3/8 (Span/Head)			28.1	2.6	45.6	5.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	305	25.1	11,478	35.4	11.9	810	297	3	812	11.9
Comms	458	37.6	10,086	31.1	10.5	711	881	8	719	10.6
GuyBraces	79	6.5	2,213	6.8	2.3	156	58	1	157	2.3
GenericEquipments	70	5.7	2,295	7.1	2.4	162	817	7	169	2.5
Pole	223	18.3	4,404	13.6	4.6	311	2,343	21	331	4.9
Crossarms	1	0.1	49	0.2	0.1	4	95	1	4	0.1
Streetlights	32	2.6	773	2.4	0.8	55	162	1	56	0.8
Risers	41	3.4	778	2.4	0.8	55	54	0	55	0.8
Insulators	8	0.7	333	1.0	0.4	24	84	1	24	0.4
Pole Load	1,217	100.0	32,408	100.0	33.7	2,286	4,790	42	2,328	34.2
Pole Reserve Capacity			63,865		66.3	4,514			4,472	65.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	465	38.2	15,557	48.0	16.2	1,097	625	6	1,103	16.2
Unknown, COMMUNICATION	458	37.6	10,103	31.2	10.5	713	909	8	721	10.6
<Undefined>	71	5.8	2,344	7.2	2.4	165	912	8	173	2.5
Pole	223	18.3	4,404	13.6	4.6	311	2,343	21	331	4.9
Totals:	1,217	100.0	32,408	100.0	33.7	2,286	4,790	42	2,328	34.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.46	0.00	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,400	0	1,195	-2,206
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.46	0.00	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,864	0	1,233	5,097
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,329	125	1,170	-2,034
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,782	129	1,207	5,119

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,329	-124	1,170	-2,283
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,782	-128	1,207	4,861
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.61	6.63	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-2,656	18	933	-1,704
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.61	6.63	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,018	19	963	4,001
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	31.11	6.66	0.2570	0.23	0.067	122.8	135.5	122.8	150	-233	-1	843	609
Totals:											1,500	39	9,921	11,461	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.40	7.24	1.3300	1.68	0.337	122.8	135.5	122.8	925	-988	58	1,401	472
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.40	7.24	1.3300	1.75	0.337	126.8	315.8	126.8	925	1,122	60	1,447	2,629
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.26	1.5000	1.96	0.900	122.8	135.5	122.8	2,000	-2,088	102	1,498	-489
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.26	1.5000	2.04	0.900	126.8	315.8	126.8	2,000	2,373	105	1,546	4,024
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.28	7.30	1.5000	1.96	0.900	122.8	135.5	122.8	2,000	-2,024	102	1,452	-470
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.28	7.30	1.5000	2.04	0.900	126.8	315.8	126.8	2,000	2,300	106	1,499	3,904
		COMMUNICATION													
Totals:											695	534	8,842	10,071	

Generic Equipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	Capacitor Bank	33.40	22.03	135.0	0.0	430.00	30.00	30.00	--	42.00	-44	2,336	2,291
Totals:											-44	2,336	2,291

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.79	5.46	315.6	315.6	50.00	4.50	3.50	96.00	2	47	49	
Totals:											2	47	49

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 10 ft. Arm	KU, UTILITY	25.19	4.51	135.0	135.0	85.00	24.00	20.00	3.00	120.00	-36	808	772
Totals:												-36	808	772

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 140.0°	Riser	KU, UTILITY	28.35	6.09	140.0	140.0	28.35	340.16	2.50	2.50	340.16	-2	778	777
Totals:												-2	778	777

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.59	0.00	0.0	0.0	13.00	9.00	10.50	0	184	184
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.98	45.00	38.7	0.0	6.00	3.50	7.50	43	50	93
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.98	-45.00	232.5	0.0	6.00	3.50	7.50	-43	50	7
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.61	0.00	45.6	315.6	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.11	0.00	135.5	135.5	2.00	3.00	3.19	0	14	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.40	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.93	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.28	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Totals:										20	313	332

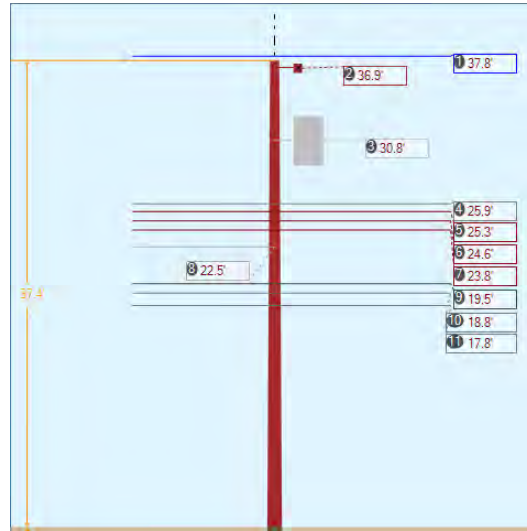
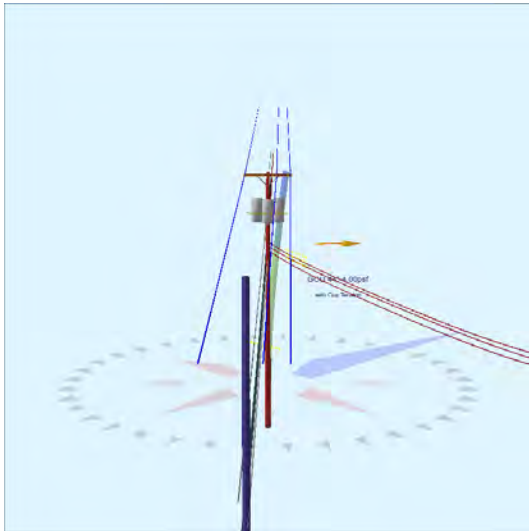
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	28.07	28.07	122.77	0.375	75.00	135.5	0.0	0.273	120.91	0.00
EHS 3/8	Span/Head	KU, UTILITY	28.07	28.07	126.77	0.375	75.00	315.7	0.0	0.273	124.91	0.28

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	875	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	771	701	357	0	357	15	
Totals:										0	357	15	2,209

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	122.77	135.5	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	126.77	315.7	20,000	1.00	20,000	701	357	3.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.02	33.55	11.05	10.36	7.32	12.01	1.60e+6	60.00	57.00	39.59	236,716	2395.16	50.00

Pole Num:	84W - 27285-2045	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.90	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025799 Deg	Longitude:	-84.457405 Deg	Elevation:	905.972449229721		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.2	0.0
Groundline	40.2	0.0
Vertical	4.2	26.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	35,290	18.0
Groundline	35,290	18.0
GL Allowable	90,145	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.8	135.7		37.3	44.1	39.4	320.0
? EHS 3/8 (Span/Head)			22.5	53.8	44.1	62.6	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 18.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,963	324.6	99,092	280.8	109.9	7,485	490	5	7,489	110.1
Comms	364	29.9	6,301	17.9	7.0	476	924	9	484	7.1
GuyBraces	-3,449	-282.5	-77,375	-219.3	-85.8	-5,845	30	0	-5,844	-85.9
PowerEquipments	148	12.1	3,535	10.0	3.9	267	3,648	34	301	4.4
Pole	187	15.3	3,509	9.9	3.9	265	2,151	20	285	4.2
Crossarms	2	0.1	36	0.1	0.0	3	95	1	4	0.1
Insulators	6	0.5	194	0.6	0.2	15	89	1	15	0.2
Pole Load	1,221	100.0	35,290	100.0	39.2	2,666	7,427	69	2,734	40.2
Pole Reserve Capacity			54,855		60.9	4,134			4,066	59.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 18.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	668	54.7	25,460	72.2	28.2	1,923	4,229	39	1,962	28.9
Unknown, COMMUNICATION	364	29.9	6,285	17.8	7.0	475	953	9	484	7.1
Pole	187	15.3	3,509	9.9	3.9	265	2,151	20	285	4.2
<Undefined>	2	0.1	36	0.1	0.0	3	95	1	4	0.1
Totals:	1,221	100.0	35,290	100.0	39.2	2,666	7,427	69	2,734	40.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	18.80	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	38	1,018	-37,531
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	18.80	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	41	1,088	39,333
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	-121	1,018	-37,691
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	-129	1,088	39,163
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	107	1,018	-37,462

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.76	45.33	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	114	1,088	39,406
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.84	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-26,489	-17	699	-25,807
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.84	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	26,226	-18	747	26,954
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.88	0.3980	0.34	0.145	135.0	315.5	135.0	2,128	32,327	12	793	33,131
Secondary	ACSR 1 AWG 6/1 ROBIN	KU, UTILITY	24.55	6.92	0.3550	0.32	0.115	135.0	315.5	135.0	1,830	26,990	10	733	27,733
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.82	6.96	0.3980	0.34	0.145	135.0	315.5	135.0	2,128	30,451	12	747	31,210
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.88	0.3980	0.12	0.145	83.1	112.0	83.2	100	-230	-1	509	277
Secondary	ACSR 1 AWG 6/1 ROBIN	KU, UTILITY	24.55	6.92	0.3550	0.11	0.115	83.1	112.0	83.2	100	-224	-1	470	246
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.82	6.96	0.3980	0.12	0.145	83.1	112.0	83.2	100	-217	-1	479	261
Totals:											87,683	45	11,496	99,223	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.51	7.22	1.3300	1.75	0.337	126.8	135.8	126.8	925	-10,951	-53	1,167	-9,837
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.51	7.22	1.3300	1.88	0.337	135.0	315.5	135.0	925	10,843	-57	1,247	12,033
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.77	7.26	1.5000	2.04	0.900	126.8	135.8	126.8	2,000	-22,781	-93	1,227	-21,647
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.77	7.26	1.5000	2.21	0.900	135.0	315.5	135.0	2,000	22,554	-99	1,311	23,766
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.77	7.32	1.5000	2.04	0.900	126.8	135.8	126.8	2,000	-21,565	-94	1,162	-20,497
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.77	7.32	1.5000	2.21	0.900	135.0	315.5	135.0	2,000	21,351	-100	1,241	22,492
		COMMUNICATION													
Totals:											-549	-496	7,355	6,309	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.83	22.05	135.0	135.0	640.00	47.00	--	24.00	--	-1,015	4,555	3,540
Totals:											-1,015	4,555	3,540	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		36.94	5.44	135.6	135.6	50.00	4.50	3.50	96.00	-20	56	36
Totals:											-20	56	36

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	-18.00	62.4	0.0	6.00	3.50	7.50	13	43	55	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	45.00	218.7	0.0	6.00	3.50	7.50	-40	43	2	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	-45.00	52.5	0.0	6.00	3.50	7.50	35	43	78	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	225.6	135.6	2.00	3.00	3.19	-2	11	9	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.29	0.00	315.5	315.5	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.55	0.00	315.5	315.5	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.82	0.00	315.5	315.5	2.00	3.00	3.19	1	10	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.51	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.77	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.77	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.29	0.00	112.0	112.0	2.00	3.00	3.19	0	11	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.55	0.00	112.0	112.0	2.00	3.00	3.19	0	10	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.82	0.00	112.0	112.0	2.00	3.00	3.19	0	10	10	
Totals:											-7	200	194

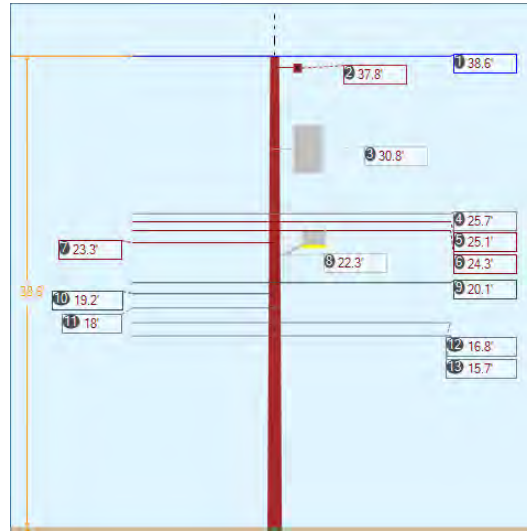
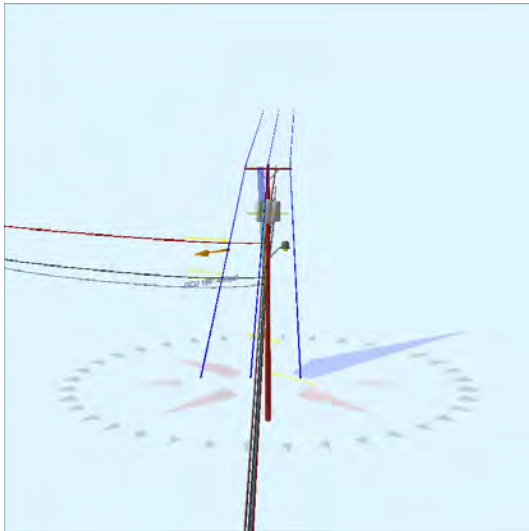
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	22.46	22.46	126.77	0.375	75.00	135.7	0.0	0.273	124.89	5.87

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	8,670	7,882	7,462	0	7,462	-3,477	-77,478	
Totals:											0	7,462	-3,477	-77,478

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	126.77	135.7	20,000	1.00	20,000	7,882	7,462	39.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.00	33.93	10.70	13.19	7.32	11.75	1.60e+6	60.00	57.00	37.39	177,565	1768.30	23.81

Pole Num:	85W - 27285-2033	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.36	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.36	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026064 Deg	Longitude:	-84.457726 Deg	Elevation:	903.472315248087		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	68.8	0.0
Groundline	68.8	0.0
Vertical	25.6	24.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	63,616	161.5
Groundline	63,616	161.5
GL Allowable	93,599	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,028	78.8	47,835	75.2	51.1	3,479	527	5	3,484	51.2
Comms	177	6.9	3,446	5.4	3.7	251	992	9	260	3.8
PowerEquipments	126	4.9	7,434	11.7	7.9	541	2,603	23	564	8.3
Pole	198	7.7	3,830	6.0	4.1	279	2,259	20	299	4.4
Crossarms	20	0.8	717	1.1	0.8	52	95	1	53	0.8
Streetlights	18	0.7	175	0.3	0.2	13	86	1	14	0.2
Insulators	5	0.2	178	0.3	0.2	13	97	1	14	0.2
Pole Load	2,572	100.0	63,616	100.0	68.0	4,627	6,658	60	4,687	68.9
Pole Reserve Capacity			29,983		32.0	2,173			2,113	31.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	2,128	82.8	54,377	85.5	58.1	3,955	3,210	29	3,984	58.6
<Undefined>	69	2.7	1,950	3.1	2.1	142	150	1	143	2.1
Unknown, COMMUNICATION	177	6.9	3,459	5.4	3.7	252	1,039	9	261	3.8
Pole	198	7.7	3,830	6.0	4.1	279	2,259	20	299	4.4
Totals:	2,572	100.0	63,616	100.0	68.0	4,627	6,658	60	4,687	68.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	5.46	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	-15	422	58,933
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	5.46	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	-12	331	-58,599
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	-74	422	58,874
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	-61	331	-58,648
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	44	422	58,992

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.65	45.33	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	36	331	-58,551
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.72	6.93	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	38,926	9	281	39,216
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.72	6.93	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-39,187	7	220	-38,960
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.96	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	47,933	11	298	48,242
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.96	0.3980	0.19	0.145	110.3	316.3	110.3	2,128	-48,255	9	234	-48,012
Secondary	TRIPLEX 4 AWG		25.06	6.96	0.6800	0.65	0.164	63.7	249.0	63.7	100	109	7	491	606
Secondary	TRIPLEX 4 AWG		25.06	6.96	0.6800	0.65	0.164	63.7	249.0	63.7	120	130	7	491	628
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.34	7.01	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	46,558	11	289	46,858
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.34	7.01	0.3980	0.19	0.145	110.3	316.3	110.3	2,128	-46,870	9	227	-46,634
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.34	7.07	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	44,643	24	278	44,944
											Totals:	42,809	13	5,069	47,891

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.07	7.26	1.3300	1.87	0.337	135.0	135.5	135.0	925	16,691	28	486	17,206
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.07	7.26	1.3300	1.47	0.337	110.3	316.3	110.3	925	-16,803	23	381	-16,399
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.79	7.45	1.5000	2.20	0.900	135.0	135.5	135.0	2,000	30,187	50	445	30,681
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.79	7.45	1.5000	1.71	0.900	110.3	316.3	110.3	2,000	-30,389	41	349	-30,000
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.72	7.52	1.5000	2.20	0.900	135.0	135.5	135.0	2,000	28,257	50	416	28,723
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.72	7.52	1.5000	1.71	0.900	110.3	316.3	110.3	2,000	-28,447	41	326	-28,079
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.17	7.31	1.3300	0.80	0.337	63.7	249.0	63.8	120	100	13	582	695
		COMMUNICATION													
Telco	TELE 1.0	Unknown,	18.00	7.38	1.0000	1.00	0.860	63.7	249.0	63.9	200	156	20	448	624
		COMMUNICATION													
											Totals:	-248	265	3,433	3,450

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	30.84	22.12	135.0	135.0	640.00	47.00	--	24.00	--	2,006	1,543	3,550
Transformer	1PH-25KVA	KU, UTILITY	30.84	21.12	135.0	135.0	365.00	39.00	--	22.00	--	1,545	2,348	3,893
Totals:												3,552	3,891	7,442

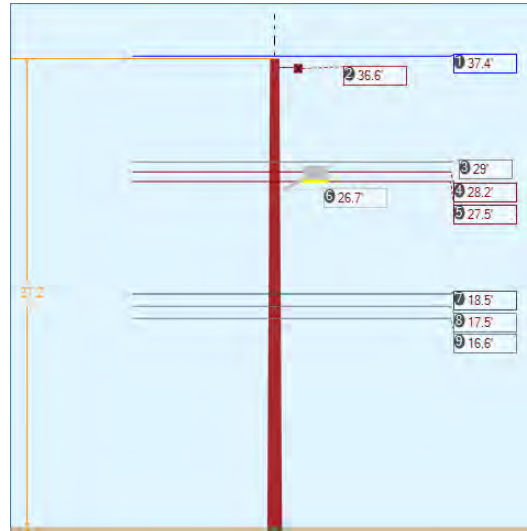
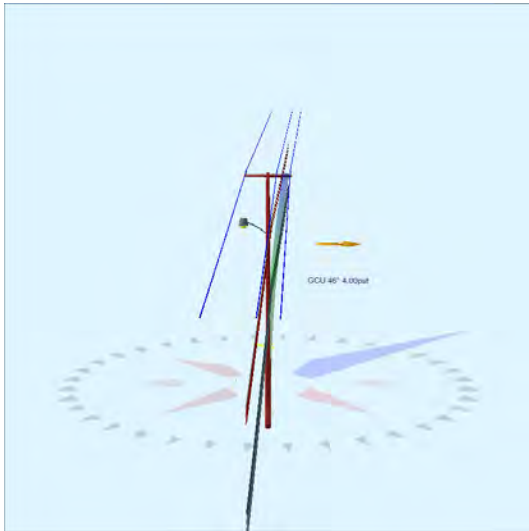
Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		37.84	5.46	315.9	315.9	50.00	4.50	3.50	96.00	-39	757	718	
Totals:												-39	757	718

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	22.28	4.63	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-228	403	175
Totals:												-228	403	175

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	0.00	315.9	0.0	6.00	3.50	7.50	-5	44	40	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	45.00	39.0	0.0	6.00	3.50	7.50	-23	44	21	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	-45.00	232.8	0.0	6.00	3.50	7.50	14	44	58	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.72	0.00	225.9	315.9	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	225.9	315.9	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.34	0.00	225.9	315.9	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.34	0.00	135.5	135.5	2.00	3.00	3.19	2	10	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.07	0.00	225.9	315.9	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.79	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.72	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.17	0.00	225.9	315.9	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.00	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Totals:											3	175	179

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.90	33.72	10.90	20.67	7.32	11.90	1.60e+6	60.00	57.00	38.64	26,047	260.09	3.91

Pole Num:	86W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026282 Deg	Longitude:	-84.457995 Deg	Elevation:	899.09259996709		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.5	0.0
Groundline	33.5	0.0
Vertical	9.0	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,592	46.3
Groundline	29,592	46.3
GL Allowable	89,755	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 46.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	501	41.7	16,518	55.8	18.4	1,254	407	4	1,258	18.5
Comms	466	38.8	8,645	29.2	9.6	657	825	8	664	9.8
Pole	207	17.2	3,870	13.1	4.3	294	2,138	20	314	4.6
Crossarms	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Streetlights	20	1.7	291	1.0	0.3	22	86	1	23	0.3
Insulators	5	0.4	221	0.8	0.3	17	74	1	17	0.3
Pole Load	1,200	100.0	29,592	100.0	33.0	2,247	3,625	34	2,281	33.5
Pole Reserve Capacity			60,163		67.0	4,553			4,519	66.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 46.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	526	43.8	17,014	57.5	19.0	1,292	538	5	1,297	19.1
Unknown, COMMUNICATION	466	38.8	8,663	29.3	9.7	658	853	8	666	9.8
Pole	207	17.2	3,870	13.1	4.3	294	2,138	20	314	4.6
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Totals:	1,200	100.0	29,592	100.0	33.0	2,247	3,625	34	2,281	33.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	18.81	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	45	994	1,060
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	18.81	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	50	1,111	2,021
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	112	994	1,127
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	126	1,111	2,097
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	-112	994	903
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	-125	1,111	1,846

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.04	6.65	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	16	17	771	804
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.04	6.65	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	666	19	862	1,546
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.69	0.3980	0.23	0.145	110.3	136.3	110.3	2,128	20	20	816	856
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.69	0.3980	0.28	0.145	123.3	317.1	123.3	2,128	819	23	912	1,754
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.48	6.74	0.3980	0.23	0.145	110.3	136.3	110.3	2,128	19	20	794	834
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.48	6.74	0.3980	0.28	0.145	123.3	317.1	123.3	2,128	797	23	887	1,707
Totals:											4,980	217	11,358	16,556	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.55	7.27	1.3300	1.48	0.337	110.3	136.3	110.3	925	6	53	1,092	1,150
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.55	7.27	1.3300	1.69	0.337	123.3	317.1	123.4	925	234	59	1,221	1,513
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.55	7.33	1.5000	1.72	0.900	110.3	136.3	110.3	2,000	12	92	1,129	1,233
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.55	7.33	1.5000	1.97	0.900	123.3	317.1	123.4	2,000	478	103	1,262	1,844
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.61	7.38	1.5000	1.72	0.900	110.3	136.3	110.3	2,000	11	93	1,069	1,173
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.61	7.38	1.5000	1.97	0.900	123.3	317.1	123.4	2,000	453	104	1,195	1,751
		COMMUNICATION													
Totals:											1,193	504	6,968	8,665	

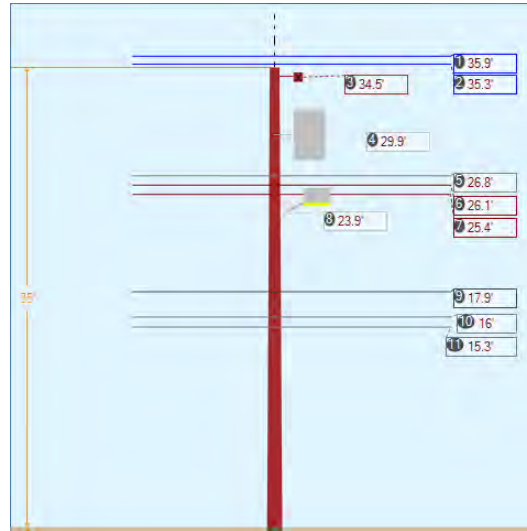
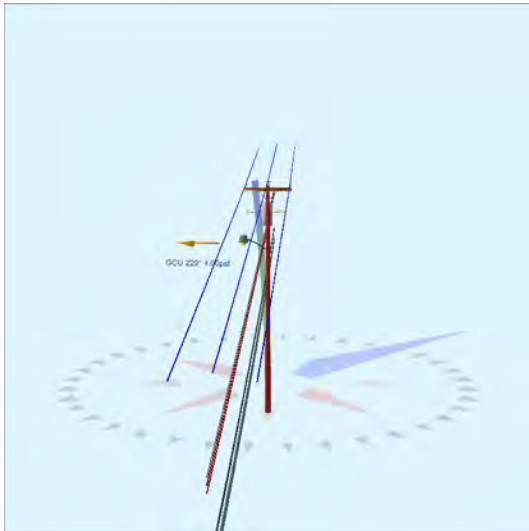
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	36.63	5.45	317.1	317.1	50.00	4.50	3.50	96.00	1	45	46	
Totals:											1	45	46

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.75	4.28	230.0	230.0	45.00	24.00	20.00	3.00	36.00	-238	530	292
Totals:											-238	530	292	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	18.00	30.3	0.0	6.00	3.50	7.50	17	47	64
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	45.00	40.2	0.0	6.00	3.50	7.50	43	47	90
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	-45.00	234.0	0.0	6.00	3.50	7.50	-43	47	4
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.04	0.00	46.7	316.7	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.25	0.00	46.7	316.7	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.48	0.00	46.7	316.7	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	18.55	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.55	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.61	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Totals:										41	181	222

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.18	33.05	10.94	14.15	7.32	11.73	1.60e+6	60.00	57.00	37.24	40,209	402.77	11.11

Pole Num:	87W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.40	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026529 Deg	Longitude:	-84.458292 Deg	Elevation:	904.83089712481		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.9	0.0
Groundline	26.9	0.0
Vertical	15.1	22.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,718	233.0
Groundline	22,718	233.0
GL Allowable	86,519	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 233.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	328	34.9	10,164	44.7	11.8	795	319	3	798	11.7
Comms	335	35.6	5,893	25.9	6.8	461	647	6	467	6.9
PowerEquipments	55	5.8	2,147	9.5	2.5	168	1,216	12	180	2.6
Pole	193	20.5	3,448	15.2	4.0	270	1,980	19	289	4.2
Crossarms	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Streetlights	20	2.1	712	3.1	0.8	56	86	1	57	0.8
Insulators	9	0.9	311	1.4	0.4	24	87	1	25	0.4
Pole Load	940	100.0	22,718	100.0	26.3	1,778	4,430	42	1,820	26.8
Pole Reserve Capacity			63,801		73.7	5,022			4,980	73.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 233.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	411	43.7	13,317	58.6	15.4	1,042	1,680	16	1,058	15.6
Unknown, COMMUNICATION	335	35.6	5,911	26.0	6.8	463	675	6	469	6.9
Pole	193	20.5	3,448	15.2	4.0	270	1,980	19	289	4.2
<Undefined>	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Totals:	940	100.0	22,718	100.0	26.3	1,778	4,430	42	1,820	26.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.92	0.00	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,251	0	1,060	-5,191
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.92	0.00	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,566	0	513	7,079
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,144	123	1,042	-4,979
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,454	60	505	7,018
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,144	-126	1,042	-5,229

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	35.30	45.33	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,454	-61	505	6,897
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.80	6.66	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-4,662	18	791	-3,854
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.80	6.66	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	4,897	9	383	5,289
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.09	6.71	0.3980	0.28	0.145	123.3	137.1	123.3	2,128	-5,736	23	838	-4,876
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.09	6.71	0.3980	0.07	0.145	59.8	316.8	59.8	2,128	6,025	11	406	6,442
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.37	6.75	0.3980	0.28	0.145	123.3	137.1	123.3	2,128	-5,578	23	815	-4,740
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.37	6.75	0.3980	0.07	0.145	59.8	316.8	59.8	2,128	5,859	11	395	6,264
Totals:											1,739	90	8,291	10,121	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.95	7.20	1.3300	1.69	0.337	123.3	137.1	123.4	925	-1,715	58	1,174	-483
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.95	7.20	1.3300	0.75	0.337	59.8	316.8	59.8	925	1,802	28	569	2,399
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.02	7.32	1.5000	1.97	0.900	123.3	137.1	123.4	2,000	-3,311	103	1,146	-2,062
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.02	7.32	1.5000	0.85	0.900	59.8	316.8	59.8	2,000	3,478	50	555	4,082
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.27	7.36	1.5000	1.97	0.900	123.3	137.1	123.4	2,000	-3,155	103	1,092	-1,960
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.27	7.36	1.5000	0.85	0.900	59.8	316.8	59.8	2,000	3,314	50	529	3,893
		COMMUNICATION													
Totals:											412	392	5,064	5,868	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.89	21.97	310.0	310.0	640.00	47.00	--	24.00	--	502	1,635	2,138
Totals:											502	1,635	2,138	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.49	5.44	137.0	137.0	50.00	4.50	3.50	96.00	-5	47	42
Totals:											-5	47	42

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.86	4.34	225.0	225.0	45.00	24.00	20.00	3.00	36.00	237	472	709
Totals:												237	472	709

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.04	0.00	0.0	0.0	13.00	9.00	10.50	0	163	163	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.68	45.00	220.1	0.0	6.00	3.50	7.50	42	44	86	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.68	-45.00	53.9	0.0	6.00	3.50	7.50	-43	44	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.80	0.00	227.0	137.0	2.00	3.00	3.19	2	12	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.09	0.00	227.0	137.0	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.37	0.00	227.0	137.0	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.95	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.02	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.27	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Totals:											22	288	310

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.47	33.54	10.67	16.15	7.32	11.59	1.60e+6	60.00	57.00	35.04	29,351	293.36	6.62

34' 2" - 63W - NT

24' 9" - Lowest Power

21' 5" - Proposed Metronet

20' 9" - Highest Tel Cable

19' 11" - Highest Tel Drop

4' - Base offset

Base

34' 4" - 64W - 28930-2163

23' - Proposed Metronet

4' - Base offset

Base

35' 7" - 65W - 28930-2157

26' 5" - Lowest Power

22' - Proposed Metronet

19' 9" - Highest Tel Cable

18' 9" - Highest Tel Drop

4' - Base offset

Base

34' - 66W - 28930-2151

24' 3" - Lowest Power

20' 11" - Proposed Metronet

18' 4" - Highest Tel Cable

18' - Highest Tel Drop

4' - Base offset

Base

32' 9" - 67W - 28930-2143

24' 1" - Lowest Power

20' 6" - Proposed Metronet

18' 7" - Highest Tel Cable

17' 10" - Highest Tel Drop

4' - Base offset

Base

33' 9" - 68W - 28930-2141

25' 6" - Lowest Power

21' 2" - Proposed Metronet

18' 4" - Highest Tel Cable

4' - Base offset

Base

31' 5" - 69W - 28930-2137

23' 8" - Lowest Power

17' 5" - Proposed Metronet

15' 10" - Highest Tel Cable

4' - Base offset

Base

35' 11" - 70W - 28930-2135

22' 9" - Lowest Power

16' 11" - Proposed Metronet

15' 8" - Highest Tel Cable

13' 3" - Highest Tel Drop

4' - Base offset

Base

38' 11" - 71W - 28930-2129

25' 2" - Lowest Power

23' 1" - Proposed Metronet

22' 1" - Highest Tel Cable

20' - Highest Tel Drop

4' - Base offset

Base

38' 2" - 72W - 28930-2119

23' - Lowest Power

21' 10" - Highest Tel Cable

21' 10" - Highest Tel Drop

21' - Proposed Metronet

4' - Base offset

Base

36' 4" - 73W - 28930-2115

26' 10" - Lowest Power

21' 5" - Proposed Metronet

19' 1" - Highest Tel Cable

17' - Highest Tel Drop

4' - Base offset

Base

38' 8" - 74W - NT

23' 10" - Lowest Power

18' 9" - Proposed Metronet

16' 8" - Highest Tel Cable

4' - Base offset

Base

40' 3" - 75W - 28930-2111

24' 8" - Lowest Power

21' 4" - Proposed Metronet

19' 11" - Highest Tel Cable

19' 11" - Highest Tel Drop

4' - Base offset

Base

34' 8" - 76W - NT

25' - Lowest Power

20' 11" - Proposed Metronet

19' 1" - Highest Tel Cable

19' 1" - Highest Tel Drop

4' - Base offset

Base

33' 5" - 77W - 28930-2109

23' 11" - Lowest Power

20' 4" - Proposed Metronet

18' 11" - Highest Tel Cable

18' 11" - Highest Tel Drop

4' - Base offset

Base

33' 4" - 78W - NT

25' 10" - Lowest Power

21' 2" - Proposed Metronet

19' 1" - Highest Tel Drop

18' 5" - Highest Tel Cable

18' 5" - Base offset

Base

33' 7" - 79W - NT

21' 5" - Lowest Power

20' 11" - Highest Tel Drop

20' 2" - Proposed Metronet

19' 8" - Highest Tel Cable

4' - Base offset

Base

33' 10" - 80W - NT

21' 11" - Lowest Power

20' 3" - Proposed Metronet

17' 10" - Highest Tel Cable

17' 10" - Highest Tel Drop

4' - Base offset

Base

33' 3" - 81W - NT

22' 8" - Lowest Power

19' 11" - Proposed Metronet

18' 3" - Highest Tel Cable

18' 3" - Highest Tel Drop

4' - Base offset

Base

32' 4" - 82W - NT

21' 7" - Lowest Power

20' 8" - Proposed Metronet

18' 3" - Highest Tel Cable

18' 3" - Highest Tel Drop

4' - Base offset

Base

39' 7" - 83W - 27285-2049

25' 2" - Lowest Power

22' 5" - Proposed Metronet

20' 11" - Highest Tel Cable

4' - Base offset

Base

37' 5" - 84W - 27285-2045

23' 10" - Lowest Power

20' 6" - Proposed Metronet

18' 8" - Highest Tel Cable

18' 8" - Highest Tel Drop

4' - Base offset

Base

38' 8" - 85W - 27285-2033

21' 1" - Lowest Power

20' - Proposed Metronet

18' 1" - Highest Tel Cable

4' - Base offset

Base

37' 3" - 86W - NT

25' 9" - Lowest Power

19' 7" - Proposed Metronet

17' 7" - Highest Tel Cable

4' - Base offset

Base

35' - 87W - NT

23' 1" - Lowest Power

18' 11" - Proposed Metronet

16' - Highest Tel Cable

4' - Base offset

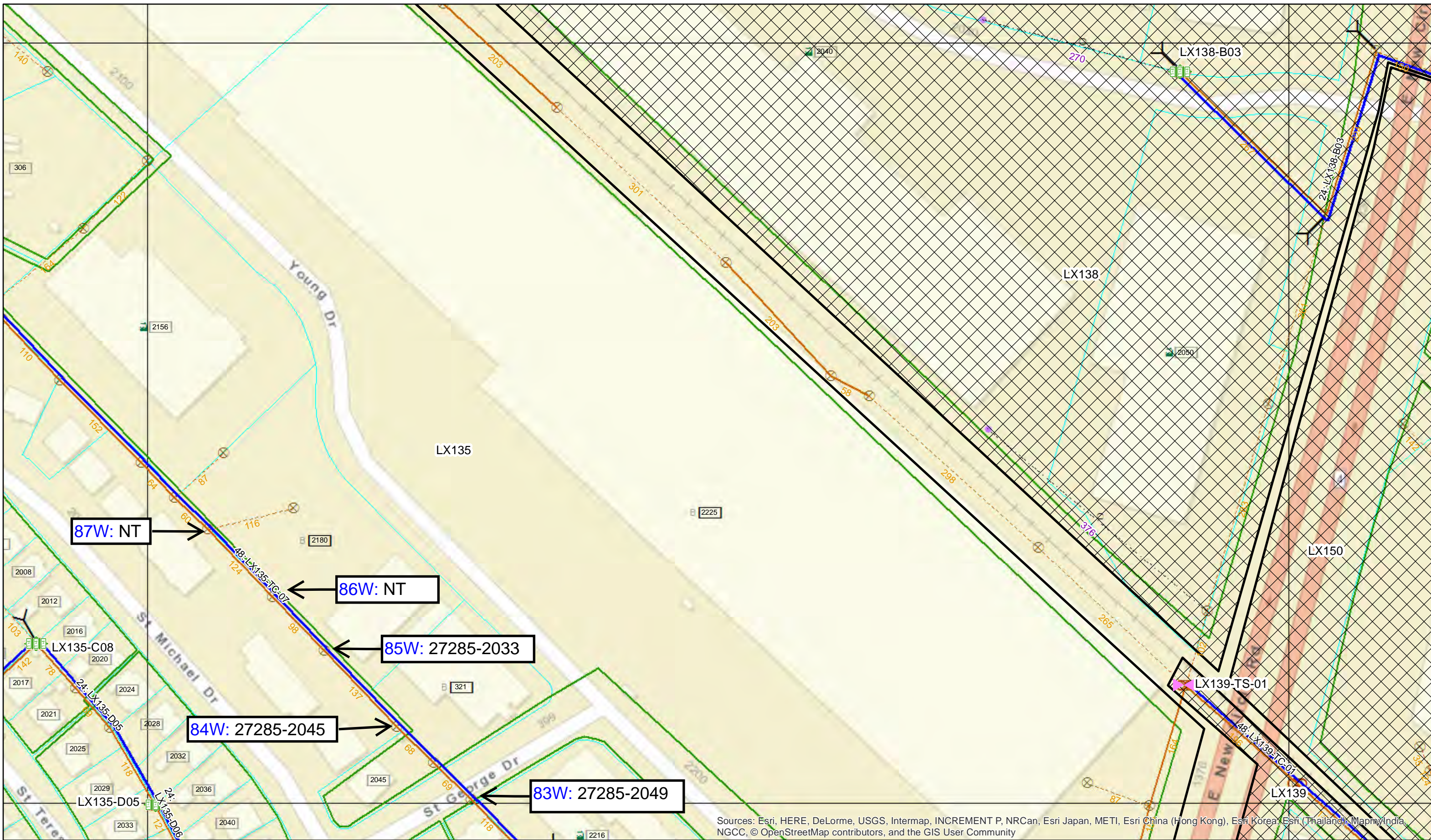
Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 1:13 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX135-02W
Attachments: 135-02 Pole App Map.pdf; LX135-02W - METRONET POLE INVENTORY REPORT.pdf; LX135-02W - METRONET POLE INVENTORY REPORT.xlsx; O-Calcs.pdf; Pole Photos.pdf; Map Key.pdf

Good Morning,
Please see attached for proposal titled LX135-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAX35
 PROJECT NUMBER:
 LXTNXY00437.CB
 DATE 12/12/2017
 USER NAME: arqjls
 DESIGN ENG

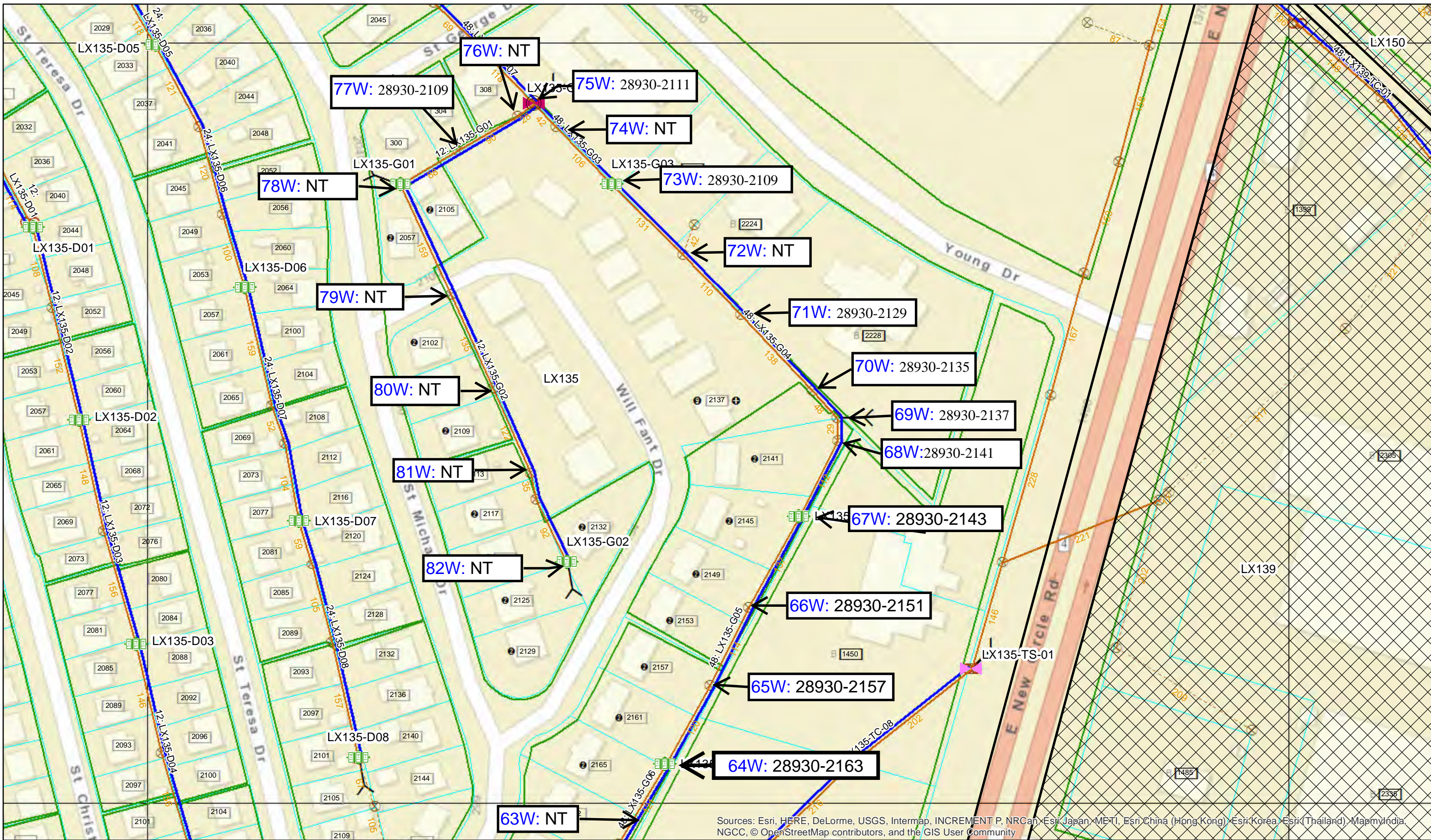
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAW35
 PROJECT NUMBER:
 LXTNXY.00457.CB
 DATE: 12/12/2017
 USER NAME: argjis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

THIS PRINT AND DESIGN ARE THE SOLE PROPERTY OF METRONET AND SHALL BE CONSIDERED CONFIDENTIAL. THIS PRINT MAY NOT BE REPRODUCED IN ANY WAY WITHOUT THE WRITTEN CONSENT OF METRONET, AND SHALL BE RETURNED UPON REQUEST

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 3701 Communications Way
 Evansville, In 47715



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX135-02W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812-213-1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Lauren Sandefur 3.18.19

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	NT	63W	272 ST ANN DR, Lexington, KY 40502	40, 1, WXM	20'9"	19'11"	24'9"		(1)Fiber/Strand		
2	28930-2163	64W	2163 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	N/A	N/A	N/A		(1)Fiber/Strand		
3	28930-2157	65W	2157 WILL FANT DR, 1/2, Lexington, KY 40502	40, 4, WXM	19'9"	18'9"	26'5"		(1)Fiber/Strand		
4	28930-2151	66W	2151 WILL FANT DR, Lexington, KY 40502	40, 4, WXM	18'4"	18'0"	24'3"		(1)Fiber/Strand		
5	28930-2143	67W	2145 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	18'7"	17'10"	24'1"		(1)Fiber/Strand		
6	28930-2141	68W	2143 WILL FANT DR, 1/2, Lexington, KY 40502	40, 3, WXM	18'4"	N/A	25'6"		(1)Fiber/Strand		
7	28930-2137	69W	2141 WILL FANT DR, Lexington, KY 40502	40, 4, WXM	15'10"	N/A	23'8"		(1)Fiber/Strand		
8	28930-2135	70W	2137 WILL FANT DR, 4, Lexington, KY 40502	40, 3, WXM	15'8"	13'3"	22'9"		(1)Fiber/Strand		
9	28930-2129	71W	2133 WILL FANT DR, 4, Lexington, KY 40502	45, 3, WXM	22'1"	20'0"	25'2"		(1)Fiber/Strand		
10	28930-2119	72W	2121 WILL FANT DR, 2, Lexington, KY 40502	45, 3, WXM	21'10"	21'10"	23'0"		(1)Fiber/Strand		
11	28930-2115	73W	2117 WILL FANT DR, 3, Lexington, KY 40502	45, 3, WXM	19'1"	17'0"	26'10"		(1)Fiber/Strand		
12	NT	74W	2216 YOUNG DR, 6, Lexington, KY 40502	45, 3, WXM	16'8"	N/A	23'10"		(1)Fiber/Strand		
13	28930-2111	75W	2216 YOUNG DR, 7, Lexington, KY 40502	45, 2, WXM	19'11"	19'11"	24'8"		(1)Fiber/Strand		
14	NT	76W	308 ST GEORGE DR, Lexington, KY 40502	40, 4, WXM	19'1"	19'1"	25'0"		(1)Fiber/Strand		
15	28930-2109	77W	304 ST GEORGE DR, Lexington, KY 40502	40, 3, WXM	18'11"	18'11"	23'11"		(1)Fiber/Strand		
16	NT	78W	2057 ST MICHAEL DR, Lexington, KY 40502	40, 3, WXM	18'5"	19'1"	25'10"		(1)Fiber/Strand		
17	NT	79W	2102 WILL FANT DR, Lexington, KY 40502	40, 3, WXM	19'8"	20'11"	21'5"		(1)Fiber/Strand		
18	NT	80W	2105 ST MICHAEL DR, B, Lexington, KY 40502	40, 3, WXM	17'10"	17'10"	21'11"		(1)Fiber/Strand		
19	NT	81W	2128 WILL FANT DR, 6, Lexington, KY 40502	40, 3, WXM	18'3"	18'3"	22'8"		(1)Fiber/Strand		

20	NT	82W	2134 WILL FANT DR, Lexington, KY 40502	40, 3, WXM	18'3"	18'3"	21'7"		(1)Fiber/Strand			
21	27285-2049	83W	308 ST GEORGE DR, Lexington, KY 40502	45, 3, WXM	20'11"	N/A	25'2"		(1)Fiber/Strand			
22	27285-2045	84W	2041 ST MICHAEL DR, 6, Lexington, KY 40	45, 3, WXM	18'8"	18'8"	23'10"		(1)Fiber/Strand			
23	27285-2033	85W	2029 ST MICHAEL DR, 13, Lexington, KY 4	45, 3, WXM	18'1"	N/A	21'1"		(1)Fiber/Strand			
24	NT	86W	2029 ST MICHAEL DR, 10, Lexington, KY 4	45, 3, WXM	17'7"	N/A	25'9"		(1)Fiber/Strand			
25	NT	87W	2021 ST MICHAEL DR, 5, Lexington, KY 40	40, 3, WXM	16'0"	N/A	23'1"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

LX135-02W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		63W	NT	40/ 1	WS	2=Comms
KU	0	63W	NT		WS	
Windstream	25	63W	NT		WS	
Total Pole Count	25	63W	NT		WS	
Total Needing Make Ready	10	63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		63W	NT		WS	
		64W	28930-2163	40/ 3	WS	1=None
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		64W	28930-2163		WS	
		65W	28930-2157	40/ 4	WS	1=None
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		65W	28930-2157		WS	
		66W	28930-2151	40/ 4	WS	1=None
		66W	28930-2151		WS	
		66W	28930-2151		WS	

72W	28930-2119		WS	
73W	28930-2115	45/ 3	WS	1=None
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
73W	28930-2115		WS	
74W	NT	45/ 3	WS	1=None
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
74W	NT		WS	
75W	28930-2111	45/ 2	WS	2=Comms
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
75W	28930-2111		WS	
76W	NT	40/ 4	WS	1=None
76W	NT		WS	

76W	NT		WS
76W	NT		WS
76W	NT		WS
76W	NT		WS
76W	NT		WS
77W	28930-2109	40/ 3	WS 2=Comms
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
77W	28930-2109		WS
78W	NT	40/ 3	WS 1=None
78W	NT		WS
78W	NT		WS
78W	NT		WS
78W	NT		WS
78W	NT		WS
79W	NT	40/ 3	WS 2=Comms
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
79W	NT		WS
80W	NT	40/ 3	WS 3=Elec
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
80W	NT		WS
81W	NT	40/ 3	WS 3=Elec
81W	NT		WS
81W	NT		WS
81W	NT		WS
81W	NT		WS

81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
81W	NT		WS	
82W	NT	40/ 3	WS	4=Comms & Ele
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
82W	NT		WS	
83W	27285-2049	45/ 3	WS	1=None
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
83W	27285-2049		WS	
84W	27285-2045	45/ 3	WS	2=Comms
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
84W	27285-2045		WS	
85W	27285-2033	45/3	WS	3=Elec
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	
85W	27285-2033		WS	

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
-------	---------------------	-----------------------------	---------------------	----------	-----------	----------

	272 ST ANN DR	38.02265	-84.45641	KU		
		38.02265	-84.45641	KU		
		38.02265	-84.45641	KU		
		38.02265	-84.45641	KU		
		38.02265	-84.45641	Metronet		
Lower Charter		38.02265	-84.45641	Charter		
Lower Windstream		38.02265	-84.45641	Windstream		
Lower Windstream		38.02265	-84.45641	Windstream		
Lower Windstream		38.02265	-84.45641	Windstream		
Lower Windstream		38.02265	-84.45641	Windstream		
Transfer to new pole	2163 WILL FANT DR, 1	38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	KU		
Transfer to new pole		38.02294	-84.45623	Metronet		
Transfer to new pole		38.02294	-84.45623	Charter		
Transfer to new pole		38.02294	-84.45623	Windstream		
Transfer to new pole		38.02294	-84.45623	Windstream		
Transfer to new pole		38.02294	-84.45623	Windstream		
Transfer to new pole		38.02294	-84.45623	Windstream		
	2157 WILL FANT DR, 1	38.02325	-84.45602	KU		
		38.02325	-84.45602	KU		
		38.02325	-84.45602	KU		
		38.02325	-84.45602	KU		
		38.02325	-84.45602	Metronet		
		38.02325	-84.45602	Charter		
		38.02325	-84.45602	Windstream		
		38.02325	-84.45602	Windstream		
		38.02325	-84.45602	Windstream		
		38.02325	-84.45602	Windstream		
	2151 WILL FANT DR	38.02352	-84.45586	KU		
		38.02352	-84.45586	KU		
		38.02352	-84.45586	KU		

		38.02352	-84.45586	KU
		38.02352	-84.45586	KU
		38.02352	-84.45586	KU
		38.02352	-84.45586	Metronet
		38.02352	-84.45586	Charter
		38.02352	-84.45586	Charter
		38.02352	-84.45586	Windstream
		38.02352	-84.45586	Windstream
		38.02352	-84.45586	Windstream
		38.02352	-84.45586	Windstream
	2145 WILL FANT DR, 1	38.02382	-84.45561	KU
		38.02382	-84.45561	KU
		38.02382	-84.45561	KU
		38.02382	-84.45561	KU
		38.02382	-84.45561	Metronet
		38.02382	-84.45561	Charter
		38.02382	-84.45561	Windstream
		38.02382	-84.45561	Windstream
		38.02382	-84.45561	Windstream
		38.02382	-84.45561	Windstream
	32.30 2143 WILL FANT DR, 1	38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	KU
		38.02413	-84.45541	Metronet
		38.02413	-84.45541	Charter
		38.02413	-84.45541	Windstream
		38.02413	-84.45541	Windstream
		38.02413	-84.45541	Windstream
		38.02413	-84.45541	Windstream
	2141 WILL FANT DR	38.02419	-84.45539	KU
		38.02419	-84.45539	KU
		38.02419	-84.45539	KU
		38.02419	-84.45539	KU
		38.02419	-84.45539	Metronet
		38.02419	-84.45539	Charter
		38.02419	-84.45539	Charter
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream
		38.02419	-84.45539	Windstream

	2137 WILL FANT DR, 4	38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	KU
		38.02428	-84.45550	Metronet
		38.02428	-84.45550	Charter
		38.02428	-84.45550	Windstream
		38.02428	-84.45550	Windstream
		38.02428	-84.45550	Windstream
		38.02428	-84.45550	Windstream
		38.02428	-84.45550	Windstream
	2133 WILL FANT DR, 4	38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	KU
		38.02458	-84.45587	Metronet
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Charter
		38.02458	-84.45587	Charter
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Windstream
		38.02458	-84.45587	Windstream
ec	2121 WILL FANT DR, 2	38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
		38.02478	-84.45611	KU
	Raise secondary drip loop	38.02478	-84.45611	KU
		38.02478	-84.45611	Metronet
	Lower Windstream	38.02478	-84.45611	Windstream
	Lower Charter	38.02478	-84.45611	Charter
	Lower Windstream	38.02478	-84.45611	Windstream
	Lower Windstream	38.02478	-84.45611	Windstream
	Lower Windstream	38.02478	-84.45611	Windstream

Lower Windstream	38.02478	-84.45611	Windstream
2117 WILL FANT DR, 3	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	KU
	38.02502	-84.45640	Metronet
	38.02502	-84.45640	Charter
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
	38.02502	-84.45640	Windstream
2216 YOUNG DR, 6	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	KU
	38.02524	-84.45671	Metronet
	38.02524	-84.45671	Charter
	38.02524	-84.45671	Windstream
	38.02524	-84.45671	Windstream
	38.02524	-84.45671	Windstream
25.10 2216 YOUNG DR, 7	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	KU
	38.02532	-84.45678	Metronet
Lower Charter	38.02532	-84.45678	Charter
Lower Charter	38.02532	-84.45678	Charter
Lower Windstream	38.02532	-84.45678	Windstream
Lower Windstream	38.02532	-84.45678	Windstream
Lower Windstream	38.02532	-84.45678	Windstream
308 ST GEORGE DR	38.02529	-84.45688	KU
	38.02529	-84.45688	KU

	38.02529	-84.45688	KU
	38.02529	-84.45688	KU
	38.02529	-84.45688	Metronet
	38.02529	-84.45688	Charter
	38.02529	-84.45688	Windstream
304 ST GEORGE DR	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	KU
	38.02516	-84.45714	Metronet
Lower Charter	38.02516	-84.45714	Charter
Lower Windstream	38.02516	-84.45714	Windstream
2057 ST MICHAEL DR	38.02504	-84.45741	KU
	38.02504	-84.45741	KU
	38.02504	-84.45741	KU
	38.02504	-84.45741	Metronet
	38.02504	-84.45741	Charter
	38.02504	-84.45741	Windstream
2102 WILL FANT DR	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	KU
	38.02464	-84.45718	Metronet
Lower & Resag Charter	38.02464	-84.45718	Charter
Lower Windstream	38.02464	-84.45718	Windstream
2105 ST MICHAEL DR,	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
	38.02433	-84.45701	KU
Raise secondary drip loop	38.02433	-84.45701	KU
	38.02433	-84.45701	Metronet
	38.02433	-84.45701	Charter
	38.02433	-84.45701	Windstream
	38.02433	-84.45701	Windstream
2128 WILL FANT DR, 6	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU
	38.02401	-84.45683	KU

Raise secondary drip loop		38.02401	-84.45683	KU
		38.02401	-84.45683	Metronet
		38.02401	-84.45683	Charter
		38.02401	-84.45683	Windstream
		38.02401	-84.45683	Windstream
ec	2134 WILL FANT DR	38.02369	-84.45671	KU
		38.02369	-84.45671	KU
		38.02369	-84.45671	KU
		38.02369	-84.45671	KU
Raise secondary drip loop		38.02369	-84.45671	KU
		38.02369	-84.45671	Metronet
Lower Charter		38.02369	-84.45671	Charter
		38.02369	-84.45671	Charter
		38.02369	-84.45671	Windstream
		38.02369	-84.45671	Windstream
	308 ST GEORGE DR	38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	KU
		38.02557	-84.45709	Metronet
		38.02557	-84.45709	Charter
		38.02557	-84.45709	Windstream
		38.02557	-84.45709	Windstream
	2041 ST MICHAEL DR,	38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	KU
		38.02580	-84.45740	Metronet
Resag Charter		38.02580	-84.45740	Charter
		38.02580	-84.45740	Windstream
		38.02580	-84.45740	Windstream
	2029 ST MICHAEL DR,	38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU
		38.02606	-84.45773	KU

Raise Secondary	38.02606	-84.45773	KU
	38.02606	-84.45773	KU
	38.02606	-84.45773	KU
	38.02606	-84.45773	Metronet
	38.02606	-84.45773	Charter
	38.02606	-84.45773	Charter
	38.02606	-84.45773	Windstream
	38.02606	-84.45773	Windstream
	38.02606	-84.45773	Windstream
35.50 2029 ST MICHAEL DR,	38.02628	-84.45799	KU
	38.02628	-84.45799	KU
	38.02628	-84.45799	KU
	38.02628	-84.45799	KU
	38.02628	-84.45799	KU
	38.02628	-84.45799	Metronet
	38.02628	-84.45799	Charter
	38.02628	-84.45799	Windstream
	38.02628	-84.45799	Windstream
2021 ST MICHAEL DR,	38.02653	-84.45829	KU
	38.02653	-84.45829	KU
	38.02653	-84.45829	KU
	38.02653	-84.45829	KU
	38.02653	-84.45829	KU
	38.02653	-84.45829	KU
	38.02653	-84.45829	KU
	38.02653	-84.45829	Metronet
	38.02653	-84.45829	Charter
	38.02653	-84.45829	Windstream
	38.02653	-84.45829	Windstream

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped	A: DOT Tr	Y/N	Y/N
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Primary	33'6"			Y	N					D: Pedestrian Only 9.5'			
Neutral	26'3"			Y	N								
Secondary	25'6"			Y	N								
Secondary	24'9"			Y	N								
Communication		21'5"		Y	N								
Communication	21'9"	20'5"	39	Y	N								
Communication	20'9"	19'5"		Y	N								
Communication	19'8"	18'5"		Y	N								
Communication	18'8"	17'4"		Y	N								
Communication	17'7"	16'4"	15'10"	Y	N								
Primary		33'10"		N	N					D: Pedestrian Only 9.5'			
Neutral		28'4"		N	N								
Secondary		27'4"		N	N								
Secondary		26'4"		N	N								
Communication		23'0"		N	N								
Communication		22'0"	67	N	N								
Communication		21'0"		N	N								
Communication		20'0"		N	N								
Communication		19'0"		N	N								
Communication		18'0"	14'9"	N	N								
Primary	34'1"			N	N					D: Pedestrian Only 9.5'			
Neutral	28'2"			N	N								
Secondary	27'4"			N	N								
Secondary	26'5"			N	N								
Communication		22'0"		N	N								
Communication	21'0"		60	N	N								
Communication	19'9"			N	N								
Communication	18'9"			N	N								
Communication	17'6"			N	N								
Communication	16'7"		15'0"	N	N								
Primary	33'5"			N	N					D: Pedestrian Only 9.5'			
Primary	32'7"			N	N								
Transformer	27'3"			N	N								

Neutral	25'7"		N	N	
Secondary	24'11"		N	N	
Secondary	24'3"		N	N	
Communication		20'11"	N	N	
OH Guy	20'3"		N	N	
Communication	19'11"		42	N	N
Communication	18'4"			N	N
Communication	17'4"			N	N
Communication	16'4"			N	N
Communication	15'1"	13'8"		N	N
Primary	32'5"			N	N D: Pedestrian Only 9.5'
Neutral	25'5"			N	N
Secondary	24'9"			N	N
Secondary	24'1"			N	N
Communication		20'6"		N	N
Communication	19'6"		45	N	N
Communication	18'7"			N	N
Communication	17'7"			N	N
Communication	16'6"			N	N
Communication	15'6"	14'6"		N	N
Primary	33'5"			N	N D: Pedestrian Only 9.5'
Neutral	26'11"			N	N
Secondary	26'3"			N	N
Secondary	25'6"			N	N
Down Guy	24'7"			N	N
Communication		21'2"		N	N
Communication	20'2"		94	N	N
Communication	18'4"			N	N
Communication	17'5"			N	N
Communication	16'6"			N	N
Communication	15'1"	14'1"		N	N
Primary	30'8"			N	N D: Pedestrian Only 9.5'
Primary	28'4"			N	N
Neutral	23'8"			N	N
OH Guy	21'3"			N	N
Communication		17'5"		N	N
OH Guy	16'5"			N	N
Communication	16'3"			N	N
Communication	15'10"		81	N	N
Communication	15'8"			N	N
Communication	15'4"			N	N
Communication	15'2"			N	N
Communication	13'7"			N	N
Communication	13'1"			N	N
Communication	12'6"	12'9"		N	N
Communication	12'3"			N	N

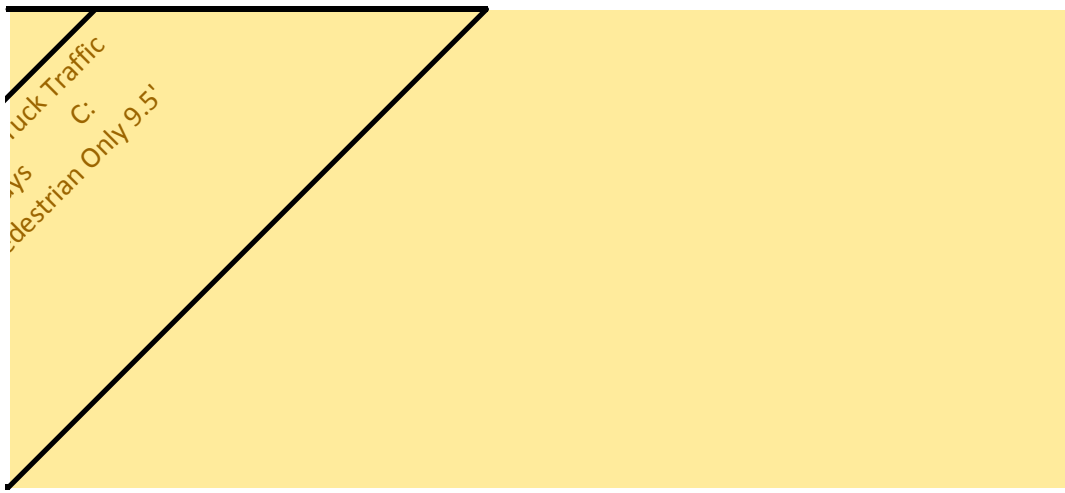
Primary	35'6"		N	N	D: Pedestrian Only 9.5'
Primary	33'1"		N	N	
Neutral	25'6"		N	N	
Secondary	24'6"		N	N	
Secondary	23'10"		N	N	
Secondary	22'9"		N	N	
Communication		16'11"	N	N	
Communication	15'11"		72	N	N
Communication	15'8"			N	N
Communication	14'11"			N	N
Communication	14'0"			N	N
Communication	13'1"	14'4"		N	N
Primary	38'7"		N	N	D: Pedestrian Only 9.5'
Primary	38'1"		N	N	
Transformer	30'8"		N	N	
Neutral	30'0"		N	N	
Secondary	29'1"		N	N	
Secondary	28'3"		N	N	
Secondary	27'4"		N	N	
Streetlight	25'9"		N	N	
Streetlight	25'2"		N	N	
Communication		23'1"	N	N	
Communication	22'1"			N	N
Communication	20'8"			N	N
Communication	20'1"		67	N	N
Communication	19'1"			N	N
Communication	18'2"			N	N
Communication	17'4"			N	N
Communication	16'6"	14'5"		N	N
Primary	37'10"		Y	N	D: Pedestrian Only 9.5'
Transformer	27'7"		Y	N	
Neutral	27'2"		Y	N	
Secondary	26'7"		Y	N	
Secondary	25'10"		Y	N	
Secondary	25'3"		Y	N	
Streetlight	24'6"		Y	N	
Secondary Riser	24'2"		Y	N	
Secondary Drip Loop	23'0"	24'2"	Y	N	
Communication		21'0"	Y	N	
Communication	21'10"	20'0"	Y	N	
Communication	21'0"	19'1"	49	Y	N
Communication	20'3"	18'2"	Y	N	
Communication	19'1"	17'3"	Y	N	
Communication	18'2"	16'3"	Y	N	

Communication	17'3"	15'3"	15'8"	Y	N	
Primary	35'11"			N	N	D: Pedestrian Only 9.5'
Primary	35'1"			N	N	
Transformer	30'7"			N	N	
Neutral	30'5"			N	N	
Secondary	29'1"			N	N	
Secondary	27'11"			N	N	
Streetlight	27'7"			N	N	
Secondary	26'10"			N	N	
OH Guy	25'9"			N	N	
Communication		21'5"		N	N	
Communication	20'5"		85	N	N	
Communication	19'1"			N	N	
Communication	18'1"			N	N	
Communication	17'0"			N	N	
Communication	16'2"		12'10"	N	N	
Primary	38'4"			N	N	D: Pedestrian Only 9.5'
Primary	37'10"			N	N	
Transformer	28'10"			N	N	
Neutral	27'9"			N	N	
Secondary	27'0"			N	N	
Secondary	26'2"			N	N	
Secondary	25'6"			N	N	
Secondary Drip Loop	24'11"			N	N	
Streetlight	23'10"			N	N	
Communication		18'9"		N	N	
Communication	17'9"		99	N	N	
Communication	16'8"			N	N	
Communication	15'8"			N	N	
Communication	14'5"		15'0"	N	N	
Primary	39'11"			Y	N	D: Pedestrian Only 9.5'
Primary	39'3"			Y	N	
Primary	35'10"			Y	N	
Neutral	25'11"			Y	N	
Secondary	24'8"			Y	N	
Communication		21'4"		Y	N	
Communication	22'3"	20'4"	49	Y	N	
Communication	20'11"	19'4"		Y	N	
Communication	19'11"	18'4"	18'7"	Y	N	
Communication	18'9"	17'4"		Y	N	
Communication	18'0"	16'4"		Y	N	
Primary	34'1"			N	N	D: Pedestrian Only 9.5'
Neutral	26'9"			N	N	

Secondary	25'10"			N	N	
Secondary	25'0"			N	N	
Communication		20'11"		N	N	
Communication	19'11"		70	N	N	
Communication	19'1"		15'8"	N	N	
Primary	33'0"			N	N	D: Pedestrian Only 9.5'
Transformer	25'10"			N	N	
Neutral	25'4"			N	N	
Secondary	24'7"			N	N	
Secondary	23'11"			N	N	
Communication		20'4"		N	N	
Communication	20'4"	19'4"	57	N	N	
Communication	18'11"	18'4"	16'0"	N	N	
Primary	32'6"			N	N	B:Residential/Over Driveways
Neutral	25'10"			N	N	
OH Guy	23'5"			N	N	
Communication		21'2"		N	N	
Communication	20'2"		69	N	N	
Communication	18'5"		18'6"	N	N	
Primary	32'7"			Y	Y	D: Pedestrian Only 9.5'
Neutral	25'6"			Y	Y	
Secondary	24'1"			Y	Y	
Secondary	23'6"			Y	Y	
Streetlight	21'5"			Y	Y	
Communication		20'2"		Y	Y	
Communication	20'8"	19'2"	20	Y	Y	
Communication	19'8"	18'2"	12'0"	Y	Y	
Primary	33'5"			Y	N	D: Pedestrian Only 9.5'
Transformer	26'7"			Y	N	
Neutral	25'6"			Y	N	
Secondary	24'9"			Y	N	
Secondary	24'0"			Y	N	
Secondary Drip Loop	21'11"	23'7"		Y	N	
Communication		20'3"		Y	N	
Communication	19'3"			Y	N	
Communication	17'10"		45	Y	N	
Communication	17'5"		17'1"	Y	N	
Primary	32'10"			Y	N	D: Pedestrian Only 9.5'
Transformer	25'8"			Y	N	
Neutral	24'8"			Y	N	
Secondary	23'11"			Y	N	
Secondary	23'3"			Y	N	

Secondary Drip Loop	22'8"	23'3"		Y	N	
Communication		19'11"		Y	N	
Communication	18'11"		42	Y	N	
Communication	18'3"			Y	N	
Communication	17'8"	11'0"		Y	N	
Primary	31'10"			Y	N	N/A
Neutral	25'3"			Y	N	
Secondary	24'8"			Y	N	
Secondary	24'0"			Y	N	
Secondary Drip Loop	21'7"	24'0"		Y	N	
Communication		20'8"		Y	N	
OH Guy	19'11"	19'8"		Y	N	
Communication	18'8"		N/A	Y	N	
Communication	18'3"			Y	N	
Communication	17'8"	N/A		Y	N	
Primary	39'3"			N	N	B:Residential/Over Driveways
Primary	38'8"			N	N	
Capacitor Bank	32'3"			N	N	
Neutral	31'7"			N	N	
Secondary	30'6"			N	N	
Secondary Riser	28'4"			N	N	
OH Guy	28'1"			N	N	
Streetlight	25'2"			N	N	
Communication		22'5"		N	N	
Communication	21'5"		71	N	N	
Communication	20'11"			N	N	
Communication	20'3"	18'10"		N	N	
Primary	36'7"			N	Y	D: Pedestrian Only 9.5'
Transformer	27'4"			N	Y	
Neutral	25'11"			N	Y	
Secondary	25'3"			N	Y	
Secondary	24'7'			N	Y	
Secondary	23'10"			N	Y	
OH Guy	22'6"			N	Y	
Communication		20'6"		N	Y	
Communication	19'6"		14	N	Y	
Communication	18'8"			N	Y	
Communication	17'9"	13'10"		N	Y	
Primary	37'10"			N	N	D: Pedestrian Only 9.5'
Transformer	28'6"			N	N	
Neutral	25'9"			N	N	
Secondary	25'1"			N	N	
Secondary	24'4"			N	N	

Secondary	23'4"	24'8"		N	N	
Streetlight	22'3"			N	N	
Streetlight Drip Loop	21'1"			N	N	
Communication		20'0"		N	N	
Communication	20'1"		63	N	N	
Communication	19'1"			N	N	
Communication	18'1"			N	N	
Communication	16'9"			N	N	
Communication	15'9"	14'5"		N	N	
Primary	36'8"			N	N	D: Pedestrian Only 9.5'
Neutral	29'0"			N	N	
Secondary	28'3"			N	N	
Secondary	27'6"			N	N	
Streetlight	25'9"			N	N	
Communication		19'7"		N	N	
Communication	18'7"		91	N	N	
Communication	17'7"			N	N	
Communication	16'7"	13'11"		N	N	
Primary	34'7"			N	N	D: Pedestrian Only 9.5'
Transformer	27'0"			N	N	
Neutral	26'9"			N	N	
Secondary	26'1"			N	N	
Secondary	25'4"			N	N	
Streetlight	23'10"			N	N	
Secondary Drip Loop	23'1"			N	N	
Communication		18'11"		N	N	
Communication	17'11"		73	N	N	
Communication	16'0"			N	N	
Communication	15'3"	16'0"		N	N	



1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

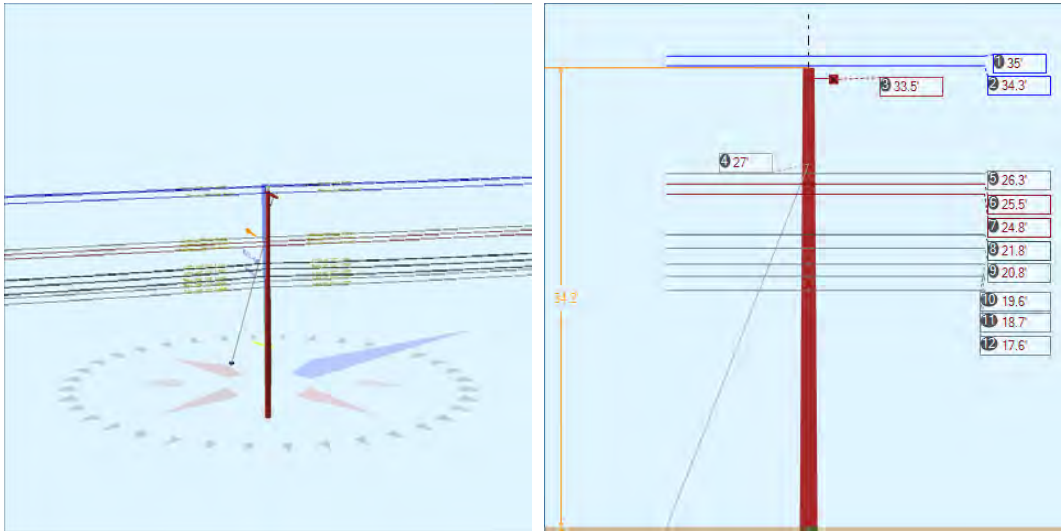
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX02-03	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
Footage AERIAL (TENSION SPAN)	ROADS
Footage AERIAL (SLACK SPAN)	WORK POINTS
Footage NEW / PROPOSED TRENCH	RAILROADS
Footage EXISTING INHERITED TRENCH	

Pole Num:	63W - NT	Pole Length / Class:	40 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022646 Deg	Longitude:	-84.456415 Deg	Elevation:	881.730368443642		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	16.9	0.0
Groundline	16.9	0.0
Vertical	0.8	19.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,436	300.2
Groundline	20,436	300.2
GL Allowable	124,251	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.0	290.0		0.0	300.0	9.6	120.0
? EHS 3/8 (Down)			27.0	0.0	300.0	15.2	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 300.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	236	24.4	6,968	34.1	5.6	380	479	4	384	5.6
Comms	503	52.1	9,366	45.8	7.5	511	1,073	8	519	7.6
GuyBraces	1	0.1	36	0.2	0.0	2	10	0	2	0.0
Pole	216	22.3	3,781	18.5	3.0	206	2,528	19	225	3.3
Crossarms	1	0.1	41	0.2	0.0	2	95	1	3	0.0
Insulators	9	0.9	244	1.2	0.2	13	106	1	14	0.2
Pole Load	966	100.0	20,436	100.0	16.5	1,115	4,291	32	1,147	16.9
Pole Reserve Capacity			103,815		83.6	5,685			5,653	83.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 300.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	365	37.8	9,745	47.7	7.8	532	748	6	537	7.9
Unknown, COMMUNICATION	384	39.8	6,869	33.6	5.5	375	920	7	382	5.6
Pole	216	22.3	3,781	18.5	3.0	206	2,528	19	225	3.3
<Undefined>	1	0.1	41	0.2	0.0	2	95	1	3	0.0
Totals:	966	100.0	20,436	100.0	16.5	1,115	4,291	32	1,147	16.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	0.00	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	594	0	1,126	1,720
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	0.00	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,440	0	1,099	-341
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	582	-151	1,103	1,533
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,410	-148	1,076	-482
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	582	152	1,103	1,836
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.31	45.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,410	148	1,076	-186

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.30	7.31	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	446	-25	845	1,266
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.30	7.31	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,081	-24	825	-280
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.53	7.36	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	433	-25	820	1,228
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.53	7.36	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,049	-24	800	-273
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	7.41	0.3980	0.28	0.145	122.7	29.8	122.7	2,128	420	-25	796	1,191
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	7.41	0.3980	0.27	0.145	119.7	209.3	119.7	2,128	-1,018	-24	777	-265
Totals:											-4,353	-146	11,447	6,948	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	KU, UTILITY	21.76	7.61	1.3300	1.68	0.337	122.7	29.8	122.7	925	160	-61	1,425	1,524
CATV	CATV 1.0	KU, UTILITY	21.76	7.61	1.3300	1.63	0.337	119.7	209.3	119.7	925	-389	-60	1,390	942
Telco	TELE 1.5	Unknown, COMMUNICATION	20.76	7.68	1.5000	1.96	0.900	122.7	29.8	122.7	2,000	331	-108	1,486	1,708
Telco	TELE 1.5	Unknown, COMMUNICATION	20.76	7.68	1.5000	1.90	0.900	119.7	209.3	119.7	2,000	-801	-105	1,449	543
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.75	1.5000	1.96	0.900	122.7	29.8	122.7	2,000	311	-109	1,400	1,602
Telco	TELE 1.5	Unknown, COMMUNICATION	19.56	7.75	1.5000	1.90	0.900	119.7	209.3	119.7	2,000	-755	-106	1,365	504
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.66	7.81	0.6570	1.67	0.190	122.7	29.8	122.7	750	111	-36	772	848
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.66	7.81	0.6570	1.62	0.190	119.7	209.3	119.7	750	-270	-35	754	449
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.62	7.88	0.6570	1.67	0.190	122.7	29.8	122.7	750	105	-36	729	798
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.62	7.88	0.6570	1.62	0.190	119.7	209.3	119.7	750	-255	-35	712	421
Totals:											-1,452	-691	11,482	9,339	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	33.50	6.09	29.8	29.8	50.00	4.50	3.50	96.00	0	41	41
Totals:										0	41	41

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.16	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	45.00	112.1	0.0	6.00	3.50	7.50	-43	43	0
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	-45.00	307.5	0.0	6.00	3.50	7.50	43	43	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.30	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.53	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.77	0.00	119.6	29.6	2.00	3.00	3.19	-2	12	9
Bolt	Three Bolt	KU, UTILITY	21.76	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.76	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.56	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.66	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	119.6	29.6	5.00	3.00	0.00	-6	0	-6
Totals:										-38	281	243

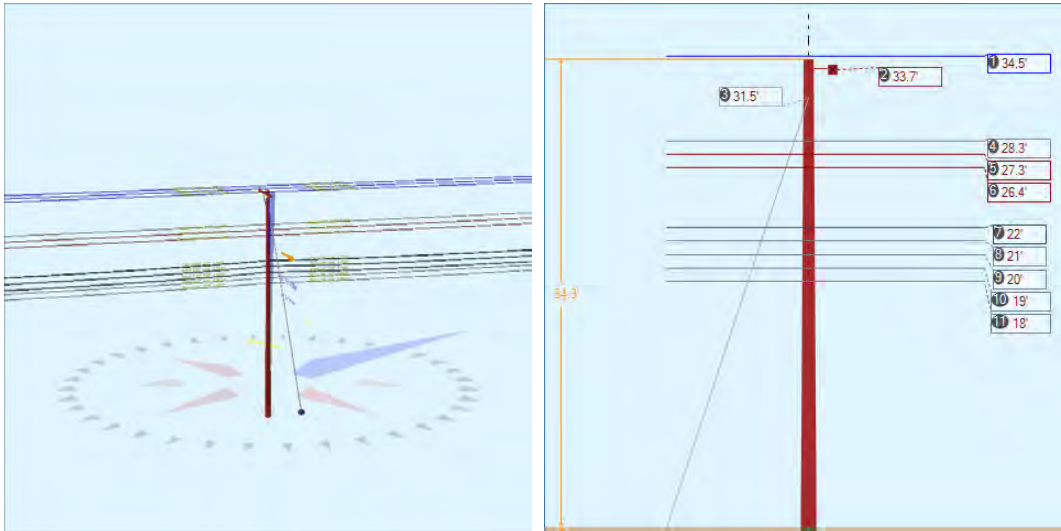
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	27.01	0.00	16.00	0.375	75.00	290.0	59.1	0.273	29.69	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,106	1,914	0	0	0	0	36
Totals:										0	0	0	36

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.00	290.0	20,000	1.00	20,000	1,914	0	9.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.43	32.92	12.23	8.96	8.60	13.08	1.60e+6	60.00	57.00	34.16	542,638	5363.82	125.00

Pole Num:	64W - 28930-2163	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022937 Deg	Longitude:	-84.456227 Deg	Elevation:	884.360812389547		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.7	119.3
Groundline	19.7	119.3
Vertical	1.3	296.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,219	119.3
Groundline	16,219	119.3
GL Allowable	84,503	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.2	116.5		0.0	119.3	9.2	300.0
? EHS 3/8 (Down)			31.5	0.0	119.3	14.7	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	144	18.2	4,288	26.4	5.1	347	472	5	352	5.2
Comms	451	57.0	8,458	52.2	10.0	685	1,058	10	695	10.2
GuyBraces	1	0.1	35	0.2	0.0	3	11	0	3	0.0
Pole	188	23.8	3,263	20.1	3.9	264	1,918	18	283	4.2
Crossarms	1	0.2	41	0.3	0.1	3	95	1	4	0.1
Insulators	5	0.7	134	0.8	0.2	11	93	1	12	0.2
Pole Load	790	100.0	16,219	100.0	19.2	1,314	3,647	35	1,349	19.8
Pole Reserve Capacity			68,284		80.8	5,486			5,451	80.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 120.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	150	19.0	4,484	27.7	5.3	363	529	5	368	5.4
Unknown, COMMUNICATION	451	57.0	8,430	52.0	10.0	683	1,105	11	693	10.2
Pole	188	23.8	3,263	20.1	3.9	264	1,918	18	283	4.2
<Undefined>	1	0.2	41	0.3	0.1	3	95	1	4	0.1
Totals:	790	100.0	16,219	100.0	19.2	1,314	3,647	35	1,349	19.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	5.45	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	0	1,051	-648
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	5.45	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	0	1,110	1,475
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	-143	1,051	-791
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	-151	1,110	1,324
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,699	144	1,051	-505
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.53	45.33	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	365	152	1,110	1,627

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.30	6.53	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,392	-21	861	-552
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.30	6.53	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	299	-22	909	1,187
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.34	6.58	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,345	-21	832	-534
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.34	6.58	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	289	-22	879	1,145
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.37	6.64	0.3980	0.25	0.145	116.2	29.0	116.2	2,128	-1,297	-21	802	-516
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.37	6.64	0.3980	0.28	0.145	122.7	209.8	122.7	2,128	279	-22	847	1,104
Totals:											-7,171	-128	11,614	4,315	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.96	6.91	1.3300	1.57	0.337	116.2	29.0	116.2	925	-469	-53	1,362	839
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.96	6.91	1.3300	1.68	0.337	122.7	209.8	122.7	925	101	-56	1,438	1,483
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.01	6.97	1.5000	1.83	0.900	116.2	29.0	116.2	2,000	-971	-93	1,423	360
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.01	6.97	1.5000	1.96	0.900	122.7	209.8	122.7	2,000	209	-98	1,503	1,614
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.96	7.03	1.5000	1.83	0.900	116.2	29.0	116.2	2,000	-923	-93	1,353	336
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.96	7.03	1.5000	1.96	0.900	122.7	209.8	122.7	2,000	198	-99	1,428	1,528
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.98	7.09	0.6570	1.56	0.190	116.2	29.0	116.2	750	-329	-31	744	384
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.98	7.09	0.6570	1.67	0.190	122.7	209.8	122.7	750	71	-33	786	824
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.15	0.6570	1.56	0.190	116.2	29.0	116.2	750	-313	-31	707	363
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.15	0.6570	1.67	0.190	122.7	209.8	122.7	750	67	-33	746	781
		COMMUNICATION													
Totals:											-2,359	-618	11,490	8,513	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	33.72	5.45	209.4	209.4	50.00	4.50	3.50	96.00	0	41	42
Totals:										0	41	42

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	0.00	209.4	0.0	6.00	3.50	7.50	0	43	43
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	45.00	292.5	0.0	6.00	3.50	7.50	-43	43	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.90	-45.00	126.3	0.0	6.00	3.50	7.50	43	43	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.30	0.00	299.4	209.4	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.34	0.00	299.4	209.4	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.37	0.00	299.4	209.4	2.00	3.00	3.19	-2	12	10
Bolt	Three Bolt	Unknown, COMMUNICATION	21.96	0.00	299.4	209.4	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.01	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.96	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.98	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.03	0.00	299.4	209.4	5.00	3.00	0.00	-6	0	-6
Totals:										-34	168	134

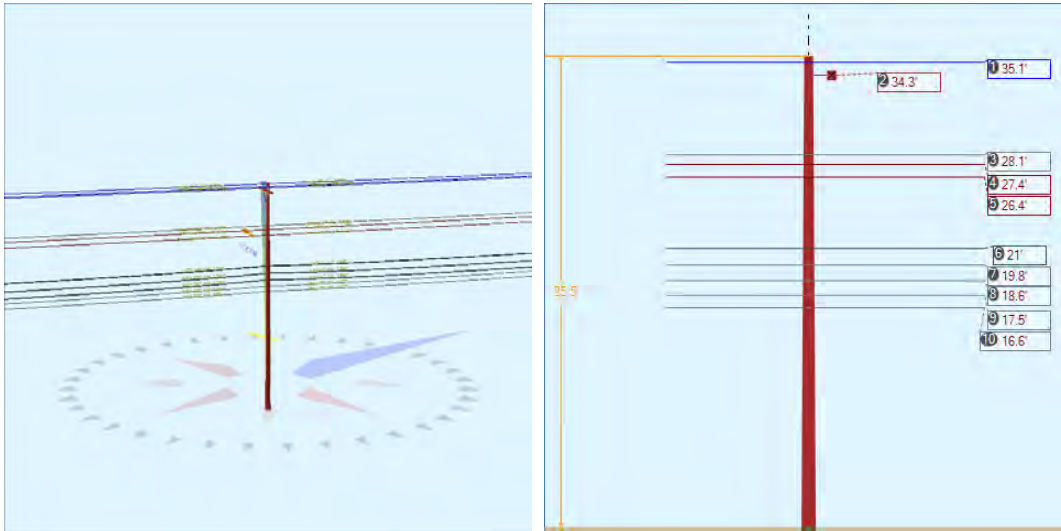
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	31.47	0.00	17.21	0.375	75.00	116.5	61.1	0.273	34.22	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,031	1,846	0	0	0	0	35
Totals:										0	0	0	35

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	17.21	116.5	20,000	1.00	20,000	1,846	0	9.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.25	33.22	10.68	8.36	7.32	11.50	1.60e+6	60.00	57.00	34.30	290,016	2805.47	76.92

Pole Num:	65W - 28930-2157	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.45	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023250 Deg	Longitude:	-84.456018 Deg	Elevation:	883.385342969925		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	58.6	0.0
Groundline	58.6	0.0
Vertical	11.9	20.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	41,169	297.9
Groundline	41,169	297.9
GL Allowable	70,946	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 297.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	743	44.4	23,067	56.0	32.5	2,215	458	5	2,220	32.6
Comms	741	44.3	14,620	35.5	20.6	1,404	1,026	11	1,415	20.8
Pole	182	10.9	3,265	7.9	4.6	313	1,730	19	332	4.9
Crossarms	1	0.1	42	0.1	0.1	4	95	1	5	0.1
Insulators	5	0.3	175	0.4	0.3	17	93	1	18	0.3
Pole Load	1,672	100.0	41,169	100.0	58.0	3,953	3,401	37	3,990	58.7
Pole Reserve Capacity			29,777		42.0	2,847			2,810	41.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 297.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	748	44.7	23,215	56.4	32.7	2,229	503	5	2,234	32.9
Unknown, COMMUNICATION	741	44.3	14,647	35.6	20.7	1,406	1,073	12	1,418	20.9
Pole	182	10.9	3,265	7.9	4.6	313	1,730	19	332	4.9
<Undefined>	1	0.1	42	0.1	0.1	4	95	1	5	0.1
Totals:	1,672	100.0	41,169	100.0	58.0	3,953	3,401	37	3,990	58.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	24.55	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	76	1,062	1,931
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	24.55	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	77	1,068	2,568
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	18.73	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	-57	1,062	1,798
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	18.73	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	-57	1,068	2,434
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	36.37	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	793	-114	1,062	1,741
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.09	36.37	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,423	-115	1,068	2,377
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.09	6.28	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	635	20	849	1,504

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.09	6.28	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,139	20	855	2,013
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.38	6.32	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	619	20	828	1,467
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.38	6.32	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,110	20	833	1,963
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.42	6.38	0.3980	0.25	0.145	115.5	27.3	115.5	2,128	597	20	799	1,416
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.42	6.38	0.3980	0.25	0.145	116.2	209.0	116.2	2,128	1,071	20	804	1,895
Totals:											11,820	-70	11,357	23,107	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.04	6.69	1.3300	1.56	0.337	115.5	27.3	115.5	925	207	51	1,297	1,554
CATV	CATV 1.0	Unknown, COMMUNICATION	21.04	6.69	1.3300	1.57	0.337	116.2	209.0	116.2	925	371	51	1,304	1,726
Telco	TELE 1.5	Unknown, COMMUNICATION	19.78	6.76	1.5000	1.82	0.900	115.5	27.3	115.5	2,000	420	89	1,332	1,841
Telco	TELE 1.5	Unknown, COMMUNICATION	19.78	6.76	1.5000	1.83	0.900	116.2	209.0	116.2	2,000	754	90	1,340	2,184
Telco	TELE 1.5	Unknown, COMMUNICATION	18.61	6.83	1.5000	1.82	0.900	115.5	27.3	115.5	2,000	395	90	1,253	1,739
Telco	TELE 1.5	Unknown, COMMUNICATION	18.61	6.83	1.5000	1.83	0.900	116.2	209.0	116.2	2,000	709	91	1,261	2,061
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.50	6.90	0.6570	1.55	0.190	115.5	27.3	115.5	750	139	30	682	851
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.50	6.90	0.6570	1.56	0.190	116.2	209.0	116.2	750	250	30	686	966
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.57	6.95	0.6570	1.55	0.190	115.5	27.3	115.5	750	132	30	646	808
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.57	6.95	0.6570	1.56	0.190	116.2	209.0	116.2	750	237	30	650	917
Totals:											3,613	582	10,450	14,645	

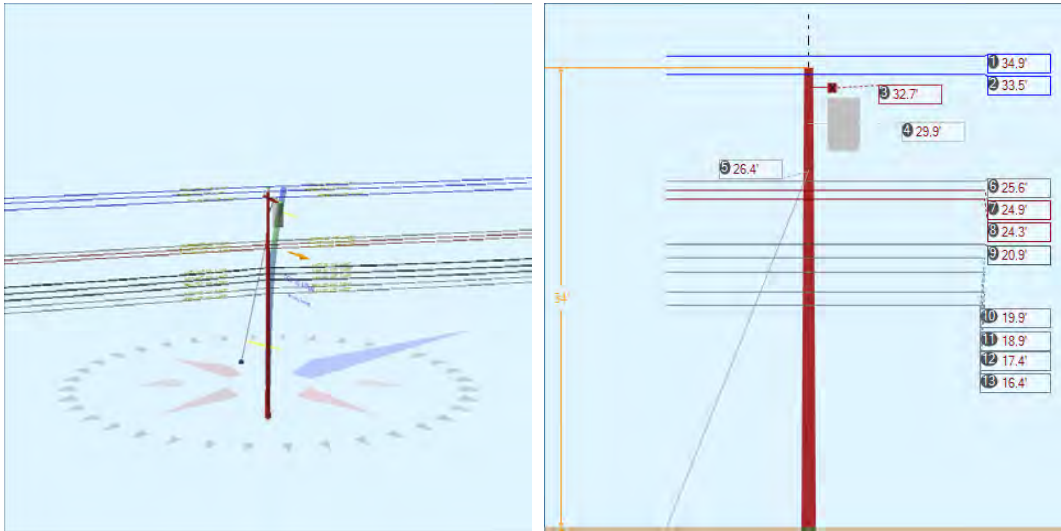
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	34.28	5.17	208.2	208.2	50.00	4.50	3.50	96.00	0	42	42
Totals:										0	42	42

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.47	24.00	286.0	0.0	6.00	3.50	7.50	23	44	67
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.47	-18.00	134.2	0.0	6.00	3.50	7.50	-17	44	27
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.47	-36.00	126.3	0.0	6.00	3.50	7.50	-34	44	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.09	0.00	298.2	208.2	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.38	0.00	298.2	208.2	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.42	0.00	298.2	208.2	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.04	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.78	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.61	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.50	0.00	298.2	208.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.57	0.00	298.2	208.2	5.00	3.00	0.00	6	0	6
Totals:										5	171	175

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.26	33.28	10.06	13.60	6.69	10.85	1.60e+6	60.00	57.00	35.55	28,498	285.79	8.40

Pole Num:	66W - 28930-2151	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.99	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023519 Deg	Longitude:	-84.455864 Deg	Elevation:	915.900661817411		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.1	26.7
Groundline	11.4	26.3
Vertical	7.3	117.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	5,331	92.1
Groundline	5,152	102.0
GL Allowable	67,470	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.2	297.0		19.1	110.0	19.2	120.0
? EHS 3/8 (Down)			26.4	27.6	110.0	30.5	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 102.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,177	244.2	19,416	376.9	28.8	3,512	497	6	3,518	51.7
Comms	969	200.9	10,615	206.0	15.7	1,920	1,113	12	1,933	28.4
GuyBraces	-1,900	-394.0	-27,922	-542.0	-41.4	-5,051	4,924	55	-4,996	-73.5
PowerEquipments	54	11.3	1,178	22.9	1.8	213	1,216	14	227	3.3
Pole	170	35.3	1,638	31.8	2.4	296	1,619	18	315	4.6
Crossarms	3	0.5	55	1.1	0.1	10	95	1	11	0.2
Insulators	9	1.8	172	3.3	0.3	31	106	1	32	0.5
Pole Load	482	100.0	5,152	100.0	7.6	932	9,570	107	1,039	15.3
Pole Reserve Capacity			62,318		92.4	5,868			5,761	84.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 102.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-660	-136.8	-7,170	-139.2	-10.6	-1,297	6,695	75	-1,222	-18.0
Unknown, COMMUNICATION	969	200.9	10,629	206.3	15.8	1,923	1,161	13	1,936	28.5
Pole	170	35.3	1,638	31.8	2.4	296	1,619	18	315	4.6
<Undefined>	3	0.5	55	1.1	0.1	10	95	1	11	0.2
Totals:	482	100.0	5,152	100.0	7.6	932	9,570	107	1,039	15.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.88	0.00	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	30,225	0	1,161	31,386
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.88	0.00	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-25,547	0	1,010	-24,538
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	29,054	166	1,116	30,337
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-24,558	141	970	-23,446
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	29,054	-155	1,116	30,015

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.53	45.30	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-24,558	-132	970	-23,719
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.61	6.33	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	22,182	23	852	23,057
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.61	6.33	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-18,749	19	741	-17,989
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.94	6.37	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	21,602	23	830	22,455
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.94	6.37	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-18,259	19	722	-17,518
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.29	6.41	0.3980	0.34	0.145	135.9	30.2	135.9	2,128	21,039	23	808	21,871
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.29	6.41	0.3980	0.25	0.145	115.5	207.3	115.5	2,128	-17,783	19	703	-17,061
Totals:											23,702	147	11,001	34,850	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.94	6.61	1.3300	1.90	0.337	135.9	30.2	135.9	925	7,885	56	1,420	9,362
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.94	6.61	1.3300	1.56	0.337	115.5	207.3	115.5	925	-6,665	48	1,235	-5,382
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.67	1.5000	2.22	0.900	135.9	30.2	136.0	2,000	16,233	99	1,478	17,810
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.67	1.5000	1.82	0.900	115.5	207.3	115.5	2,000	-13,721	84	1,285	-12,352
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.88	6.73	1.5000	2.22	0.900	135.9	30.2	136.0	2,000	15,369	100	1,399	16,869
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.88	6.73	1.5000	1.82	0.900	115.5	207.3	115.5	2,000	-12,991	85	1,217	-11,689
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	6.81	0.6570	1.88	0.190	135.9	30.2	135.9	750	5,316	33	747	6,096
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	6.81	0.6570	1.55	0.190	115.5	207.3	115.5	750	-4,493	28	649	-3,816
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.44	6.87	0.6570	1.88	0.190	135.9	30.2	135.9	750	5,017	33	705	5,755
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.44	6.87	0.6570	1.55	0.190	115.5	207.3	115.5	750	-4,240	28	613	-3,599
		COMMUNICATION													
Totals:											7,710	596	10,747	19,053	

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	29.87	21.58	25.0	25.0	640.00	47.00	--	24.00	--	494	1,622	2,115
Totals:												494	1,622	2,115

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		32.72	5.17	28.8	28.8	50.00	4.50	3.50	96.00	12	86	98	
Totals:												12	86	98

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.01	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157		
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.91	45.00	112.2	0.0	6.00	3.50	7.50	42	42	84		
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.91	-45.00	305.3	0.0	6.00	3.50	7.50	-40	42	2		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.61	0.00	118.8	28.8	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.94	0.00	118.8	28.8	2.00	3.00	3.19	2	11	13		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.29	0.00	118.8	28.8	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	20.94	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.94	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.88	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.42	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	16.44	0.00	118.8	28.8	5.00	3.00	0.00	5	0	5		
Totals:												34	275	309

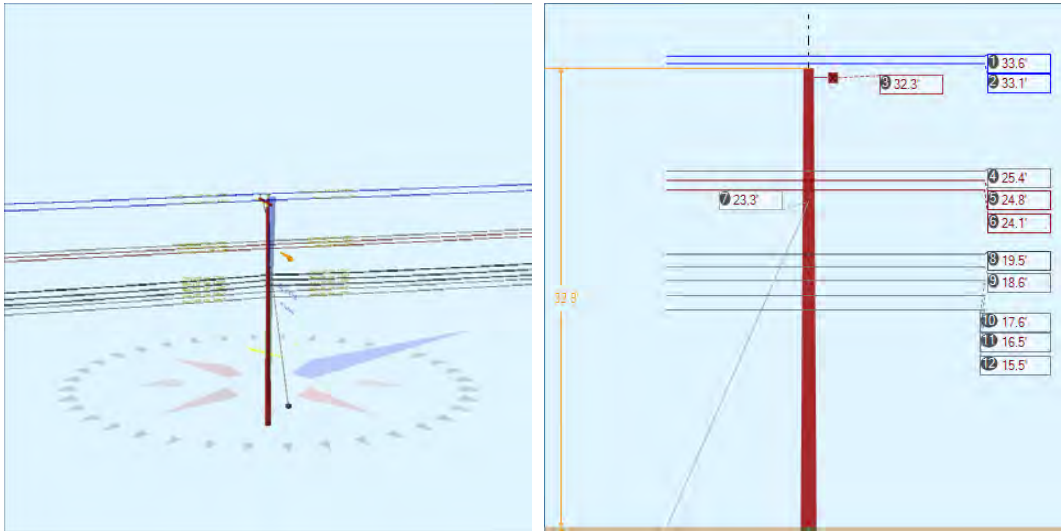
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	26.38	0.00	16.15	0.375	75.00	297.0	58.3	0.273	29.27	0.70

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,222	3,838	3,821	3,252	2,007	-1,938	-50,118
Totals:										3,252	2,007	-1,938	-50,118

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.15	297.0	20,000	1.00	20,000	3,838	3,821	19.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.79	34.08	9.68	14.51	6.69	10.67	1.60e+6	60.00	57.00	34.01	130,476	1310.91	13.70

Pole Num:	67W - 28930-2143	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.23	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023825 Deg	Longitude:	-84.455606 Deg	Elevation:	879.398984248307		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.2	120.0
Groundline	24.2	120.0
Vertical	1.2	300.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,082	120.4
Groundline	19,082	120.4
GL Allowable	80,463	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.5	120.4		0.0	120.0	11.6	300.0
? EHS 3/8 (Down)			23.3	0.0	120.0	18.3	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 120.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	249	25.9	7,098	37.2	8.8	598	495	5	603	8.9
Comms	522	54.4	8,672	45.5	10.8	731	1,109	11	742	10.9
GuyBraces	1	0.1	26	0.1	0.0	2	8	0	2	0.0
Pole	178	18.6	3,010	15.8	3.7	254	1,795	18	272	4.0
Crossarms	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Insulators	9	0.9	237	1.2	0.3	20	106	1	21	0.3
Pole Load	959	100.0	19,082	100.0	23.7	1,609	3,608	36	1,645	24.2
Pole Reserve Capacity			61,381		76.3	5,191			5,155	75.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 120.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	258	26.9	7,388	38.7	9.2	623	562	6	628	9.2
Unknown, COMMUNICATION	522	54.4	8,644	45.3	10.7	729	1,156	12	740	10.9
Pole	178	18.6	3,010	15.8	3.7	254	1,795	18	272	4.0
<Undefined>	1	0.1	40	0.2	0.1	3	95	1	4	0.1
Totals:	959	100.0	19,082	100.0	23.7	1,609	3,608	36	1,645	24.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.64	0.00	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,087	0	1,009	-78
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.64	0.00	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	275	0	1,198	1,473
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,070	-141	993	-218
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	270	-168	1,179	1,282
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-1,070	141	993	64
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.10	45.33	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	270	168	1,179	1,617

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.61	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-821	-21	762	-80
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.61	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	208	-25	905	1,088
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.65	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-800	-21	742	-78
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.65	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	202	-25	882	1,059
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.08	6.69	0.3980	0.25	0.145	114.5	29.7	114.5	2,128	-778	-21	722	-77
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.08	6.69	0.3980	0.34	0.145	135.9	210.2	135.9	2,128	197	-25	857	1,029
Totals:											-4,204	-136	11,422	7,081	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.49	6.97	1.3300	1.55	0.337	114.5	29.7	114.5	925	-274	-52	1,191	865
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.49	6.97	1.3300	1.90	0.337	135.9	210.2	135.9	925	69	-62	1,414	1,421
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.59	7.02	1.5000	1.80	0.900	114.5	29.7	114.5	2,000	-564	-92	1,241	585
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.59	7.02	1.5000	2.23	0.900	135.9	210.2	136.0	2,000	143	-109	1,474	1,508
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.62	7.08	1.5000	1.80	0.900	114.5	29.7	114.5	2,000	-535	-93	1,176	549
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.62	7.08	1.5000	2.23	0.900	135.9	210.2	136.0	2,000	135	-110	1,397	1,422
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.54	7.15	0.6570	1.54	0.190	114.5	29.7	114.5	750	-188	-31	639	420
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.54	7.15	0.6570	1.89	0.190	135.9	210.2	135.9	750	48	-36	759	770
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.53	7.21	0.6570	1.54	0.190	114.5	29.7	114.5	750	-177	-31	600	392
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.53	7.21	0.6570	1.89	0.190	135.9	210.2	135.9	750	45	-37	712	720
		COMMUNICATION													
Totals:											-1,299	-653	10,602	8,651	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	32.29	5.44	209.9	209.9	50.00	4.50	3.50	96.00	0	40	40
Totals:										0	40	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.77	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	45.00	293.0	0.0	6.00	3.50	7.50	-43	42	-1
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	-45.00	126.8	0.0	6.00	3.50	7.50	43	42	84
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.42	0.00	299.9	209.9	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.76	0.00	299.9	209.9	2.00	3.00	3.19	-2	12	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.08	0.00	299.9	209.9	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	19.49	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.59	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.62	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.54	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.53	0.00	299.9	209.9	5.00	3.00	0.00	-6	0	-6
Totals:										-34	270	236

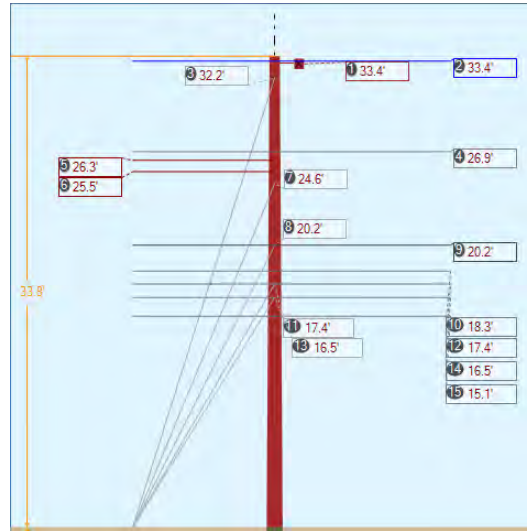
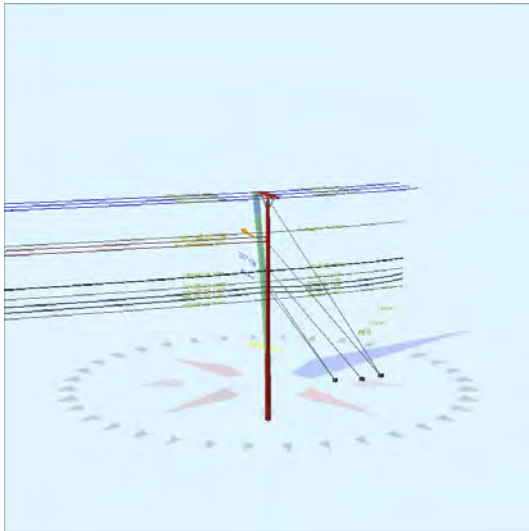
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	23.25	0.00	13.46	0.375	75.00	120.4	59.7	0.273	25.19	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,542	2,310	0	0	0	0	26
Totals:										0	0	0	26

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	13.46	120.4	20,000	1.00	20,000	2,310	0	11.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.10	33.08	10.54	8.08	7.32	11.31	1.60e+6	60.00	57.00	32.77	309,510	3006.40	83.33

Pole Num:	68W - 28930-2141	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.25	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024129 Deg	Longitude:	-84.455415 Deg	Elevation:	893.605450627136		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.7	297.0
Groundline	30.7	297.0
Vertical	19.0	210.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,506	263.8
Groundline	21,506	263.8
GL Allowable	83,051	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.1	28.5		75.8	297.0	78.9	175.0
? EHS 3/8 (Down)			32.2	54.8	297.0	61.8	210.0
? EHS 3/8 (Down)			24.6	54.8	297.0	63.7	140.0
? Single Helix Anchor	17.1	32.2		18.5	297.0	18.5	292.8
? EHS 1/4 (Down)			20.2	61.7	297.0	67.9	292.8
? Single Helix Anchor	12.3	30.5		33.2	297.0	33.3	250.0
? EHS 1/4 (Down)			17.4	55.3	297.0	61.0	260.0
? EHS 1/4 (Down)			16.5	55.8	297.0	61.6	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 263.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,777	350.9	94,703	440.4	114.0	13,650	216	2	13,652	200.8
Comms	4,521	274.6	44,786	208.3	53.9	6,455	628	6	6,462	95.0
GuyBraces	-8,832	-536.4	-119,985	-557.9	-144.5	-17,295	30,759	300	-16,995	-249.9
Pole	155	9.4	1,508	7.0	1.8	217	1,874	18	236	3.5
Crossarms	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Insulators	25	1.5	494	2.3	0.6	71	127	1	72	1.1
Pole Load	1,646	100.0	21,506	100.0	25.9	3,100	33,794	329	3,429	50.4
Pole Reserve Capacity			61,545		74.1	3,700			3,371	49.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 263.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	696	42.3	13,737	63.9	16.5	1,980	18,613	181	2,161	31.8
Unknown, COMMUNICATION	796	48.3	6,260	29.1	7.5	902	13,117	128	1,030	15.2
Pole	155	9.4	1,508	7.0	1.8	217	1,874	18	236	3.5
<Undefined>	0	0.0	0	0.0	0.0	0	190	2	2	0.0
Totals:	1,646	100.0	21,506	100.0	25.9	3,100	33,794	329	3,429	50.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	7.34	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	-1	197	-8,138
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	46.53	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	2	197	-8,136
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	44.64	0.3250	0.01	0.107	27.3	19.1	27.3	450	-8,334	-2	197	-8,140
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	18.17	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	5	764	31,819
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	49.41	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	9	764	31,824
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.39	47.63	0.3250	0.33	0.107	114.5	207.7	114.5	1,284	31,051	-6	764	31,808
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.90	6.58	0.3250	0.01	0.107	27.3	19.1	27.3	150	-2,238	4	158	-2,076
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.90	6.58	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	32,811	15	615	33,442
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.28	6.62	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	32,046	10	601	32,657
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.47	6.66	0.3250	0.22	0.107	114.5	207.7	114.5	1,684	31,064	10	583	31,657
Totals:										161,833	45	4,839	166,717	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.21	6.98	1.3300	0.33	0.337	27.3	19.1	27.3	150	-1,681	11	264	-1,406
CATV	CATV 1.0 Unknown, COMMUNICATION	20.21	6.98	1.3300	1.55	0.337	114.5	207.7	114.5	925	13,537	46	1,025	14,608

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.35	7.10	0.6570	0.31	0.190	27.3	19.1	27.3	150	-1,526	6	152	-1,369
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.35	7.10	0.6570	1.54	0.190	114.5	207.7	114.5	750	9,966	26	589	10,581
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.15	1.5000	0.37	0.900	27.3	19.1	27.4	150	-1,450	19	249	-1,181
Telco	TELE 1.5	Unknown, COMMUNICATION	17.42	7.15	1.5000	1.80	0.900	114.5	207.7	114.5	2,000	25,236	81	966	26,283
Telco	TELE 1.5	Unknown, COMMUNICATION	16.46	7.21	1.5000	0.37	0.900	27.3	19.1	27.4	150	-1,370	20	235	-1,115
Telco	TELE 1.5	Unknown, COMMUNICATION	16.46	7.21	1.5000	1.80	0.900	114.5	207.7	114.5	2,000	23,848	82	913	24,843
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.12	7.29	0.6570	0.31	0.190	27.3	19.1	27.3	150	-1,258	6	125	-1,127
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.12	7.29	0.6570	1.54	0.190	114.5	207.7	114.5	750	8,213	27	485	8,725
Totals:											73,515	325	5,002	78,843	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	33.39	5.43	203.4	203.4	50.00	4.50	3.50	96.00	0	1	1
Totals:										0	1	1

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	0.00	203.4	-184.3	3.00	3.80	12.75	-3	132	129
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	45.00	286.5	-184.3	3.00	3.80	12.75	35	132	166
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	-45.00	120.3	-184.3	3.00	3.80	12.75	-40	132	92
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	0.00	203.4	4.3	3.00	3.80	12.75	9	132	141
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	45.00	286.5	4.3	3.00	3.80	12.75	46	132	178
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.39	-45.00	120.3	4.3	3.00	3.80	12.75	-28	132	104
Spool	Spool Insulator - 25 kV KU, UTILITY	26.90	0.00	293.4	203.4	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV KU, UTILITY	26.28	0.00	207.7	207.7	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV KU, UTILITY	25.47	0.00	207.7	207.7	2.00	3.00	3.19	1	10	11

Bolt	Single Bolt	Unknown, COMMUNICATION	20.21	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	18.35	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	17.42	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	16.46	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	15.12	0.00	293.4	293.4	5.00	3.00	0.00	5	0	5
Totals:										49	820	869

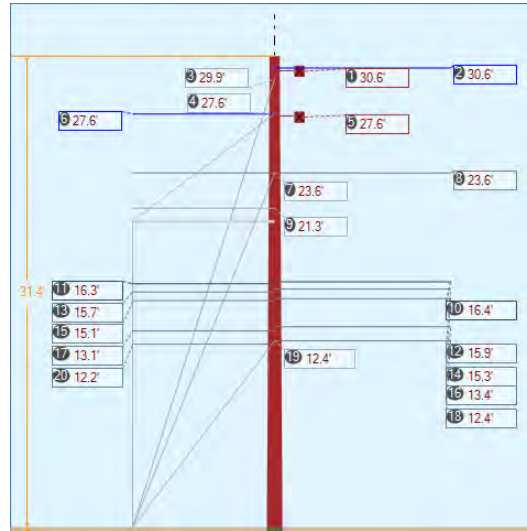
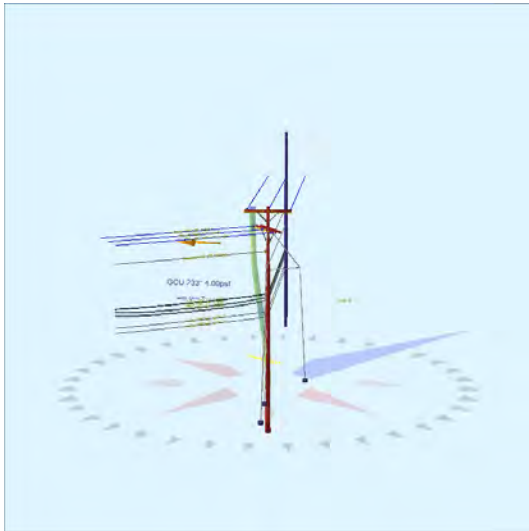
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	32.20	0.00	21.06	0.375	75.00	28.5	56.6	0.273	36.80	1.76
EHS 3/8	Down	KU, UTILITY	24.62	0.00	21.06	0.375	75.00	28.5	49.3	0.273	30.67	1.47
EHS 1/4	Down	Unknown, COMMUNICATION	20.21	0.00	17.08	0.25	75.00	32.2	49.6	0.121	24.72	1.29
EHS 1/4	Down	Unknown, COMMUNICATION	17.42	0.00	12.26	0.25	75.00	30.5	54.7	0.121	19.58	0.92
EHS 1/4	Down	Unknown, COMMUNICATION	16.46	0.00	12.26	0.25	75.00	30.5	53.1	0.121	18.80	0.89

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,559	7,781	7,593	6,340	4,179	-2,376	-75,064
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,829	8,026	7,597	5,759	4,955	-2,818	-68,314
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,063	3,694	3,693	2,813	2,392	-1,484	-29,414
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,648	3,316	3,307	2,698	1,912	-1,141	-19,309
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,686	3,351	3,337	2,670	2,002	-1,195	-19,124
Totals:										20,280	15,440	-9,013	-211,225

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.06	28.5	20,000	1.00	20,000	15,775	15,159	78.9
Single Helix Anchor			18.00	17.08	32.2	20,000	1.00	20,000	3,694	3,693	18.5
Single Helix Anchor			18.00	12.26	30.5	20,000	1.00	20,000	6,667	6,644	33.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.58	33.93	10.41	26.98	7.32	11.43	1.60e+6	60.00	57.00	33.75	178,169	1778.63	5.26

Pole Num:	69W - 28930-2137	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.56	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024186 Deg	Longitude:	-84.455387 Deg	Elevation:	902.239085450167		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	60.3	232.7
Groundline	60.3	232.7
Vertical	28.4	259.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,917	232.7
Groundline	33,917	232.7
GL Allowable	61,940	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.0	138.0		83.9	232.7	85.1	300.0
? EHS 3/8 (Down)			29.9	68.7	232.7	76.1	280.0
? EHS 3/8 (Down)			23.6	52.6	232.7	59.1	320.0
? Single Helix Anchor	7.1	22.0		19.5	232.7	19.5	225.6
? EHS 3/8 (Sidewalk)			27.6	28.1	232.7	31.0	225.6
? Sidewalk Strut	6.0	22.0	20.4	46.6	232.7	46.6	225.6
? Single Helix Anchor	45.2	319.6		0.0	232.7	0.0	0.0
? EHS 3/8 (Span/Head)			21.3	0.0	232.7	0.0	0.0
? Single Helix Anchor	11.5	138.0		24.2	232.7	25.0	350.0
? EHS 1/4 (Down)			12.5	80.8	232.7	91.9	350.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 254.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,788	150.1	89,808	264.8	145.0	14,974	79	1	14,975	220.2
Comms	4,135	129.7	40,884	120.5	66.0	6,817	321	4	6,821	100.3
GuyBraces	-5,944	-186.4	-99,596	-293.7	-160.8	-16,606	29,590	351	-16,256	-239.1
Pole	146	4.6	1,551	4.6	2.5	259	1,443	17	276	4.1
Crossarms	38	1.2	705	2.1	1.1	118	380	5	122	1.8
Insulators	27	0.8	564	1.7	0.9	94	167	2	96	1.4
Pole Load	3,189	100.0	33,917	100.0	54.8	5,655	31,979	379	6,034	88.7
Pole Reserve Capacity			28,023		45.2	1,145			766	11.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 254.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	280	8.8	2,314	6.8	3.7	386	24,332	288	674	9.9
Unknown, COMMUNICATION	2,725	85.5	29,347	86.5	47.4	4,893	5,825	69	4,962	73.0
Pole	146	4.6	1,551	4.6	2.5	259	1,443	17	276	4.1
<Undefined>	38	1.2	705	2.1	1.1	118	380	5	122	1.8
Totals:	3,189	100.0	33,917	100.0	54.8	5,655	31,979	379	6,034	88.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	17.89	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	1	303	27,993
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	48.43	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	3	303	27,995
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.64	48.43	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	27,688	-2	303	27,989
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.64	6.30	0.3250	0.01	0.107	27.3	199.1	27.3	150	2,652	4	70	2,726
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.64	6.30	0.3250	0.03	0.107	45.2	319.6	45.2	1,684	21,357	6	234	21,597
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	18.07	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	1	82	9,367
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	48.49	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	2	82	9,368
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.58	48.49	0.3250	0.01	0.107	27.3	199.1	27.3	450	9,284	-1	82	9,365
										Totals:	134,924	15	1,459	136,399	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	16.38	6.72	1.3300	0.56	0.337	45.2	319.6	45.2	925	8,131	8	359	8,498
CATV	CATV 1.0	Unknown, COMMUNICATION	16.25	6.73	1.3300	0.33	0.337	27.3	199.1	27.3	150	1,824	7	107	1,938
Telco	TELE 1.5	Unknown, COMMUNICATION	15.90	6.75	1.5000	0.63	0.900	45.2	319.6	45.2	2,000	17,067	14	381	17,463

Telco	TELE 1.5	Unknown, COMMUNICATION	15.70	6.76	1.5000	0.37	0.900	27.3	199.1	27.4	150	1,762	12	113	1,887
Telco	TELE 1.5	Unknown, COMMUNICATION	15.27	6.79	1.5000	0.63	0.900	45.2	319.6	45.2	2,000	16,385	14	366	16,765
Telco	TELE 1.5	Unknown, COMMUNICATION	15.13	6.80	1.5000	0.37	0.900	27.3	199.1	27.4	150	1,697	12	109	1,819
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.40	6.90	0.6570	0.54	0.190	45.2	319.6	45.2	750	5,391	5	186	5,581
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.11	6.92	0.6570	0.31	0.190	27.3	199.1	27.3	150	1,471	4	55	1,529
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	12.45	6.95	0.6570	0.54	0.190	45.2	319.6	45.2	750	5,009	5	173	5,186
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	12.22	6.97	0.6570	0.31	0.190	27.3	199.1	27.3	150	1,371	4	51	1,427
Totals:											60,107	86	1,900	62,093	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	30.64	5.14	139.0	139.0	50.00	4.50	3.50	96.00	0	123	123
Normal	Crossarm	27.58	5.32	200.0	200.0	50.00	4.50	3.50	96.00	0	947	947
Totals:										0	1,071	1,071

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	0.00	319.0	180.0	3.00	3.80	12.75	7	134	142
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	45.00	235.5	180.0	3.00	3.80	12.75	46	134	180
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.64	-45.00	42.5	180.0	3.00	3.80	12.75	-32	134	103
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.64	0.00	259.3	169.3	2.00	3.00	3.19	2	10	12
Bolt	Single Bolt	Unknown, COMMUNICATION	16.38	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	16.25	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	15.90	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	15.70	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	15.27	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2

Bolt	Single Bolt	Unknown, COMMUNICATION	15.13	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	13.40	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	13.11	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	12.45	0.00	319.6	409.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	12.22	0.00	199.1	289.1	5.00	3.00	0.00	3	0	3
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	0.00	200.0	0.0	3.00	3.80	12.75	10	121	131
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	45.00	283.3	0.0	3.00	3.80	12.75	45	121	166
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	27.58	-45.00	116.7	0.0	3.00	3.80	12.75	-24	121	97
Totals:										80	777	857

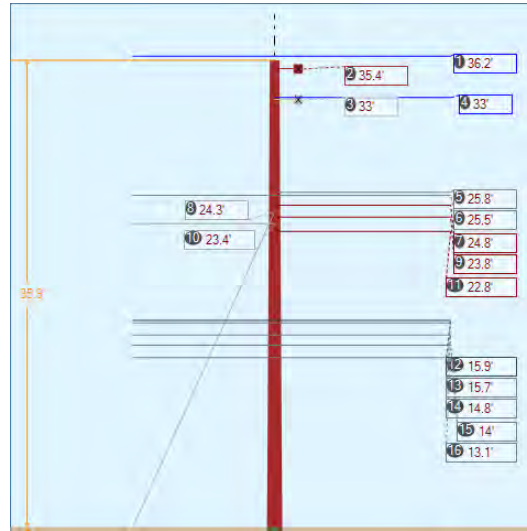
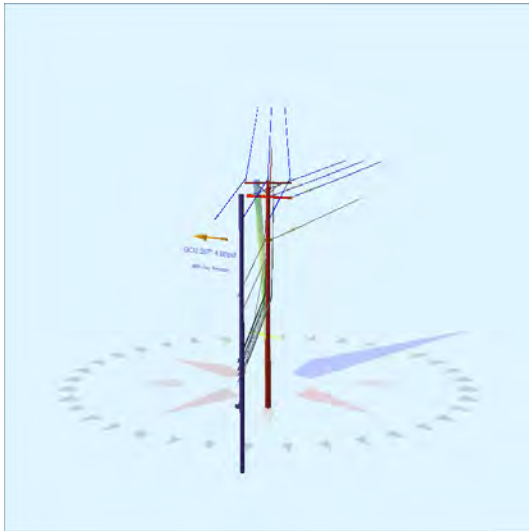
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.91	0.00	21.96	0.375	75.00	138.0	53.5	0.273	35.44	2.13
EHS 3/8	Down	KU, UTILITY	23.64	0.00	21.96	0.375	75.00	138.0	47.0	0.273	30.55	1.40
EHS 3/8	Sidewalk	KU, UTILITY	27.61	0.00	7.10	0.375	75.00	22.0	49.5	0.273	28.12	0.63
EHS 3/8	Span/Head	KU, UTILITY	21.29	21.29	45.19	0.375	75.00	319.6	0.0	0.273	43.36	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	12.45	0.00	11.51	0.25	75.00	138.0	47.1	0.121	15.20	1.04

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,554	9,595	9,527	7,662	5,662	-2,480	-72,997
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,187	7,443	7,289	5,327	4,975	-2,179	-50,797
EHS 3/8	Sidewalk	2.30e+7	15,400	0.90	13,860	700	4,293	3,903	3,899	2,967	2,531	-1,559	-10,152
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	231
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,499	4,999	4,836	3,542	3,293	-1,442	-17,548
Totals:										19,497	16,461	-7,660	-151,264

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.96	138.0	20,000	1.00	20,000	17,010	16,788	85.0
Single Helix Anchor			18.00	7.10	22.0	20,000	1.00	20,000	3,903	3,899	19.5
Single Helix Anchor			18.00	45.19	319.6	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor			18.00	11.51	138.0	20,000	1.00	20,000	4,999	4,836	25.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.98	34.23	9.36	26.44	6.69	10.37	1.60e+6	60.00	57.00	31.45	112,747	1126.04	3.52

Pole Num:	70W - 28930-2135	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.09	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024280 Deg	Longitude:	-84.455504 Deg	Elevation:	920.767840368862		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	61.5	23.3
Groundline	56.0	0.0
Vertical	1.5	20.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,495	307.7
Groundline	48,200	227.0
GL Allowable	88,915	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	14.0	155.5		3.1	257.0	23.4	40.0
? EHS 3/8 (Down)			24.3	4.5	257.0	37.1	40.0
? Single Helix Anchor	45.2	139.6		56.3	257.0	56.6	236.9
? EHS 3/8 (Span/Head)			23.4	81.2	257.0	89.9	236.9
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	480	20.7	14,365	29.8	16.2	1,096	427	4	1,100	16.2
Comms	1,033	44.5	15,666	32.5	17.6	1,195	881	8	1,203	17.7
GuyBraces	621	26.8	14,627	30.4	16.5	1,116	834	8	1,124	16.5
Pole	172	7.4	3,150	6.5	3.5	240	2,053	19	259	3.8
Crossarms	1	0.0	10	0.0	0.0	1	190	2	3	0.0
Insulators	11	0.5	381	0.8	0.4	29	118	1	30	0.4
Pole Load	2,318	100.0	48,200	100.0	54.2	3,678	4,504	42	3,719	54.7
Pole Reserve Capacity			40,715		45.8	3,123			3,081	45.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,113	48.0	29,355	60.9	33.0	2,240	1,331	12	2,252	33.1
Unknown, COMMUNICATION	1,033	44.5	15,684	32.5	17.6	1,197	929	9	1,205	17.7
Pole	172	7.4	3,150	6.5	3.5	240	2,053	19	259	3.8
<Undefined>	1	0.0	10	0.0	0.0	1	190	2	3	0.0
Totals:	2,318	100.0	48,200	100.0	54.2	3,678	4,504	42	3,719	54.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	5.44	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	1	1,141	3,522
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	5.44	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	0	349	3,922
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	-156	1,141	3,366
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	-46	349	3,876
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	2,381	157	1,141	3,679
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	36.23	45.33	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	3,572	46	349	3,968

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	18.34	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	-1	403	-5,725
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	48.59	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	-5	403	-5,728
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.04	48.59	0.3250	0.05	0.107	54.6	335.5	54.6	450	-6,126	4	403	-5,720
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.76	6.78	0.3250	0.05	0.107	54.6	335.5	54.6	450	-4,777	-8	314	-4,471
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.52	6.79	0.3250	0.03	0.107	45.2	139.6	45.2	1,684	2,515	7	246	2,768
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.52	6.79	0.3250	0.34	0.107	153.9	315.3	153.9	1,684	1,676	24	803	2,503
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.84	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	2,055	1	848	2,904
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.84	6.89	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	1,979	1	817	2,797
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.76	6.96	0.3980	0.39	0.145	153.9	315.3	153.9	2,128	1,889	1	780	2,670
											Totals:	4,817	25	9,488	14,331

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	15.90	7.38	1.3300	0.56	0.337	45.2	139.6	45.2	925	861	22	340	1,223
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	15.90	7.38	1.3300	2.20	0.337	153.9	315.3	153.9	925	574	74	1,110	1,759
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.73	7.39	1.5000	2.60	0.900	153.9	315.3	153.9	2,000	1,227	-130	1,200	2,298
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.73	7.39	1.5000	0.63	0.900	45.2	139.6	45.2	2,000	1,841	-38	368	2,171
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.79	7.45	1.5000	0.63	0.900	45.2	139.6	45.2	2,000	1,731	38	346	2,115
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.79	7.45	1.5000	2.60	0.900	153.9	315.3	153.9	2,000	1,154	131	1,129	2,413
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.00	7.49	0.6570	0.53	0.190	45.2	139.6	45.2	750	614	13	189	816
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.00	7.49	0.6570	2.15	0.190	153.9	315.3	153.9	750	410	43	618	1,070
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	13.05	7.55	0.6570	0.53	0.190	45.2	139.6	45.2	750	573	13	176	762
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	13.05	7.55	0.6570	2.15	0.190	153.9	315.3	153.9	750	382	43	576	1,001
											Totals:	9,367	209	6,053	15,629

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.42	5.44	315.3	315.3	50.00	4.50	3.50	96.00	1	56	57	
Normal	Crossarm	33.04	5.59	335.5	335.5	50.00	4.50	3.50	96.00	-14	-33	-47	
										Totals:	-13	23	10

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	0.00	315.3	0.0	6.00	3.50	7.50	0	39	40		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	45.00	38.4	0.0	6.00	3.50	7.50	-43	39	-3		
Pin	Pin Insulator - 5 kV KU, UTILITY	35.60	-45.00	232.2	0.0	6.00	3.50	7.50	43	39	82		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	0.00	335.5	0.0	3.00	3.80	12.75	-3	67	65		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	45.00	58.4	0.0	3.00	3.80	12.75	-23	67	44		
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.04	-45.00	252.6	0.0	3.00	3.80	12.75	18	67	85		
Spool	Spool Insulator - 25 kV KU, UTILITY	25.76	0.00	65.5	335.5	2.00	3.00	3.19	-2	10	8		
Spool	Spool Insulator - 25 kV KU, UTILITY	25.52	0.00	227.5	137.5	2.00	3.00	3.19	2	10	12		
Spool	Spool Insulator - 25 kV KU, UTILITY	24.76	0.00	315.3	315.3	2.00	3.00	3.19	0	10	10		
Spool	Spool Insulator - 25 kV KU, UTILITY	23.84	0.00	315.3	315.3	2.00	3.00	3.19	0	10	10		
Spool	Spool Insulator - 25 kV KU, UTILITY	22.76	0.00	315.3	315.3	2.00	3.00	3.19	0	9	9		
Bolt	Single Bolt Unknown, COMMUNICATION	15.90	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt Unknown, COMMUNICATION	15.73	0.00	45.3	315.3	5.00	3.00	0.00	-6	0	-6		
Bolt	Single Bolt Unknown, COMMUNICATION	14.79	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Single Bolt Unknown, COMMUNICATION	14.00	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
Bolt	Single Bolt Unknown, COMMUNICATION	13.05	0.00	229.6	229.6	5.00	3.00	0.00	6	0	6		
										Totals:	10	370	380

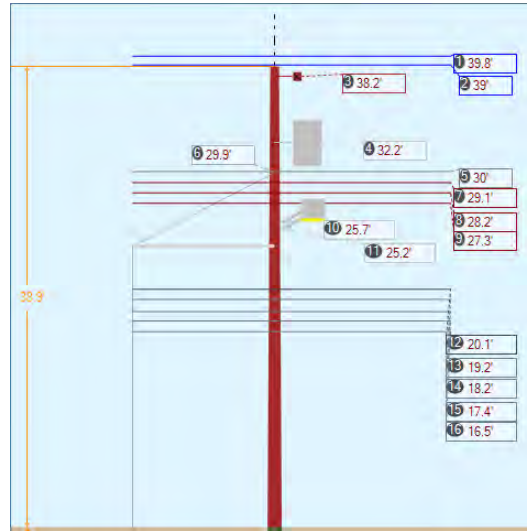
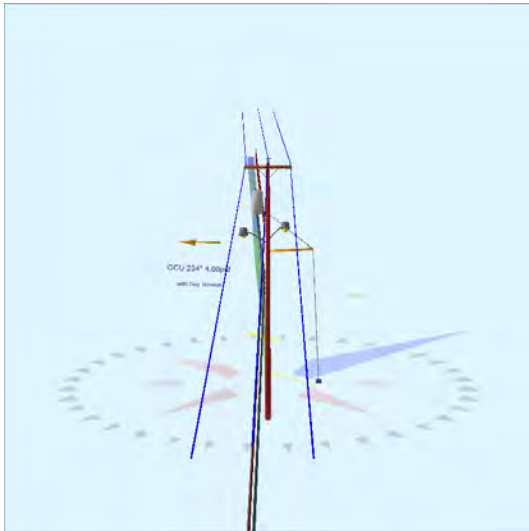
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Down	KU, UTILITY	24.29	0.00	14.00	0.375	75.00	155.5	59.8	0.273	26.36	0.10
EHS 3/8 Span/Head	KU, UTILITY	23.35	23.35	45.19	0.375	75.00	139.6	0.0	0.273	43.32	3.07

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	5,142	4,675	623	539	313	99	2,518
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	12,455	11,323	11,259	0	11,259	507	12,074
Totals:									539	11,572	606	14,593

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	14.00	155.5	20,000	1.00	20,000	4,675	623	23.4
Single Helix Anchor		18.00	45.19	139.6	20,000	1.00	20,000	11,323	11,259	56.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.37	33.18	10.87	9.30	7.32	11.70	1.60e+6	60.00	57.00	35.91	307,964	3002.40	66.67

Pole Num:	71W - 28930-2129	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.09	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.47	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024577 Deg	Longitude:	-84.455875 Deg	Elevation:	914.843628308852		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.8	0.0 234.1
Groundline	34.8	0.0 234.1
Vertical	4.7	26.3 210.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	31,805	239.2 234.1
Groundline	31,805	239.2 234.1
GL Allowable	94,360	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	9.2	30.7		16.4	234.1	16.7	220.0
? EHS 3/8 (Sidewalk)			30.0	23.7	234.1	26.5	220.0
? Sidewalk Strut	8.0	30.7	23.8	99.7	234.1	101.2	220.0
System Capacity Summary:				Inadequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 239.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	922	41.9	21,527	67.7	22.8	2,195	537	5	2,200	32.3
Comms	827	37.6	11,310	35.6	12.0	1,153	1,146	10	1,163	17.1
GuyBraces	128	5.8	-7,875	-24.8	-8.4	-803	3,050	27	-776	-11.4
PowerEquipments	55	2.5	2,735	8.6	2.9	279	1,216	11	290	4.3
Pole	218	9.9	3,004	9.4	3.2	306	2,283	20	327	4.8
Crossarms	3	0.1	62	0.2	0.1	6	95	1	7	0.1
Streetlights	40	1.8	784	2.5	0.8	80	171	2	81	1.2
Insulators	9	0.4	258	0.8	0.3	26	110	1	27	0.4
Pole Load	2,199	100.0	31,805	100.0	33.7	3,243	8,608	77	3,320	48.8
Pole Reserve Capacity			62,555		66.3	3,557			3,480	51.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 239.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,152	52.4	17,409	54.7	18.5	1,775	5,036	45	1,820	26.8
Unknown, COMMUNICATION	827	37.6	11,330	35.6	12.0	1,155	1,194	11	1,166	17.1
Pole	218	9.9	3,004	9.4	3.2	306	2,283	20	327	4.8
<Undefined>	3	0.1	62	0.2	0.1	6	95	1	7	0.1
Totals:	2,199	100.0	31,805	100.0	33.7	3,243	8,608	77	3,320	48.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	0.00	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,892	0	1,414	-19,478
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	0.00	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	23,392	0	953	24,345
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,501	146	1,387	-18,967
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	22,954	100	935	23,989

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-20,501	-156	1,387	-19,270
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.04	45.33	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	22,954	-107	935	23,783
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.02	6.69	0.3250	0.39	0.107	153.9	135.3	153.9	1,684	-15,759	22	1,066	-14,670
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.02	6.69	0.3250	0.18	0.107	105.1	313.6	105.1	1,684	17,644	15	719	18,379
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.74	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-19,308	28	1,125	-18,155
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.11	6.74	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	21,619	19	759	22,396
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.79	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-18,737	28	1,092	-17,617
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.79	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	20,979	19	736	21,735
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.35	6.84	0.3980	0.44	0.145	153.9	135.3	153.9	2,128	-18,142	28	1,057	-17,056
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.35	6.84	0.3980	0.20	0.145	105.1	313.6	105.1	2,128	20,313	19	713	21,045
Totals:											16,016	162	14,280	30,457	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.10	7.27	1.3300	2.22	0.337	153.9	135.3	153.9	925	-5,795	71	1,584	-4,140
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.10	7.27	1.3300	1.40	0.337	105.1	313.6	105.1	925	6,489	49	1,068	7,605
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.24	7.32	1.5000	2.61	0.900	153.9	135.3	153.9	2,000	-11,996	125	1,657	-10,215
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.24	7.32	1.5000	1.62	0.900	105.1	313.6	105.1	2,000	13,432	85	1,117	14,634
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.22	7.38	1.5000	2.61	0.900	153.9	135.3	153.9	2,000	-11,361	126	1,569	-9,666
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.22	7.38	1.5000	1.62	0.900	105.1	313.6	105.1	2,000	12,721	86	1,058	13,865
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	7.43	0.6570	2.19	0.190	153.9	135.3	153.9	750	-4,073	41	868	-3,164
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.42	7.43	0.6570	1.38	0.190	105.1	313.6	105.1	750	4,560	28	585	5,174
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.52	7.49	0.6570	2.19	0.190	153.9	135.3	153.9	750	-3,862	42	823	-2,997
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.52	7.49	0.6570	1.38	0.190	105.1	313.6	105.1	750	4,324	28	555	4,907
Totals:												4,438	681	10,883	16,002

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	32.19	22.06	220.0	220.0	640.00	47.00	--	24.00	--	2,111	1,758	3,869
Totals:												2,111	1,758	3,869

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	38.23	5.45	134.5	134.5	50.00	4.50	3.50	96.00	-11	99	88		
Totals:												-11	99	88

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	25.72	4.44	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-123	508	385
General	Streetlight - 3 ft. Arm	KU, UTILITY	25.19	4.47	220.0	220.0	45.00	24.00	20.00	3.00	36.00	226	498	724
Totals:												104	1,006	1,109

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.91	0.00	0.0	0.0	13.00	9.00	10.50	0	180	180
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.41	45.00	217.5	0.0	6.00	3.50	7.50	40	49	89
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.41	-45.00	51.4	0.0	6.00	3.50	7.50	-43	49	6
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.02	0.00	224.5	134.5	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.11	0.00	224.5	134.5	2.00	3.00	3.19	2	13	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.25	0.00	224.5	134.5	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.35	0.00	224.5	134.5	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	20.10	0.00	225.3	135.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.24	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.22	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	17.42	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.52	0.00	224.5	134.5	5.00	3.00	0.00	6	0	6
Totals:										34	331	365

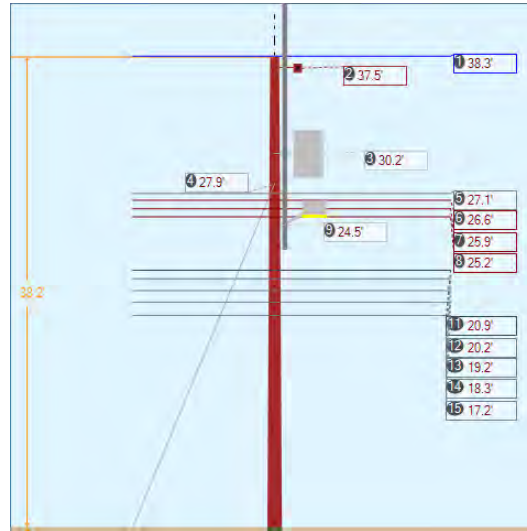
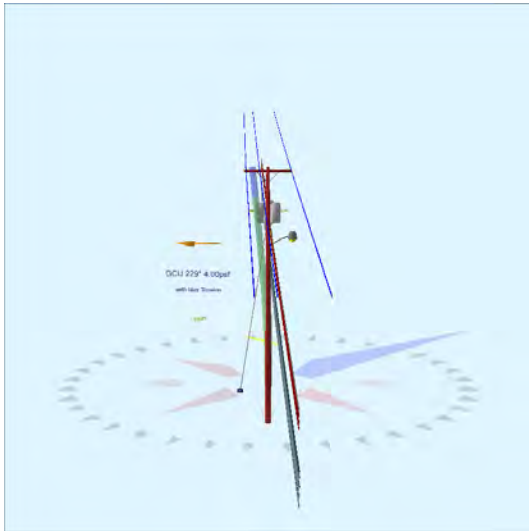
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Sidewalk	KU, UTILITY	29.95	0.00	9.18	0.375	75.00	30.7	37.3	0.273	32.13	0.53

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8 Sidewalk	2.30e+7	15,400	0.90	13,860	700	3,670	3,336	3,289	1,991	2,617	-2,301	-11,142	
Totals:										1,991	2,617	-2,301	-11,142

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.18	30.7	20,000	1.00	20,000	3,336	3,289	16.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.28	33.91	10.87	14.27	7.32	11.93	1.60e+6	60.00	57.00	38.91	185,035	1831.54	21.28

Pole Num:	72W - 28930-2119	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.80	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.20	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024776 Deg	Longitude:	-84.456110 Deg	Elevation:	912.909039302674		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.8	0.0
Groundline	31.8	0.0
Vertical	3.2	24.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,575	234.0
Groundline	28,575	234.0
GL Allowable	92,389	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	6.1	186.7		0.0	228.6	17.8	30.0
? EHS 3/8 (Down)			27.9	0.0	228.6	28.2	30.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 234.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	314	25.8	9,754	34.1	10.6	719	451	4	723	10.6
Comms	478	39.3	8,692	30.4	9.4	641	963	9	649	9.6
GuyBraces	4	0.4	120	0.4	0.1	9	9	0	9	0.1
PowerEquipments	138	11.3	4,770	16.7	5.2	352	2,603	24	375	5.5
Pole	213	17.5	4,075	14.3	4.4	300	2,221	20	321	4.7
Crossarms	2	0.1	72	0.3	0.1	5	95	1	6	0.1
Streetlights	20	1.6	245	0.9	0.3	18	86	1	19	0.3
Risers	42	3.5	672	2.4	0.7	50	46	0	50	0.7
Insulators	6	0.5	175	0.6	0.2	13	97	1	14	0.2
Pole Load	1,216	100.0	28,575	100.0	30.9	2,106	6,571	60	2,166	31.9
Pole Reserve Capacity			63,814		69.1	4,694			4,634	68.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 234.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	524	43.1	15,764	55.2	17.1	1,162	3,244	29	1,191	17.5
Unknown, COMMUNICATION	478	39.3	8,664	30.3	9.4	639	1,011	9	648	9.5
Pole	213	17.5	4,075	14.3	4.4	300	2,221	20	321	4.7
<Undefined>	2	0.1	72	0.3	0.1	5	95	1	6	0.1
Totals:	1,216	100.0	28,575	100.0	30.9	2,106	6,571	60	2,166	31.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	18.81	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	44	948	-14,189
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	18.81	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	48	1,017	15,958
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	-103	948	-14,336
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	-110	1,017	15,800

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-15,181	107	948	-14,126
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.27	45.33	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	14,894	115	1,017	16,026
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.13	6.82	0.3250	0.18	0.107	105.1	133.6	105.1	1,684	-10,758	-16	672	-10,102
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.13	6.82	0.3250	0.21	0.107	112.6	313.8	112.6	1,684	10,554	-17	721	11,258
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.56	6.85	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-13,309	-19	716	-12,612
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.56	6.85	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	13,057	-21	768	13,804
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.87	6.89	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-12,966	-20	698	-12,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.87	6.89	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	12,720	-21	748	13,447
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.22	6.93	0.3980	0.21	0.145	105.1	133.6	105.1	2,128	-12,637	-20	680	-11,977
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.22	6.93	0.3980	0.24	0.145	112.6	313.8	112.6	2,128	12,397	-21	729	13,105
											Totals:	-1,805	-53	11,626	9,768

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.87	7.19	1.3300	1.40	0.337	105.1	133.6	105.1	925	-4,547	-49	1,147	-3,449
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.87	7.19	1.3300	1.52	0.337	112.6	313.8	112.6	925	4,460	-52	1,230	5,638
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	7.23	1.5000	1.62	0.900	105.1	133.6	105.1	2,000	-9,507	-85	1,212	-8,380
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.19	7.23	1.5000	1.76	0.900	112.6	313.8	112.6	2,000	9,326	-91	1,300	10,535
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.23	7.28	1.5000	1.62	0.900	105.1	133.6	105.1	2,000	-9,058	-86	1,155	-7,989
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.23	7.28	1.5000	1.76	0.900	112.6	313.8	112.6	2,000	8,886	-92	1,238	10,032
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.27	7.34	0.6570	1.39	0.190	105.1	133.6	105.1	750	-3,227	-28	635	-2,621
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.27	7.34	0.6570	1.50	0.190	112.6	313.8	112.6	750	3,166	-30	681	3,817
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.22	7.40	0.6570	1.39	0.190	105.1	133.6	105.1	750	-3,041	-29	598	-2,471
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.22	7.40	0.6570	1.50	0.190	112.6	313.8	112.6	750	2,983	-31	641	3,594
Totals:												-557	-574	9,836	8,705

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.18	22.14	315.0	315.0	640.00	47.00	--	24.00	--	352	1,647	2,000
Transformer	1PH-25KVA	KU, UTILITY	30.18	21.14	315.0	315.0	365.00	39.00	--	22.00	--	271	2,506	2,777
Totals:												624	4,154	4,777

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	37.46	5.45	313.7	313.7	50.00	4.50	3.50	96.00	8	64	72		
Totals:												8	64	72

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	24.52	4.47	50.0	50.0	45.00	24.00	20.00	3.00	36.00	-239	484	245
Totals:												-239	484	245

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	24.20	6.09	360.0	360.0	24.20	290.45	4.00	4.00	290.45	-7	680	673
Totals:												-7	680	673

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	-18.00	240.6	0.0	6.00	3.50	7.50	18	48	66
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	45.00	36.8	0.0	6.00	3.50	7.50	-41	48	7
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.64	-45.00	230.6	0.0	6.00	3.50	7.50	43	48	91
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.13	0.00	43.7	313.7	2.00	3.00	3.19	-2	13	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.56	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.87	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.22	0.00	43.7	313.7	2.00	3.00	3.19	-2	12	10

Bolt	Three Bolt	Unknown, COMMUNICATION	20.87	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.19	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.23	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.27	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.22	0.00	43.7	313.7	5.00	3.00	0.00	-6	0	-6
Totals:										-17	192	175

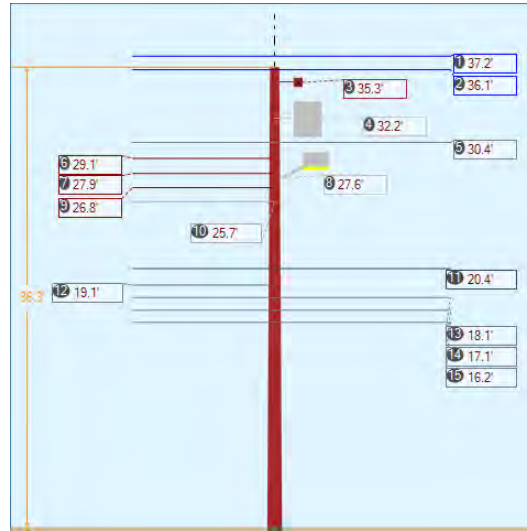
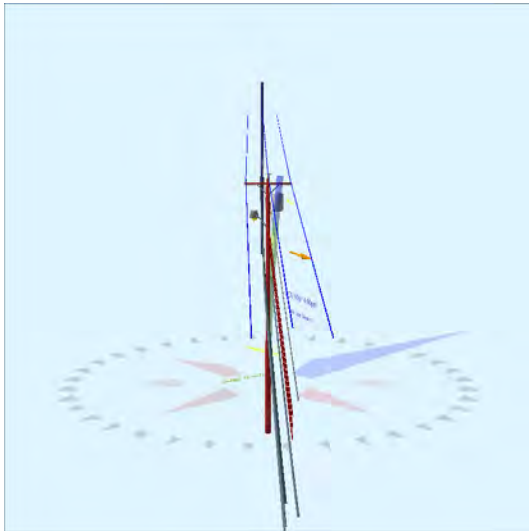
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	27.90	0.00	6.10	0.375	75.00	186.7	77.4	0.273	26.99	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,908	3,553	0	0	0	0	121
Totals:										0	0	0	121

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	6.10	186.7	20,000	1.00	20,000	3,553	0	17.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.81	33.72	10.85	12.18	7.32	11.85	1.60e+6	60.00	57.00	38.20	206,127	2053.39	31.25

Pole Num:	73W - 28930-2115	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.68	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025024 Deg	Longitude:	-84.456404 Deg	Elevation:	924.211746379987		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	55.7	25.7
Groundline	44.9	0.0
Vertical	1.8	134.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,285	124.8
Groundline	28,411	95.7
GL Allowable	87,276	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.4	314.3		51.6	108.6	51.7	130.0
? EHS 3/8 (Span/Head)			25.7	74.4	108.6	82.1	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 95.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,663	608.8	187,545	660.1	214.9	14,573	370	3	14,576	214.4
Comms	2,209	201.8	41,973	147.7	48.1	3,261	884	8	3,270	48.1
GuyBraces	-8,060	-736.5	-207,794	-731.4	-238.1	-16,146	29	0	-16,146	-237.4
PowerEquipments	35	3.2	1,687	5.9	1.9	131	636	6	137	2.0
Pole	196	17.9	3,591	12.6	4.1	279	2,060	19	298	4.4
Crossarms	24	2.2	820	2.9	0.9	64	95	1	65	0.9
Streetlights	19	1.8	297	1.0	0.3	23	86	1	24	0.4
Insulators	9	0.8	293	1.0	0.3	23	110	1	24	0.4
Pole Load	1,094	100.0	28,411	100.0	32.6	2,208	4,272	40	2,248	33.1
Pole Reserve Capacity			58,865		67.4	4,592			4,552	66.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 95.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-1,334	-121.9	-17,962	-63.2	-20.6	-1,396	1,184	11	-1,384	-20.4
Unknown, COMMUNICATION	2,209	201.8	41,962	147.7	48.1	3,261	932	9	3,269	48.1
Pole	196	17.9	3,591	12.6	4.1	279	2,060	19	298	4.4
<Undefined>	24	2.2	820	2.9	0.9	64	95	1	65	0.9
Totals:	1,094	100.0	28,411	100.0	32.6	2,208	4,272	40	2,248	33.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.20	0.00	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-63,659	0	306	-63,353
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.20	0.00	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	64,100	0	265	64,365
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	62,236	60	257	62,554
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-61,808	67	297	-61,443

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	62,236	-82	257	62,412
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.11	45.33	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-61,808	-92	297	-61,603
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.38	6.51	0.3250	0.15	0.107	112.6	133.8	112.6	1,684	52,334	10	216	52,560
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.38	6.51	0.3250	0.19	0.107	126.4	314.3	126.4	1,684	-51,973	12	250	-51,712
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.12	6.59	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	63,391	16	226	63,632
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.93	6.66	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	60,797	16	216	61,029
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.81	6.72	0.3980	0.18	0.145	112.6	133.8	112.6	2,128	58,369	16	208	58,593
Totals:											184,214	24	2,796	187,034	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.43	7.10	1.3300	1.50	0.337	112.6	133.8	112.6	925	19,330	-33	323	19,620
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.43	7.10	1.3300	1.72	0.337	126.4	314.3	126.4	925	-19,197	-36	373	-18,861
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.11	7.18	1.5000	1.75	0.900	112.6	133.8	112.6	2,000	39,093	57	330	39,480
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.14	7.24	1.5000	1.75	0.900	112.6	133.8	112.6	2,000	37,117	-58	313	37,372
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.14	7.24	1.5000	2.02	0.900	126.4	314.3	126.4	2,000	-36,861	-65	362	-36,564
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.14	7.30	0.6570	1.44	0.190	112.6	133.8	112.6	750	13,149	-19	171	13,301
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.14	7.30	0.6570	1.65	0.190	126.4	314.3	126.4	750	-13,058	-21	198	-12,882
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.18	7.35	0.6570	1.44	0.190	112.6	133.8	112.6	750	12,412	-19	162	12,554
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.18	7.35	0.6570	1.65	0.190	126.4	314.3	126.4	750	-12,326	-22	187	-12,161
		COMMUNICATION													
Totals:											39,657	-216	2,417	41,858	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Transformer	1PH-15KVA	KU, UTILITY	32.16	20.91	35.0	35.0	335.00	34.00	--	22.00	--	543	1,140	1,683
Totals:												543	1,140	1,683

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		35.30	5.47	314.0	314.0	50.00	4.50	3.50	96.00	-34	852	818	
Totals:											-34	852	818

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	27.59	4.18	280.0	280.0	45.00	24.00	20.00	3.00	36.00	-238	533	296
Totals:											-238	533	296

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.32	0.00	0.0	0.0	13.00	9.00	10.50	0	165	165	
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.49	45.00	37.1	0.0	6.00	3.50	7.50	22	44	67	
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.49	-45.00	231.0	0.0	6.00	3.50	7.50	-31	44	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.38	0.00	44.0	314.0	2.00	3.00	3.19	1	14	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.12	0.00	133.8	133.8	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.93	0.00	133.8	133.8	2.00	3.00	3.19	2	13	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.81	0.00	133.8	133.8	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.43	0.00	224.0	314.0	5.00	3.00	0.00	-3	0	-3	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.11	0.00	43.8	133.8	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.14	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.14	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.18	0.00	224.0	314.0	5.00	3.00	0.00	-4	0	-4	
Totals:											-13	305	292

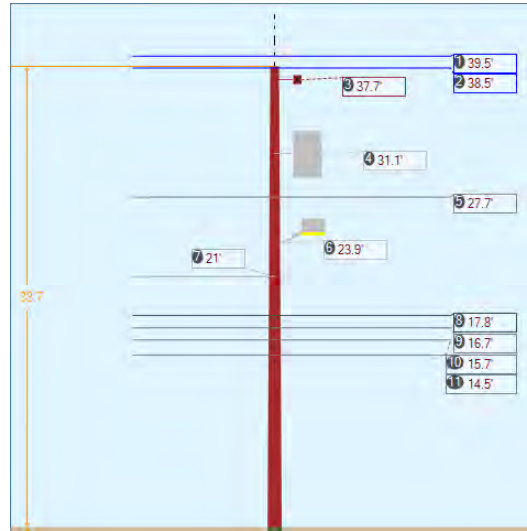
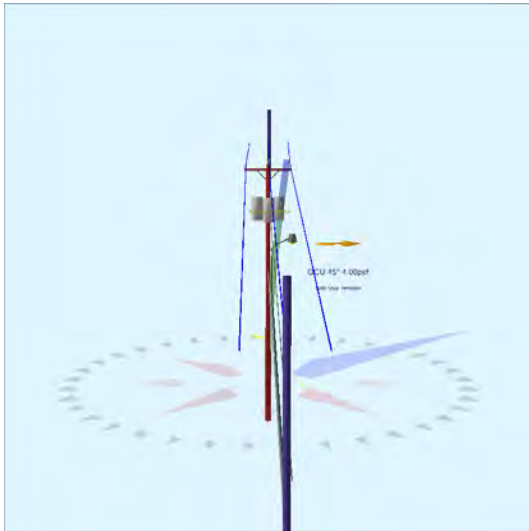
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.71	25.71	126.35	0.375	75.00	314.3	0.0	0.273	124.49	8.09

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	11,376	10,342	10,317	0	10,317	-8,068	-207,228
Totals:										0	10,317	-8,068	-207,228

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	126.35	314.3	20,000	1.00	20,000	10,342	10,317	51.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.44	33.43	10.73	9.46	7.32	11.63	1.60e+6	60.00	57.00	36.32	240,941	2373.07	55.56

Pole Num:	74W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.37	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025242 Deg	Longitude:	-84.456705 Deg	Elevation:	919.426969304131		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.7	0.0
Groundline	31.7	0.0
Vertical	3.8	26.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,788	43.0
Groundline	28,788	43.0
GL Allowable	93,641	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.4	134.2		0.0	44.8	1.9	310.0
? EHS 3/8 (Span/Head)			21.0	0.0	44.8	3.0	310.0
? Single Helix Anchor	36.3	315.2		0.7	44.8	3.7	140.0
? EHS 3/8 (Span/Head)			21.0	1.0	44.8	5.9	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	294	26.0	10,666	37.1	11.4	772	176	2	774	11.4
Comms	382	33.7	6,597	22.9	7.0	478	497	4	482	7.1
GuyBraces	47	4.1	988	3.4	1.1	72	38	0	72	1.1
PowerEquipments	164	14.5	5,243	18.2	5.6	380	3,648	33	412	6.1
Pole	217	19.1	4,216	14.7	4.5	305	2,261	20	326	4.8
Crossarms	1	0.1	48	0.2	0.1	3	95	1	4	0.1
Streetlights	20	1.8	713	2.5	0.8	52	86	1	52	0.8
Insulators	8	0.7	316	1.1	0.3	23	89	1	24	0.3
Pole Load	1,132	100.0	28,788	100.0	30.7	2,084	6,890	62	2,146	31.6
Pole Reserve Capacity			64,853		69.3	4,716			4,654	68.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	533	47.1	17,903	62.2	19.1	1,296	3,999	36	1,332	19.6
Unknown, COMMUNICATION	382	33.7	6,621	23.0	7.1	479	535	5	484	7.1
Pole	217	19.1	4,216	14.7	4.5	305	2,261	20	326	4.8
<Undefined>	1	0.1	48	0.2	0.1	3	95	1	4	0.1
Totals:	1,132	100.0	28,788	100.0	30.7	2,084	6,890	62	2,146	31.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.53	0.00	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-2,033	0	1,202	-831
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.53	0.00	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,392	0	345	3,737
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,981	129	1,171	-681
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,305	37	336	3,679

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,981	-128	1,171	-938
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.52	45.33	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	3,305	-37	336	3,605
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.72	6.81	0.3250	0.27	0.107	126.4	134.3	126.4	1,684	-1,425	19	842	-563
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.72	6.81	0.3250	0.02	0.107	36.3	315.2	36.3	1,684	2,378	6	242	2,625
Totals:											4,960	26	5,647	10,634	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.78	7.40	1.3300	1.74	0.337	126.4	134.3	126.4	925	-502	61	1,199	758
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.78	7.40	1.3300	0.45	0.337	36.3	315.2	36.3	925	838	18	344	1,200
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.74	7.46	1.5000	2.03	0.900	126.4	134.3	126.4	2,000	-1,022	108	1,233	319
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.74	7.46	1.5000	0.50	0.900	36.3	315.2	36.3	2,000	1,705	31	354	2,091
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.72	7.52	0.6570	1.73	0.190	126.4	134.3	126.4	750	-360	35	670	346
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.72	7.52	0.6570	0.42	0.190	36.3	315.2	36.3	750	601	10	193	803
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.46	7.59	0.6570	1.73	0.190	126.4	134.3	126.4	750	-331	36	616	321
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.46	7.59	0.6570	0.42	0.190	36.3	315.2	36.3	750	552	10	177	740
		COMMUNICATION													
Totals:											1,481	309	4,787	6,577	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	31.09	22.11	130.0	130.0	640.00	47.00	--	24.00	--	115	5,112	5,227
Totals:											115	5,112	5,227	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		37.71	5.47	314.7	314.7	50.00	4.50	3.50	96.00	1	46	47
Totals:											1	46	47

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.87	4.54	35.0	35.0	45.00	24.00	20.00	3.00	36.00	238	473	711
Totals:												238	473	711

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.65	0.00	0.0	0.0	13.00	9.00	10.50	0	179	179	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.89	45.00	37.8	0.0	6.00	3.50	7.50	43	48	91	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.89	-45.00	231.7	0.0	6.00	3.50	7.50	-43	48	6	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.72	0.00	44.7	314.7	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.78	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.74	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.72	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.46	0.00	44.7	314.7	5.00	3.00	0.00	6	0	6	
Totals:											26	289	316

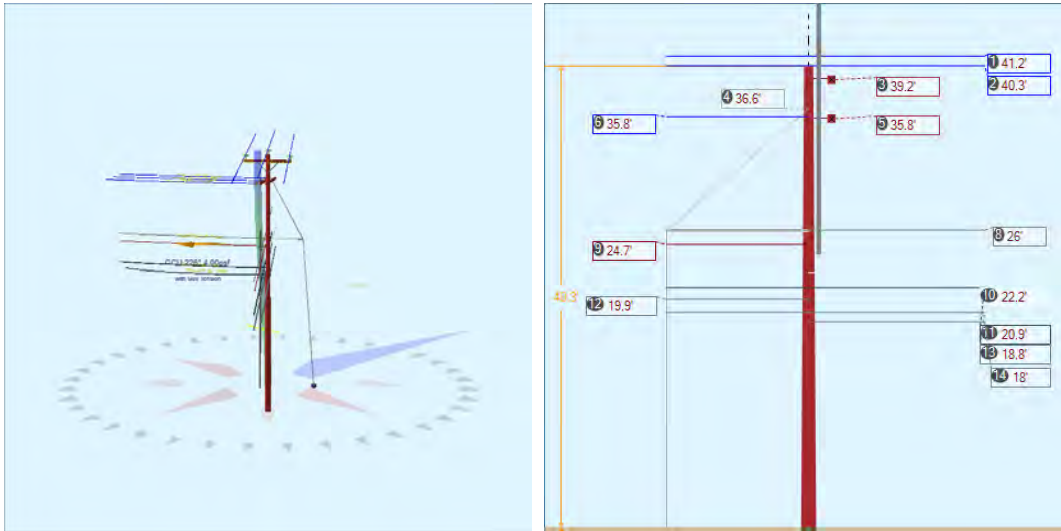
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	21.04	21.04	126.35	0.375	75.00	134.2	0.0	0.273	124.46	0.00
EHS 3/8	Span/Head	KU, UTILITY	21.04	21.04	36.32	0.375	75.00	315.2	0.0	0.273	34.43	0.03

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	420	382	0	0	0	0	675	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	815	741	140	0	140	6	310	
Totals:											0	140	6	985

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	126.35	134.2	20,000	1.00	20,000	382	0	1.9
Single Helix Anchor			18.00	36.32	315.2	20,000	1.00	20,000	741	140	3.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.35	33.93	10.84	12.82	7.32	11.90	1.60e+6	60.00	57.00	38.65	181,860	1813.05	26.32

Pole Num:	75W - 28930-2111	Pole Length / Class:	45 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.72	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.01	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025322 Deg	Longitude:	-84.456783 Deg	Elevation:	923.358725241214		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.8	0.0
Groundline	23.8	0.0
Vertical	3.8	29.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,392	222.7
Groundline	28,392	222.7
GL Allowable	123,745	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	8.0	50.0		14.2	225.6	14.2	231.2
? EHS 3/8 (Sidewalk)			36.6	20.4	225.6	22.5	231.2
? Sidewalk Strut	6.0	50.0	25.9	47.7	225.6	47.8	231.2
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 222.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,198	66.2	29,342	103.4	23.7	2,037	125	1	2,038	30.0
Comms	329	18.2	5,367	18.9	4.3	373	325	2	375	5.5
GuyBraces	-78	-4.3	-13,233	-46.6	-10.7	-919	3,723	28	-891	-13.1
Pole	247	13.6	3,917	13.8	3.2	272	2,819	21	293	4.3
Crossarms	66	3.6	1,881	6.6	1.5	131	285	2	133	2.0
Risers	28	1.5	431	1.5	0.4	30	52	0	30	0.4
Insulators	22	1.2	688	2.4	0.6	48	146	1	49	0.7
Pole Load	1,811	100.0	28,392	100.0	22.9	1,971	7,476	56	2,027	29.8
Pole Reserve Capacity			95,353		77.1	4,829			4,773	70.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 222.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,170	64.6	17,221	60.7	13.9	1,196	3,999	30	1,226	18.0
Unknown, COMMUNICATION	329	18.2	5,373	18.9	4.3	373	373	3	376	5.5
Pole	247	13.6	3,917	13.8	3.2	272	2,819	21	293	4.3
<Undefined>	66	3.6	1,881	6.6	1.5	131	285	2	133	2.0
Totals:	1,811	100.0	28,392	100.0	22.9	1,971	7,476	56	2,027	29.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	41.16	0.00	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	7,055	0	367	7,422
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	41.16	0.00	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-7,055	0	359	-6,696
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	18.76	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	2	10	6,796
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	48.75	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	0	10	6,794
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.85	48.75	0.3250	0.01	0.107	25.9	236.7	25.9	150	6,783	1	10	6,795

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	4,448	6	232	4,685
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.01	0.107	25.9	236.7	25.9	150	4,911	4	8	4,923
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.96	7.39	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-4,448	6	226	-4,216
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.71	7.46	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	4,234	5	220	4,459
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.71	7.46	0.3250	0.01	0.107	25.9	236.7	25.9	150	4,675	4	7	4,685
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	6,910	38	360	7,308
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-6,910	37	351	-6,522
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	37.2	137.2	37.2	1,684	6,910	-37	360	7,234
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.31	45.37	0.3250	0.02	0.107	36.3	317.2	36.3	1,684	-6,910	-36	351	-6,595
											Totals:	34,168	32	2,872	37,072

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Overlashed Bundle	1/4" EHS	Unknown,	22.23	7.62	0.2500	0.02	0.121	36.3	317.2	36.3	1,800	-4,072	0	183	-3,889
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.92	7.77	1.5000	0.51	0.900	37.2	137.2	37.2	2,000	4,055	-19	431	4,466
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.92	7.77	1.5000	0.35	0.900	25.9	236.7	25.9	150	3,770	-13	14	3,770
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.77	7.84	1.5000	0.51	0.900	37.2	137.2	37.2	2,000	3,819	33	406	4,258
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.77	7.84	1.5000	0.50	0.900	36.3	317.2	36.3	2,000	-3,819	32	396	-3,390
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.96	7.89	1.5000	0.50	0.900	36.3	317.2	36.3	2,000	-3,655	-3	379	-3,279
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.46	0.337	37.2	137.2	37.2	925	1,971	19	414	2,404
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.31	0.337	25.9	236.7	25.9	150	3,962	13	13	3,989
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	20.94	7.70	1.3300	0.45	0.337	36.3	317.2	36.3	925	-1,971	18	405	-1,548
	COMMUNICATION														
											Totals:	4,059	80	2,642	6,781

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		35.85	6.01	236.7	236.7	50.00	4.50	3.50	96.00	0	2,298	2,298
Normal	Crossarm		39.25	5.79	142.0	142.0	50.00	4.50	3.50	96.00	7	71	78
Totals:											7	2,369	2,377

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 200.0°	Riser	KU, UTILITY	27.54	6.57	200.0	200.0	27.54	330.46	4.00	4.00	330.46	35	510	545
Totals:											35	510	545	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	40.28	0.00	0.0	0.0	13.00	9.00	10.50	0	187	187	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	0.00	236.7	0.0	3.00	3.80	12.75	9	84	93	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	45.00	319.1	0.0	3.00	3.80	12.75	3	84	88	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.85	-45.00	154.3	0.0	3.00	3.80	12.75	14	84	98	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.96	0.00	230.4	140.4	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	186.9	96.9	2.00	3.00	3.19	2	11	13	
Bolt	Single Bolt	Unknown, COMMUNICATION	22.23	0.00	317.2	407.2	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.92	0.00	96.9	186.9	5.00	3.00	0.00	-4	0	-4	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.77	0.00	227.2	227.2	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.96	0.00	317.2	407.2	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.94	0.00	230.0	140.0	5.00	3.00	0.00	6	0	6	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.44	45.00	224.7	0.0	13.00	9.00	10.50	93	182	275	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.44	-45.00	59.3	0.0	13.00	9.00	10.50	-89	182	93	
Totals:											42	827	869

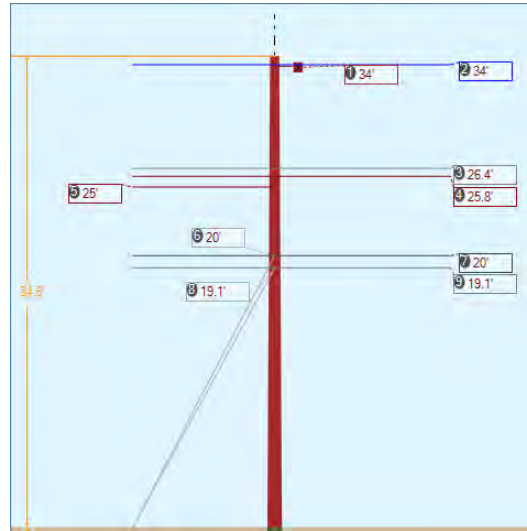
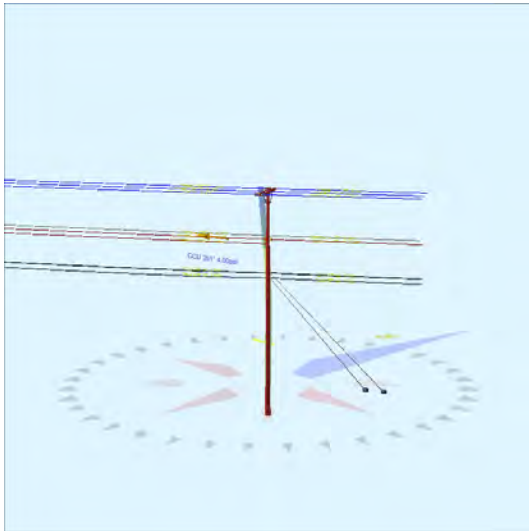
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Sidewalk	KU, UTILITY	36.55	0.00	8.00	0.375	75.00	50.0	59.8	0.273	36.54	0.64

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Sidewalk	2.30e+7	15,400	0.90	13,860	700	3,118	2,835	2,831	2,446	1,424	-1,413	-16,720
Totals:										2,446	1,424	-1,413	-16,720

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	8.00	50.0	20,000	1.00	20,000	2,835	2,831	14.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.77	34.33	11.76	14.19	7.96	13.06	1.60e+6	60.00	57.00	40.28	197,478	1967.33	26.32

Pole Num:	76W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025288 Deg	Longitude:	-84.456881 Deg	Elevation:	918.994880949127		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	62.2	260.5
Groundline	44.6	327.7
Vertical	4.1	237.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,943	260.5
Groundline	23,629	340.1
GL Allowable	68,854	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.4	57.7		18.8	260.5	18.8	255.6
? EHS 1/4 (Down)			20.0	62.8	260.5	69.1	255.6
? Single Helix Anchor	17.1	56.2		14.2	260.5	14.6	210.0
? EHS 1/4 (Down)			19.1	47.4	260.5	53.6	210.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 340.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-175	-16.4	-1,856	-7.9	-2.7	-173	194	2	-170	-2.5
Comms	191	18.0	3,918	16.6	5.7	364	253	3	367	5.4
GuyBraces	1,021	96.1	21,219	89.8	30.8	1,973	7,182	79	2,052	30.2
Pole	32	3.0	598	2.5	0.9	56	1,663	18	74	1.1
Crossarms	-12	-1.2	-442	-1.9	-0.6	-41	190	2	-39	-0.6
Insulators	6	0.5	192	0.8	0.3	18	122	1	19	0.3
Pole Load	1,062	100.0	23,629	100.0	34.3	2,197	9,604	106	2,303	33.9
Pole Reserve Capacity			45,225		65.7	4,603			4,497	66.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 340.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-169	-15.9	-1,664	-7.0	-2.4	-155	278	3	-152	-2.2
Unknown, COMMUNICATION	1,212	114.1	25,137	106.4	36.5	2,337	7,473	83	2,419	35.6
Pole	32	3.0	598	2.5	0.9	56	1,663	18	74	1.1
<Undefined>	-12	-1.2	-442	-1.9	-0.6	-41	190	2	-39	-0.6
Totals:	1,062	100.0	23,629	100.0	34.3	2,197	9,604	106	2,303	33.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	7.62	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	0	83	17,274
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	45.89	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	2	83	17,275
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	45.39	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	17,190	-2	83	17,272
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	17.88	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	-1	270	-14,129
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	48.65	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	6	270	-14,122
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.00	48.19	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-14,398	-7	270	-14,134

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.37	6.33	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	13,335	4	65	13,403
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.37	6.33	0.3250	0.10	0.107	91.3	238.9	91.3	1,684	-11,169	13	210	-10,946
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.80	6.36	0.3250	0.01	0.107	25.9	56.7	25.9	1,684	13,043	1	63	13,107
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.36	0.3980	0.12	0.145	91.3	238.9	91.3	2,128	-13,804	-3	223	-13,584
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.00	6.41	0.3980	0.12	0.145	91.3	238.9	91.3	2,128	-13,376	-3	216	-13,163
Totals:											-3,594	9	1,838	-1,747	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.96	6.70	1.3300	1.18	0.337	91.3	238.9	91.3	925	-4,642	-8	352	-4,298
Telco	TELE 1.5	Unknown, COMMUNICATION	19.07	6.75	1.5000	0.35	0.900	25.9	56.7	25.9	2,000	11,450	5	113	11,568
Telco	TELE 1.5	Unknown, COMMUNICATION	19.07	6.75	1.5000	1.37	0.900	91.3	238.9	91.3	2,000	-9,590	-14	367	-9,236
CATV	CATV 1.0	Unknown, COMMUNICATION	19.96	6.70	1.3300	0.31	0.337	25.9	56.7	25.9	925	5,544	2	109	5,654
Totals:											2,761	-15	941	3,688	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	34.00	5.13	237.8	237.8	50.00	4.50	3.50	96.00	0	-416	-416	
Totals:											0	-416	-416

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	0.00	237.8	-181.1	3.00	3.80	12.75	2	29	31
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	45.00	321.3	-181.1	3.00	3.80	12.75	44	29	73
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	-45.00	154.3	-181.1	3.00	3.80	12.75	-40	29	-11
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	0.00	237.8	1.1	3.00	3.80	12.75	-3	29	26
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	45.00	321.3	1.1	3.00	3.80	12.75	38	29	68
Deadend	Deadend Insulator - 15 kV KU, UTILITY	34.00	-45.00	154.3	1.1	3.00	3.80	12.75	-45	29	-16

Spool	Spool Insulator - 25 kV	KU, UTILITY	26.37	0.00	327.8	237.8	2.00	3.00	3.19	2	2	4
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	56.7	56.7	2.00	3.00	3.19	0	2	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	238.9	238.9	2.00	3.00	3.19	0	2	2
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.00	0.00	238.9	238.9	2.00	3.00	3.19	0	2	2
Bolt	Single Bolt	Unknown, COMMUNICATION	19.96	0.00	238.9	328.9	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.07	0.00	56.7	146.7	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.07	0.00	238.9	238.9	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.96	0.00	58.9	328.9	5.00	3.00	0.00	1	0	1
Totals:										-3	184	181

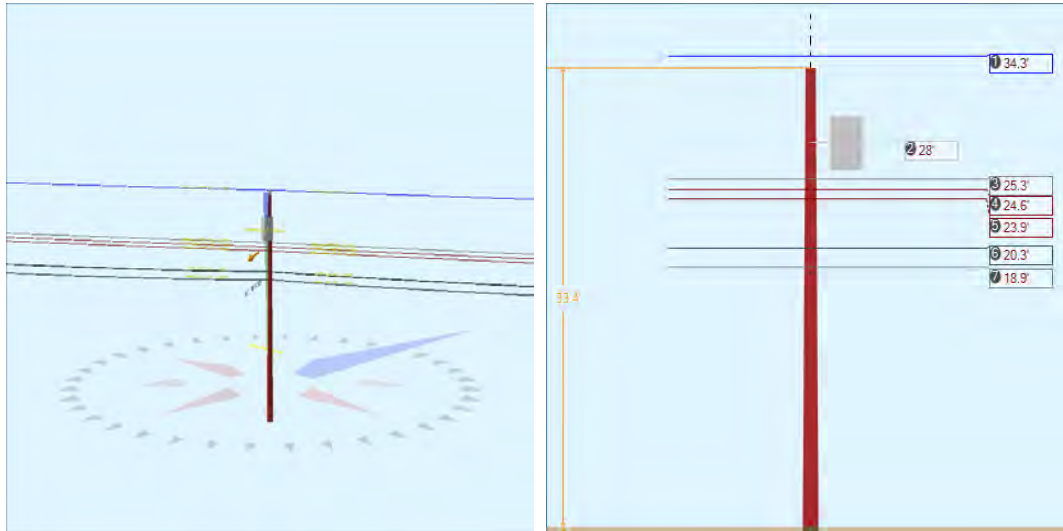
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Unknown, COMMUNICATION	19.96	0.00	20.37	0.25	75.00	57.7	44.3	0.121	26.77	1.43
EHS 1/4	Down	Unknown, COMMUNICATION	19.07	0.00	17.12	0.25	75.00	56.2	47.9	0.121	23.89	0.96

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,134	3,758	3,756	2,622	2,690	574	11,383
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,206	2,915	2,835	2,105	1,900	455	8,590
Totals:										4,727	4,590	1,029	19,973

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	20.37	57.7	20,000	1.00	20,000	3,758	3,756	18.8
Single Helix Anchor			18.00	17.12	56.2	20,000	1.00	20,000	2,915	2,835	14.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.63	33.21	9.97	13.02	6.69	10.74	1.60e+6	60.00	57.00	34.63	234,937	2342.34	24.39

Pole Num:	77W - 28930-2109	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.77	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025160 Deg	Longitude:	-84.457145 Deg	Elevation:	918.682392152408		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.8	0.0
Groundline	30.8	0.0
Vertical	12.5	21.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,824	148.3
Groundline	24,824	148.3
GL Allowable	82,108	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 148.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	411	42.1	11,161	45.0	13.6	921	268	3	924	13.6
Comms	321	32.9	6,567	26.5	8.0	542	482	5	547	8.0
PowerEquipments	55	5.6	3,776	15.2	4.6	312	1,216	12	324	4.8
Pole	182	18.7	3,111	12.5	3.8	257	1,845	18	275	4.0
Insulators	6	0.6	208	0.8	0.3	17	55	1	18	0.3
Pole Load	974	100.0	24,824	100.0	30.2	2,049	3,866	38	2,087	30.7
Pole Reserve Capacity			57,284		69.8	4,751			4,713	69.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 148.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	471	48.4	15,134	61.0	18.4	1,249	1,520	15	1,264	18.6
Unknown, COMMUNICATION	321	32.9	6,579	26.5	8.0	543	501	5	548	8.1
Pole	182	18.7	3,111	12.5	3.8	257	1,845	18	275	4.0
Totals:	974	100.0	24,824	100.0	30.2	2,049	3,866	38	2,087	30.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.27	0.00	0.3250	0.29	0.107	132.0	237.5	132.0	1,684	758	0	1,088	1,847
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.27	0.00	0.3250	0.14	0.107	91.3	58.9	91.3	1,684	652	0	753	1,405
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.65	0.3250	0.14	0.107	91.3	58.9	91.3	1,684	482	14	556	1,052
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.33	6.65	0.3250	0.29	0.107	132.0	237.5	132.0	1,684	560	20	804	1,384
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.57	6.70	0.3980	0.16	0.145	91.3	58.9	91.3	2,128	591	17	587	1,195
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.57	6.70	0.3980	0.33	0.145	132.0	237.5	132.0	2,128	687	24	849	1,560
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.88	6.74	0.3980	0.16	0.145	91.3	58.9	91.3	2,128	574	17	571	1,162

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.88	6.74	0.3980	0.33	0.145	132.0	237.5	132.0	2,128	668	24	825	1,517
											Totals:	4,972	116	6,034	11,122

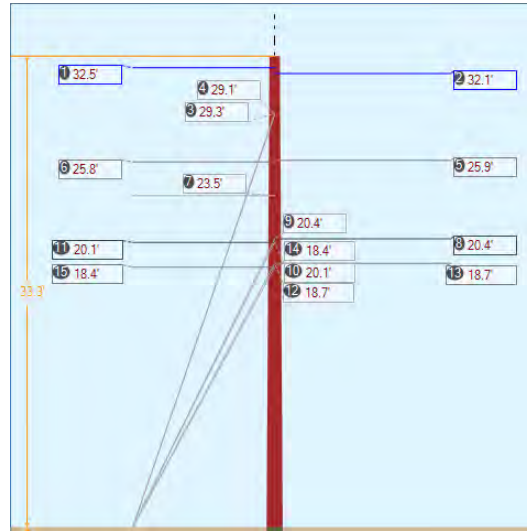
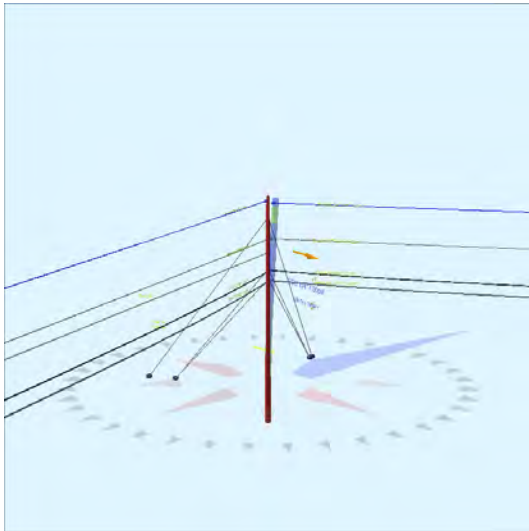
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.30	6.96	1.3300	1.19	0.337	91.3	58.9	91.3	925	212	42	989	1,242
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.30	6.96	1.3300	1.83	0.337	132.0	237.5	132.0	925	247	60	1,429	1,736
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.91	7.04	1.5000	1.37	0.900	91.3	58.9	91.3	2,000	427	73	1,007	1,507
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.91	7.04	1.5000	2.14	0.900	132.0	237.5	132.0	2,000	497	106	1,455	2,058
		COMMUNICATION													
											Totals:	1,383	282	4,880	6,544

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.00	21.99	150.0	150.0	640.00	47.00	--	24.00	--	2,227	1,535	3,763
											Totals:	2,227	1,535	3,763

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.40	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.33	0.00	148.2	58.2	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.57	0.00	148.2	58.2	2.00	3.00	3.19	2	11	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.88	0.00	148.2	58.2	2.00	3.00	3.19	2	11	13		
Bolt	Single Bolt	Unknown, COMMUNICATION	20.30	0.00	148.9	148.9	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.91	0.00	148.9	58.9	5.00	3.00	0.00	6	0	6		
											Totals:	17	190	207

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.29	33.41	10.52	14.72	7.32	11.39	1.60e+6	60.00	57.00	33.40	30,910	309.29	8.00

Pole Num:	78W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.74	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025037 Deg	Longitude:	-84.457408 Deg	Elevation:	909.124338184258		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.9	29.3
Groundline	14.2	0.0
Vertical	17.8	24.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,403	112.7
Groundline	11,586	107.8
GL Allowable	81,878	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.1	338.0	29.3	31.9	104.1	32.1	140.0
? Single Helix Anchor ? EHS 3/8 (Down)	22.0	240.0	29.2	33.1	104.1	33.3	70.0
? Single Helix Anchor ? EHS 3/8 (Down)	192.4	159.0	23.5	47.7	104.1	52.8	70.0
? Single Helix Anchor ? EHS 3/8 (Span/Head)	20.0	338.0	20.4	0.0	104.1	0.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)			18.7	0.0	104.1	0.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)			20.1	24.9	104.1	25.2	140.0
? Single Helix Anchor ? EHS 1/4 (Down)			17.0	42.5	104.1	47.2	140.0
? Single Helix Anchor ? EHS 1/4 (Down)			20.1	40.8	104.1	45.4	140.0
? Single Helix Anchor ? EHS 1/4 (Down)			18.4	27.3	104.1	27.6	70.0
? Single Helix Anchor ? EHS 1/4 (Down)			18.4	46.4	104.1	51.6	70.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 107.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	5,635	460.3	68,474	591.0	83.6	13,610	175	2	13,612	200.2
Comms	5,030	411.0	40,219	347.1	49.1	7,994	698	7	8,001	117.7
GuyBraces	-9,628	-786.5	-98,477	-850.0	-120.3	-19,573	27,322	269	-19,304	-283.9
Pole	181	14.8	1,285	11.1	1.6	256	1,838	18	274	4.0
Insulators	6	0.5	85	0.7	0.1	17	57	1	17	0.3
Pole Load	1,224	100.0	11,586	100.0	14.2	2,303	30,091	296	2,599	38.2
Pole Reserve Capacity			70,292		85.8	4,497			4,201	61.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 107.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	662	54.1	7,734	66.8	9.5	1,537	16,025	158	1,695	24.9
Unknown, COMMUNICATION	381	31.1	2,567	22.2	3.1	510	12,227	120	630	9.3
Pole	181	14.8	1,285	11.1	1.6	256	1,838	18	274	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,224	100.0	11,586	100.0	14.2	2,303	30,091	296	2,599	38.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.48	16.46	0.3250	0.52	0.107	192.4	159.0	192.4	1,684	44,598	10	959	45,567
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.07	16.49	0.3250	0.23	0.107	131.0	57.5	131.0	1,684	44,804	7	565	45,376
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.61	0.3250	0.23	0.107	131.0	57.5	131.0	1,684	36,228	12	457	36,697
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.82	6.62	0.3250	0.52	0.107	192.4	159.0	192.4	1,684	35,454	18	762	36,234
Totals:											161,084	48	2,743	163,874	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.39	6.95	1.3300	1.80	0.337	131.0	57.5	131.0	925	15,645	38	797	16,480
CATV	CATV 1.0	Unknown, COMMUNICATION	20.14	6.96	1.3300	2.95	0.337	192.4	159.0	192.5	925	15,190	55	1,318	16,564
Telco	TELE 1.5	Unknown, COMMUNICATION	18.66	7.05	1.5000	2.11	0.900	131.0	57.5	131.0	2,000	30,951	67	797	31,815
Telco	TELE 1.5	Unknown, COMMUNICATION	18.38	7.07	1.5000	3.51	0.900	192.4	159.0	192.5	2,000	29,980	98	1,315	31,393
Totals:											91,767	258	4,227	96,252	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.48	0.00	159.0	159.0	3.00	3.80	12.75	5	76	81
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.07	0.00	57.5	57.5	3.00	3.80	12.75	5	75	80
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	57.5	57.5	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.82	0.00	159.0	159.0	2.00	3.00	3.19	1	12	13
Bolt	Single Bolt	Unknown, COMMUNICATION	20.39	0.00	57.5	147.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.14	0.00	159.0	249.0	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	18.66	0.00	57.5	147.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	18.38	0.00	159.0	249.0	5.00	3.00	0.00	4	0	4
Totals:										27	176	202

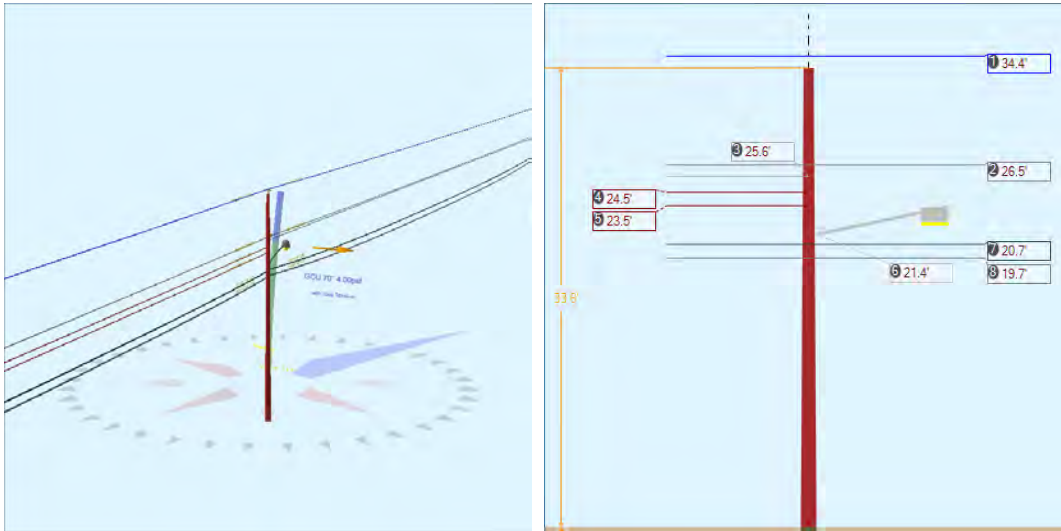
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.26	0.00	21.14	0.375	75.00	338.0	54.0	0.273	34.41	1.38
EHS 3/8	Down	KU, UTILITY	29.15	0.00	22.00	0.375	75.00	240.0	52.8	0.273	34.82	1.45
EHS 3/8	Span/Head	KU, UTILITY	23.46	23.46	192.41	0.375	75.00	159.0	0.0	0.273	190.56	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	20.39	0.00	20.01	0.25	75.00	338.0	45.4	0.121	26.81	0.97
EHS 1/4	Down	Unknown, COMMUNICATION	18.66	0.00	20.01	0.25	75.00	338.0	42.9	0.121	25.58	0.89
EHS 1/4	Down	Unknown, COMMUNICATION	20.14	0.00	17.00	0.25	75.00	240.0	49.7	0.121	24.62	0.97
EHS 1/4	Down	Unknown, COMMUNICATION	18.38	0.00	17.00	0.25	75.00	240.0	47.1	0.121	23.28	0.89

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,071	6,428	6,388	5,165	3,758	-2,408	-69,273
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,316	6,651	6,609	5,263	3,999	-2,683	-77,029
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	749
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,824	2,568	2,541	1,809	1,785	-1,143	-22,966
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,716	2,469	2,441	1,660	1,789	-1,147	-21,095
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,085	2,805	2,776	2,116	1,797	-1,206	-23,844
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,992	2,720	2,690	1,970	1,832	-1,229	-22,219
Totals:										17,983	14,959	-9,816	-235,677

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.14	338.0	20,000	1.00	20,000	6,428	6,388	32.1
Single Helix Anchor		18.00	22.00	240.0	20,000	1.00	20,000	6,651	6,609	33.3
Single Helix Anchor		18.00	192.41	159.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	20.01	338.0	20,000	1.00	20,000	5,035	4,981	25.2
Single Helix Anchor		18.00	17.00	240.0	20,000	1.00	20,000	5,524	5,465	27.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.89	33.99	10.35	25.63	7.32	11.38	1.60e+6	60.00	57.00	33.31	169,179	1690.48	5.62

Pole Num:	79W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024644 Deg	Longitude:	-84.457180 Deg	Elevation:	909.841159377569		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.4	70.0
Groundline	45.4	70.0
Vertical	0.9	159.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,141	103.3
Groundline	37,141	103.3
GL Allowable	82,537	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	192.4	339.0		21.6	70.0	22.2	160.0
? EHS 3/8 (Span/Head)			25.7	31.1	70.0	35.2	160.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 103.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,571	203.1	87,541	235.7	106.1	7,195	262	3	7,198	105.8
Comms	399	22.7	8,374	22.6	10.2	688	699	7	695	10.2
GuyBraces	-2,394	-136.1	-61,541	-165.7	-74.6	-5,058	45	0	-5,058	-74.4
Pole	153	8.7	2,624	7.1	3.2	216	1,858	18	234	3.4
Streetlights	24	1.4	-31	-0.1	0.0	-3	142	1	-1	0.0
Insulators	5	0.3	173	0.5	0.2	14	55	1	15	0.2
Pole Load	1,759	100.0	37,141	100.0	45.0	3,053	3,062	30	3,083	45.3
Pole Reserve Capacity			45,396		55.0	3,747			3,717	54.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 103.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,207	68.6	26,134	70.4	31.7	2,148	486	5	2,153	31.7
Unknown, COMMUNICATION	399	22.7	8,383	22.6	10.2	689	718	7	696	10.2
Pole	153	8.7	2,624	7.1	3.2	216	1,858	18	234	3.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,759	100.0	37,141	100.0	45.0	3,053	3,062	30	3,083	45.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.43	0.00	0.3250	0.29	0.107	131.5	157.1	131.5	1,684	44,567	0	878	45,446
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.43	0.00	0.3250	0.61	0.107	192.4	339.0	192.4	1,684	-42,526	0	1,317	-41,209
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.47	6.59	0.3250	0.29	0.107	131.5	157.1	131.5	1,684	34,252	16	675	34,943
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.47	6.59	0.3250	0.61	0.107	192.4	339.0	192.4	1,684	-32,683	23	1,012	-31,648
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.48	6.71	0.3980	0.32	0.145	131.5	157.1	131.5	2,128	40,026	14	680	40,720

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.49	6.77	0.3980	0.32	0.145	131.5	157.1	131.5	2,128	38,412	14	652	39,078
											Totals:	82,048	68	5,214	87,331

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.67	6.94	1.3300	2.97	0.337	192.4	339.0	192.5	925	-14,018	72	1,753	-12,192
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.67	6.94	1.3300	1.83	0.337	131.5	157.1	131.6	925	14,690	49	1,169	15,909
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.01	1.5000	3.53	0.900	192.4	339.0	192.5	2,000	-28,838	127	1,823	-26,888
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.67	7.01	1.5000	2.14	0.900	131.5	157.1	131.6	2,000	30,223	87	1,216	31,525
		COMMUNICATION													
											Totals:	2,057	336	5,961	8,354

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 8 ft. Arm	KU, UTILITY	21.42	4.40	335.0	335.0	75.00	24.00	20.00	3.00	96.00	-542	512	-31
											Totals:	-542	512	-31

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.56	0.00	0.0	0.0	13.00	9.00	10.50	0	130	130	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.47	0.00	68.0	338.0	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.48	0.00	157.1	157.1	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.49	0.00	157.1	157.1	2.00	3.00	3.19	1	9	10	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.67	0.00	69.0	429.0	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.67	0.00	69.0	429.0	5.00	3.00	0.00	5	0	5	
										Totals:	13	159	173

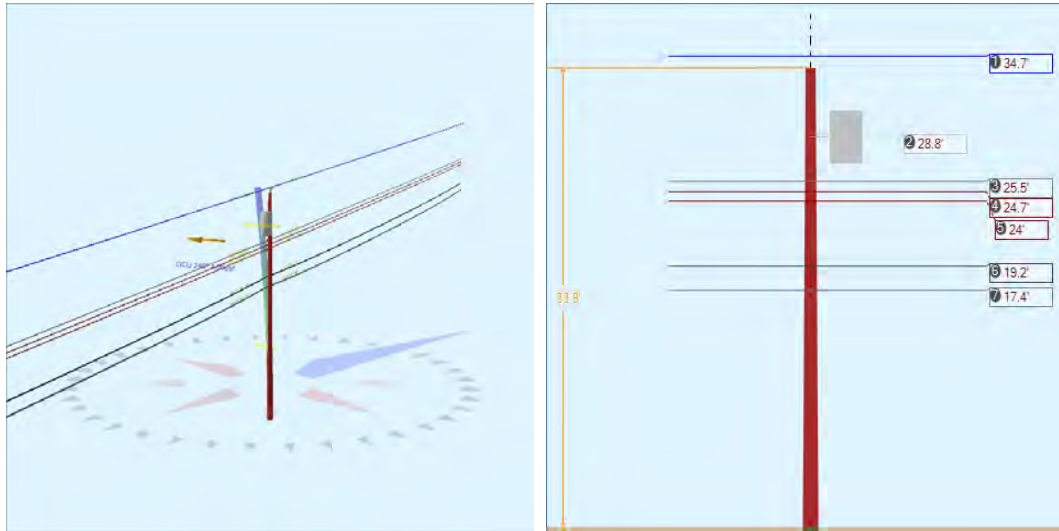
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.65	25.65	192.41	0.375	75.00	339.0	0.0	0.273	190.57	5.18

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	4,884	4,440	4,313	0	4,313	-2,434	-61,393
Totals:									0	4,313	-2,434	-61,393

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	192.41	339.0	20,000	1.00	20,000	4,440	4,313	22.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.24	32.92	10.67	7.37	7.32	11.41	1.60e+6	60.00	57.00	33.56	357,150	3402.52	111.11

Pole Num:	80W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.16	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.94	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024328 Deg	Longitude:	-84.457012 Deg	Elevation:	908.346405933806		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.1	0.0
Groundline	27.1	0.0
Vertical	13.0	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,071	241.4
Groundline	22,071	241.4
GL Allowable	83,274	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 241.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	384	40.0	10,561	47.9	12.7	859	303	3	862	12.7
Comms	331	34.4	6,385	28.9	7.7	519	545	5	525	7.7
PowerEquipments	55	5.7	1,723	7.8	2.1	140	1,216	12	152	2.2
Pole	185	19.2	3,193	14.5	3.8	260	1,881	18	278	4.1
Insulators	6	0.6	210	1.0	0.3	17	55	1	18	0.3
Pole Load	960	100.0	22,071	100.0	26.5	1,796	4,000	39	1,834	27.0
Pole Reserve Capacity			61,203		73.5	5,005			4,966	73.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 241.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	445	46.3	12,482	56.6	15.0	1,015	1,555	15	1,031	15.2
Unknown, COMMUNICATION	331	34.4	6,396	29.0	7.7	520	564	5	526	7.7
Pole	185	19.2	3,193	14.5	3.8	260	1,881	18	278	4.1
Totals:	960	100.0	22,071	100.0	26.5	1,796	4,000	39	1,834	27.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.71	0.00	0.3250	0.24	0.107	120.8	158.1	120.8	1,684	6,872	0	1,001	7,874
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.71	0.00	0.3250	0.29	0.107	131.5	337.1	131.5	1,684	-5,858	0	1,093	-4,765
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.49	6.67	0.3250	0.24	0.107	120.8	158.1	120.8	1,684	5,044	18	735	5,797
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.49	6.67	0.3250	0.29	0.107	131.5	337.1	131.5	1,684	-4,300	20	802	-3,477
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.71	6.72	0.3980	0.27	0.145	120.8	158.1	120.8	2,128	6,180	22	776	6,977
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.71	6.72	0.3980	0.32	0.145	131.5	337.1	131.5	2,128	-5,267	24	847	-4,397
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.03	6.76	0.3980	0.27	0.145	120.8	158.1	120.8	2,128	6,010	22	754	6,787

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.03	6.76	0.3980	0.32	0.145	131.5	337.1	131.5	2,128	-5,123	24	824	-4,275
											Totals:	3,559	131	6,832	10,521

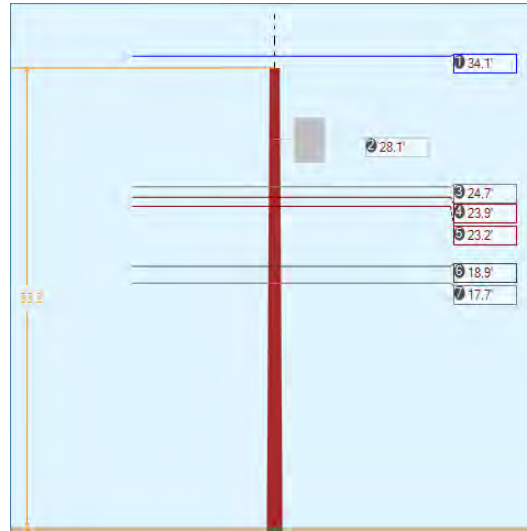
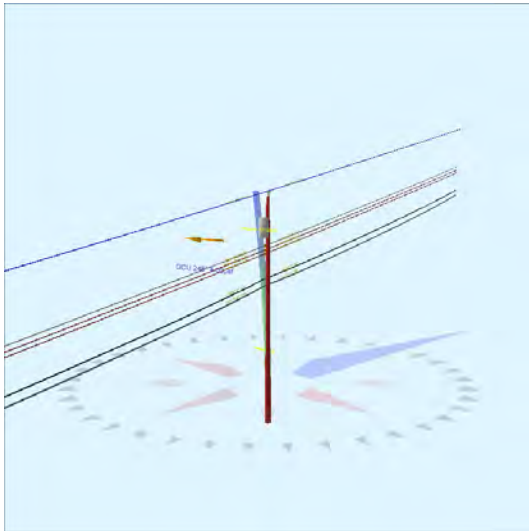
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.24	7.05	1.3300	1.65	0.337	120.8	158.1	120.8	925	2,091	55	1,230	3,377
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.24	7.05	1.3300	1.83	0.337	131.5	337.1	131.6	925	-1,782	60	1,343	-379
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.45	7.16	1.5000	1.92	0.900	120.8	158.1	120.8	2,000	4,101	98	1,220	5,419
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.45	7.16	1.5000	2.14	0.900	131.5	337.1	131.6	2,000	-3,496	107	1,332	-2,057
		COMMUNICATION													
											Totals:	914	321	5,125	6,361

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.79	21.97	155.0	155.0	640.00	47.00	--	24.00	--	142	1,574	1,716
											Totals:	142	1,574	1,716

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.84	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.49	0.00	247.6	157.6	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	247.6	157.6	2.00	3.00	3.19	2	11	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.03	0.00	247.6	157.6	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.24	0.00	247.6	157.6	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.45	0.00	247.6	157.6	5.00	3.00	0.00	6	0	6		
											Totals:	18	191	209

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.50	33.43	10.56	15.04	7.32	11.44	1.60e+6	60.00	57.00	33.84	30,814	307.66	7.69

Pole Num:	81W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.71	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024007 Deg	Longitude:	-84.456827 Deg	Elevation:	915.912831301788		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.0	0.0
Groundline	29.0	0.0
Vertical	9.5	19.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,276	245.7
Groundline	23,276	245.7
GL Allowable	81,690	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 245.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	449	43.5	11,948	51.3	14.6	991	298	3	994	14.6
Comms	353	34.3	6,778	29.1	8.3	562	536	5	567	8.3
PowerEquipments	42	4.0	1,266	5.4	1.6	105	694	7	112	1.6
Pole	181	17.6	3,078	13.2	3.8	255	1,832	18	273	4.0
Insulators	6	0.6	206	0.9	0.3	17	55	1	18	0.3
Pole Load	1,031	100.0	23,276	100.0	28.5	1,930	3,415	34	1,964	28.9
Pole Reserve Capacity			58,414		71.5	4,870			4,836	71.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 245.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	496	48.1	13,409	57.6	16.4	1,112	1,028	10	1,122	16.5
Unknown, COMMUNICATION	353	34.3	6,789	29.2	8.3	563	555	5	569	8.4
Pole	181	17.6	3,078	13.2	3.8	255	1,832	18	273	4.0
Totals:	1,031	100.0	23,276	100.0	28.5	1,930	3,415	34	1,964	28.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.11	0.00	0.3250	0.27	0.107	127.6	159.6	127.6	1,684	3,920	0	1,045	4,964
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.11	0.00	0.3250	0.24	0.107	120.8	338.1	120.8	1,684	-2,417	0	991	-1,427
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.68	0.3250	0.27	0.107	127.6	159.6	127.6	1,684	2,832	19	755	3,606
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.68	0.3250	0.24	0.107	120.8	338.1	120.8	1,684	-1,747	18	716	-1,012
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.89	6.73	0.3980	0.30	0.145	127.6	159.6	127.6	2,128	3,468	24	796	4,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.89	6.73	0.3980	0.27	0.145	120.8	338.1	120.8	2,128	-2,139	22	755	-1,361
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.23	6.77	0.3980	0.30	0.145	127.6	159.6	127.6	2,128	3,371	24	774	4,169

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.23	6.77	0.3980	0.27	0.145	120.8	338.1	120.8	2,128	-2,079	22	734	-1,323
Totals:												5,208	129	6,566	11,904

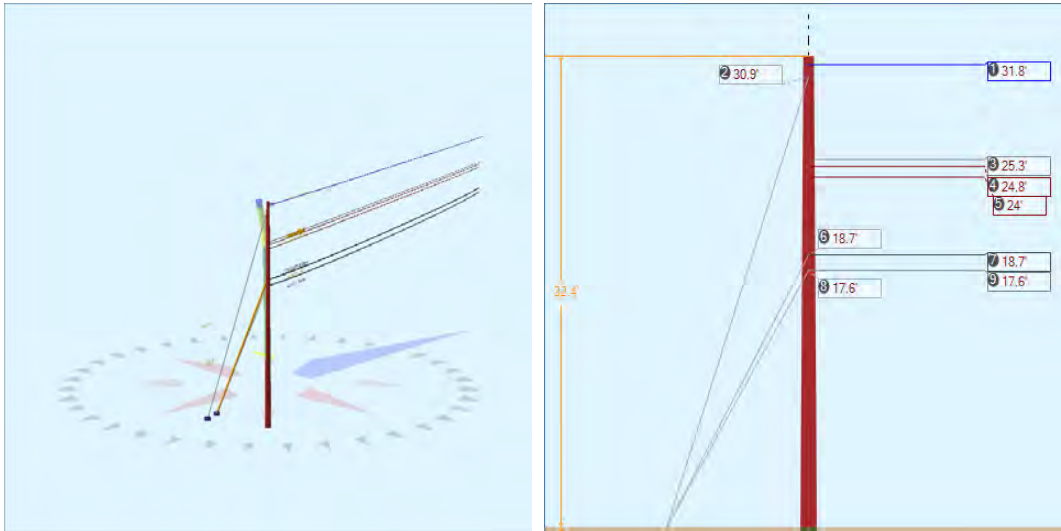
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.90	7.03	1.3300	1.76	0.337	127.6	159.6	127.6	925	1,192	59	1,283	2,534
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.90	7.03	1.3300	1.65	0.337	120.8	338.1	120.8	925	-735	56	1,217	538
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.67	7.11	1.5000	2.06	0.900	127.6	159.6	127.6	2,000	2,411	104	1,312	3,826
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.67	7.11	1.5000	1.92	0.900	120.8	338.1	120.8	2,000	-1,487	98	1,244	-145
		COMMUNICATION													
Totals:												1,381	316	5,056	6,753

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	28.09	20.97	160.0	160.0	365.00	39.00	--	22.00	--	91	1,171	1,262
Totals:												91	1,171	1,262

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.24	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.66	0.00	248.8	158.8	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.89	0.00	248.8	158.8	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.23	0.00	248.8	158.8	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.90	0.00	248.8	158.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.67	0.00	248.8	158.8	5.00	3.00	0.00	6	0	6
Totals:										18	188	205

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.86	33.19	10.56	13.47	7.32	11.37	1.60e+6	60.00	57.00	33.24	36,130	359.50	10.53

Pole Num:	82W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Deadend
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Near Capacity
Aux Data 2	Unset	Setting Depth (ft):	7.65	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.37	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023690 Deg	Longitude:	-84.456712 Deg	Elevation:	909.026306361053		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	64.5	25.0
Groundline	25.8	0.0
Vertical	14.8	24.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,895	162.1
Groundline	13,697	305.1
GL Allowable	79,392	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.1	161.0		45.0	340.0	45.0	342.8
? EHS 3/8 (Down)			30.9	64.9	340.0	71.4	342.8
? Single Helix Anchor	19.0	161.0		53.8	340.0	53.8	342.8
? EHS 1/4 (Down)			18.7	92.9	340.0	102.2	342.8
? EHS 1/4 (Down)			17.6	87.0	340.0	95.7	342.8
System Capacity Summary:				Near Capacity		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 305.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	8,166	807.7	98,300	717.7	123.8	18,341	153	2	18,343	269.7
Comms	3,133	309.8	25,908	189.2	32.6	4,834	275	3	4,837	71.1
GuyBraces	-10,434	-1032.1	-111,660	-815.2	-140.6	-20,834	22,334	224	-20,610	-303.1
Pole	144	14.2	1,100	8.0	1.4	205	1,762	18	223	3.3
Insulators	3	0.3	50	0.4	0.1	9	36	0	10	0.1
Pole Load	1,011	100.0	13,697	100.0	17.3	2,556	24,561	247	2,802	41.2
Pole Reserve Capacity			65,695		82.7	4,244			3,998	58.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 305.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	3,970	392.7	38,725	282.7	48.8	7,226	11,211	113	7,338	107.9
Unknown, COMMUNICATION	-3,103	-306.9	-26,128	-190.8	-32.9	-4,875	11,588	116	-4,759	-70.0
Pole	144	14.2	1,100	8.0	1.4	205	1,762	18	223	3.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,011	100.0	13,697	100.0	17.3	2,556	24,561	247	2,802	41.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.75	16.45	0.3250	0.19	0.107	127.6	339.6	127.6	1,684	57,270	6	-4	57,273
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.26	6.59	0.3250	0.19	0.107	127.6	339.6	127.6	1,684	45,559	16	-3	45,572
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.78	6.62	0.3980	0.23	0.145	127.6	339.6	127.6	2,128	56,471	19	-3	56,487
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.04	6.67	0.3980	0.23	0.145	127.6	339.6	127.6	2,128	54,792	19	-3	54,808
Totals:											214,093	60	-13	214,140	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.71	6.99	1.3300	1.74	0.337	127.6	339.6	127.6	925	18,534	48	-5	18,577
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.64	7.06	1.5000	2.04	0.900	127.6	339.6	127.6	2,000	37,782	85	-5	37,862
		COMMUNICATION													
Totals:											56,316	133	-10	56,439	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	31.75	0.00	0.0	0.0	3.00	3.80	12.75	4	61	66
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.26	0.00	339.6	339.6	2.00	3.00	3.19	2	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.78	0.00	339.6	339.6	2.00	3.00	3.19	2	9	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.04	0.00	339.6	339.6	2.00	3.00	3.19	2	9	11
Bolt	Three Bolt	Unknown, COMMUNICATION	18.71	0.00	339.6	339.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.64	0.00	339.6	339.6	5.00	3.00	0.00	5	0	5
Totals:										19	90	108

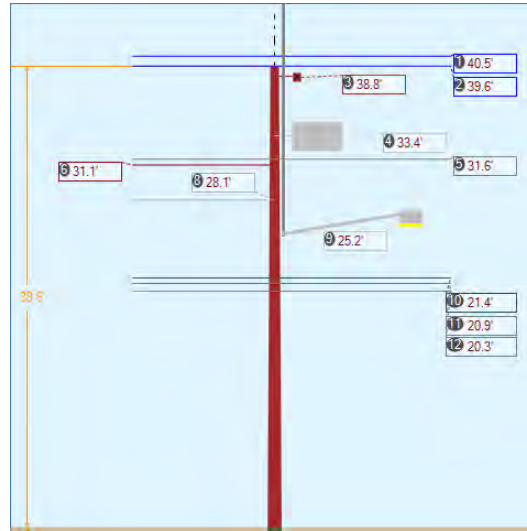
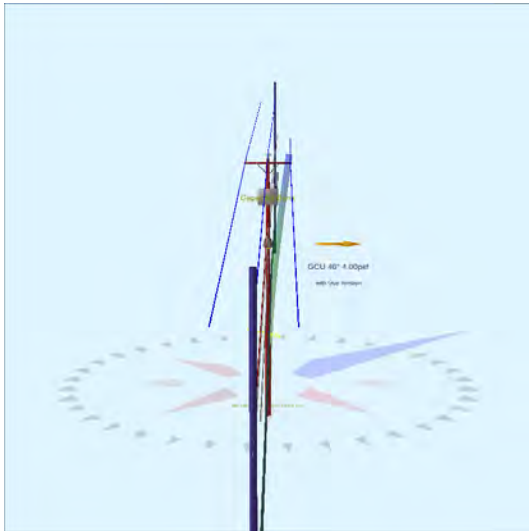
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	30.93	0.00	22.12	0.375	75.00	161.0	54.2	0.273	36.35	2.06
EHS 1/4	Down	Unknown, COMMUNICATION	18.71	0.00	18.98	0.25	75.00	161.0	44.4	0.121	24.88	1.96
EHS 1/4	Down	Unknown, COMMUNICATION	17.64	0.00	18.98	0.25	75.00	161.0	42.8	0.121	24.13	1.78

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,896	8,996	8,996	7,300	5,257	-4,258	-129,878
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	6,114	5,558	5,558	3,892	3,968	-3,214	-59,396
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,726	5,206	5,206	3,535	3,822	-3,095	-53,971
Totals:										14,726	13,048	-10,567	-243,245

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	22.12	161.0	20,000	1.00	20,000	8,996	8,996	45.0
Single Helix Anchor		18.00	18.98	161.0	20,000	1.00	20,000	10,763	10,763	53.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.60	33.99	10.24	23.03	7.32	11.26	1.60e+6	60.00	57.00	32.35	166,320	1659.51	6.76

Pole Num:	83W - 27285-2049	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.42	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.72	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025573 Deg	Longitude:	-84.457094 Deg	Elevation:	911.695628501899		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	45.6
Groundline	0.0	45.6
Vertical	24.0	225.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	43.3	45.6
Groundline	43.3	45.6
GL Allowable	96,273	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	122.8	135.5		0.0	45.6	0.0	0.0
? EHS 3/8 (Span/Head)			28.1	0.0	45.6	0.0	0.0
? Single Helix Anchor	126.8	315.7		1.8	45.6	3.5	130.0
? EHS 3/8 (Span/Head)			28.1	2.6	45.6	5.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	305	25.1	11,478	35.4	11.9	810	297	3	812	11.9
Comms	458	37.6	10,086	31.1	10.5	711	881	8	719	10.6
GuyBraces	79	6.5	2,213	6.8	2.3	156	58	1	157	2.3
GenericEquipments	70	5.7	2,295	7.1	2.4	162	817	7	169	2.5
Pole	223	18.3	4,404	13.6	4.6	311	2,343	21	331	4.9
Crossarms	1	0.1	49	0.2	0.1	4	95	1	4	0.1
Streetlights	32	2.6	773	2.4	0.8	55	162	1	56	0.8
Risers	41	3.4	778	2.4	0.8	55	54	0	55	0.8
Insulators	8	0.7	333	1.0	0.4	24	84	1	24	0.4
Pole Load	1,217	100.0	32,408	100.0	33.7	2,286	4,790	42	2,328	34.2
Pole Reserve Capacity			63,865		66.3	4,514			4,472	65.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	465	38.2	15,557	48.0	16.2	1,097	625	6	1,103	16.2
Unknown, COMMUNICATION	458	37.6	10,103	31.2	10.5	713	909	8	721	10.6
<Undefined>	71	5.8	2,344	7.2	2.4	165	912	8	173	2.5
Pole	223	18.3	4,404	13.6	4.6	311	2,343	21	331	4.9
Totals:	1,217	100.0	32,408	100.0	33.7	2,286	4,790	42	2,328	34.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.46	0.00	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,400	0	1,195	-2,206
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.46	0.00	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,864	0	1,233	5,097
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,329	125	1,170	-2,034
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,782	129	1,207	5,119

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-3,329	-124	1,170	-2,283
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.61	45.33	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,782	-128	1,207	4,861
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.61	6.63	0.3250	0.25	0.107	122.8	135.5	122.8	1,684	-2,656	18	933	-1,704
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	31.61	6.63	0.3250	0.27	0.107	126.8	315.8	126.8	1,684	3,018	19	963	4,001
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	31.11	6.66	0.2570	0.23	0.067	122.8	135.5	122.8	150	-233	-1	843	609
Totals:											1,500	39	9,921	11,461	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.40	7.24	1.3300	1.68	0.337	122.8	135.5	122.8	925	-988	58	1,401	472
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.40	7.24	1.3300	1.75	0.337	126.8	315.8	126.8	925	1,122	60	1,447	2,629
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.26	1.5000	1.96	0.900	122.8	135.5	122.8	2,000	-2,088	102	1,498	-489
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.26	1.5000	2.04	0.900	126.8	315.8	126.8	2,000	2,373	105	1,546	4,024
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.28	7.30	1.5000	1.96	0.900	122.8	135.5	122.8	2,000	-2,024	102	1,452	-470
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.28	7.30	1.5000	2.04	0.900	126.8	315.8	126.8	2,000	2,300	106	1,499	3,904
		COMMUNICATION													
Totals:											695	534	8,842	10,071	

GenericEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	Capacitor Bank	33.40	22.03	135.0	0.0	430.00	30.00	30.00	--	42.00	-44	2,336	2,291
Totals:											-44	2,336	2,291

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.79	5.46	315.6	315.6	50.00	4.50	3.50	96.00	2	47	49	
Totals:											2	47	49

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 10 ft. Arm	KU, UTILITY	25.19	4.51	135.0	135.0	85.00	24.00	20.00	3.00	120.00	-36	808	772
Totals:												-36	808	772

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 140.0°	Riser	KU, UTILITY	28.35	6.09	140.0	140.0	28.35	340.16	2.50	2.50	340.16	-2	778	777
Totals:												-2	778	777

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.59	0.00	0.0	0.0	13.00	9.00	10.50	0	184	184
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.98	45.00	38.7	0.0	6.00	3.50	7.50	43	50	93
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.98	-45.00	232.5	0.0	6.00	3.50	7.50	-43	50	7
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.61	0.00	45.6	315.6	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.11	0.00	135.5	135.5	2.00	3.00	3.19	0	14	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.40	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.93	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.28	0.00	45.6	315.6	5.00	3.00	0.00	6	0	6
Totals:										20	313	332

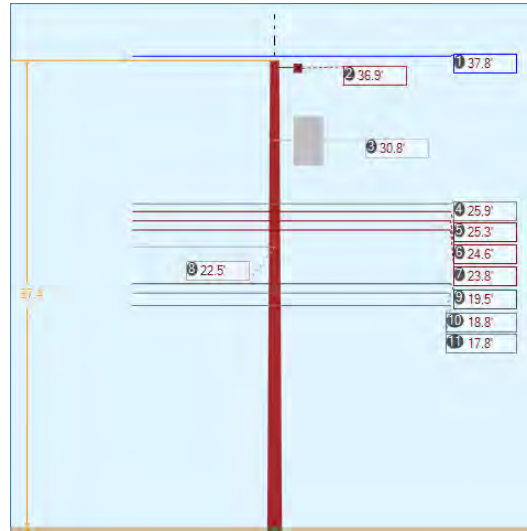
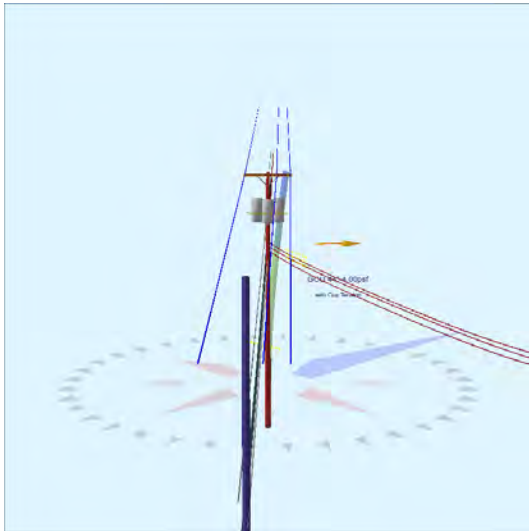
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	28.07	28.07	122.77	0.375	75.00	135.5	0.0	0.273	120.91	0.00
EHS 3/8	Span/Head	KU, UTILITY	28.07	28.07	126.77	0.375	75.00	315.7	0.0	0.273	124.91	0.28

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	875	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	771	701	357	0	357	15	
Totals:										0	357	15	2,209

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	122.77	135.5	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	126.77	315.7	20,000	1.00	20,000	701	357	3.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.02	33.55	11.05	10.36	7.32	12.01	1.60e+6	60.00	57.00	39.59	236,716	2395.16	50.00

Pole Num:	84W - 27285-2045	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.90	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025799 Deg	Longitude:	-84.457405 Deg	Elevation:	905.972449229721		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.2	0.0
Groundline	40.2	0.0
Vertical	4.2	26.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	35,290	18.0
Groundline	35,290	18.0
GL Allowable	90,145	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.8	135.7		37.3	44.1	39.4	320.0
? EHS 3/8 (Span/Head)			22.5	53.8	44.1	62.6	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 18.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,963	324.6	99,092	280.8	109.9	7,485	490	5	7,489	110.1
Comms	364	29.9	6,301	17.9	7.0	476	924	9	484	7.1
GuyBraces	-3,449	-282.5	-77,375	-219.3	-85.8	-5,845	30	0	-5,844	-85.9
PowerEquipments	148	12.1	3,535	10.0	3.9	267	3,648	34	301	4.4
Pole	187	15.3	3,509	9.9	3.9	265	2,151	20	285	4.2
Crossarms	2	0.1	36	0.1	0.0	3	95	1	4	0.1
Insulators	6	0.5	194	0.6	0.2	15	89	1	15	0.2
Pole Load	1,221	100.0	35,290	100.0	39.2	2,666	7,427	69	2,734	40.2
Pole Reserve Capacity			54,855		60.9	4,134			4,066	59.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 18.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	668	54.7	25,460	72.2	28.2	1,923	4,229	39	1,962	28.9
Unknown, COMMUNICATION	364	29.9	6,285	17.8	7.0	475	953	9	484	7.1
Pole	187	15.3	3,509	9.9	3.9	265	2,151	20	285	4.2
<Undefined>	2	0.1	36	0.1	0.0	3	95	1	4	0.1
Totals:	1,221	100.0	35,290	100.0	39.2	2,666	7,427	69	2,734	40.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	18.80	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	38	1,018	-37,531
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	18.80	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	41	1,088	39,333
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	-121	1,018	-37,691
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	-129	1,088	39,163
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.76	45.33	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-38,588	107	1,018	-37,462

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.76	45.33	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	38,204	114	1,088	39,406
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.84	0.3250	0.27	0.107	126.8	135.8	126.8	1,684	-26,489	-17	699	-25,807
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.93	6.84	0.3250	0.30	0.107	135.0	315.5	135.0	1,684	26,226	-18	747	26,954
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.88	0.3980	0.34	0.145	135.0	315.5	135.0	2,128	32,327	12	793	33,131
Secondary	ACSR 1 AWG 6/1 ROBIN	KU, UTILITY	24.55	6.92	0.3550	0.32	0.115	135.0	315.5	135.0	1,830	26,990	10	733	27,733
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.82	6.96	0.3980	0.34	0.145	135.0	315.5	135.0	2,128	30,451	12	747	31,210
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.88	0.3980	0.12	0.145	83.1	112.0	83.2	100	-230	-1	509	277
Secondary	ACSR 1 AWG 6/1 ROBIN	KU, UTILITY	24.55	6.92	0.3550	0.11	0.115	83.1	112.0	83.2	100	-224	-1	470	246
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.82	6.96	0.3980	0.12	0.145	83.1	112.0	83.2	100	-217	-1	479	261
Totals:											87,683	45	11,496	99,223	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.51	7.22	1.3300	1.75	0.337	126.8	135.8	126.8	925	-10,951	-53	1,167	-9,837
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.51	7.22	1.3300	1.88	0.337	135.0	315.5	135.0	925	10,843	-57	1,247	12,033
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.77	7.26	1.5000	2.04	0.900	126.8	135.8	126.8	2,000	-22,781	-93	1,227	-21,647
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.77	7.26	1.5000	2.21	0.900	135.0	315.5	135.0	2,000	22,554	-99	1,311	23,766
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.77	7.32	1.5000	2.04	0.900	126.8	135.8	126.8	2,000	-21,565	-94	1,162	-20,497
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.77	7.32	1.5000	2.21	0.900	135.0	315.5	135.0	2,000	21,351	-100	1,241	22,492
		COMMUNICATION													
Totals:											-549	-496	7,355	6,309	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.83	22.05	135.0	135.0	640.00	47.00	--	24.00	--	-1,015	4,555	3,540
Totals:											-1,015	4,555	3,540	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		36.94	5.44	135.6	135.6	50.00	4.50	3.50	96.00	-20	56	36
Totals:											-20	56	36

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	-18.00	62.4	0.0	6.00	3.50	7.50	13	43	55	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	45.00	218.7	0.0	6.00	3.50	7.50	-40	43	2	
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.13	-45.00	52.5	0.0	6.00	3.50	7.50	35	43	78	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	225.6	135.6	2.00	3.00	3.19	-2	11	9	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.29	0.00	315.5	315.5	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.55	0.00	315.5	315.5	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.82	0.00	315.5	315.5	2.00	3.00	3.19	1	10	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.51	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.77	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.77	0.00	225.6	135.6	5.00	3.00	0.00	-5	0	-5	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.29	0.00	112.0	112.0	2.00	3.00	3.19	0	11	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.55	0.00	112.0	112.0	2.00	3.00	3.19	0	10	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.82	0.00	112.0	112.0	2.00	3.00	3.19	0	10	10	
Totals:											-7	200	194

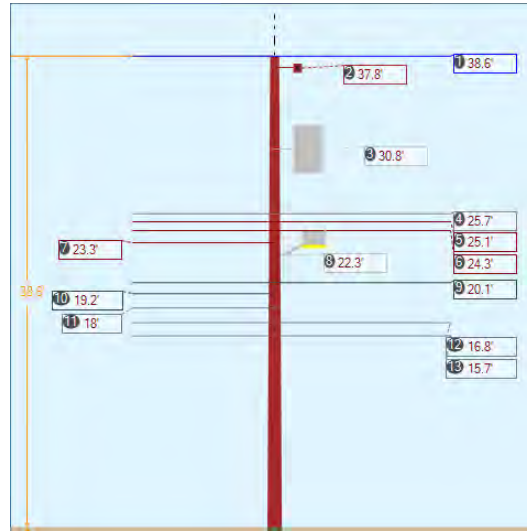
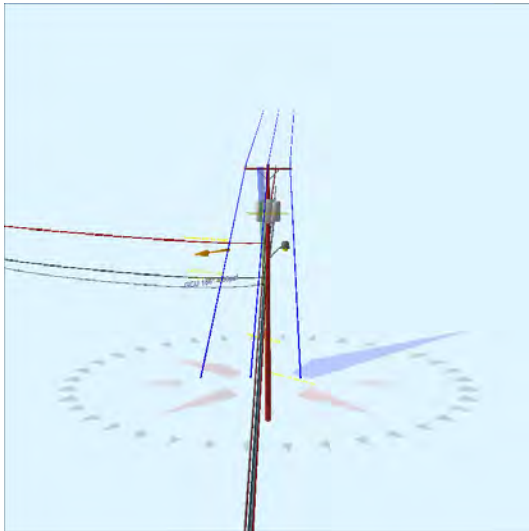
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	22.46	22.46	126.77	0.375	75.00	135.7	0.0	0.273	124.89	5.87

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	8,670	7,882	7,462	0	7,462	-3,477	-77,478	
Totals:											0	7,462	-3,477	-77,478

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	126.77	135.7	20,000	1.00	20,000	7,882	7,462	39.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.00	33.93	10.70	13.19	7.32	11.75	1.60e+6	60.00	57.00	37.39	177,565	1768.30	23.81

Pole Num:	85W - 27285-2033	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.36	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.36	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026064 Deg	Longitude:	-84.457726 Deg	Elevation:	903.472315248087		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	68.8	0.0
Groundline	68.8	0.0
Vertical	25.6	24.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	63,616	161.5
Groundline	63,616	161.5
GL Allowable	93,599	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,028	78.8	47,835	75.2	51.1	3,479	527	5	3,484	51.2
Comms	177	6.9	3,446	5.4	3.7	251	992	9	260	3.8
PowerEquipments	126	4.9	7,434	11.7	7.9	541	2,603	23	564	8.3
Pole	198	7.7	3,830	6.0	4.1	279	2,259	20	299	4.4
Crossarms	20	0.8	717	1.1	0.8	52	95	1	53	0.8
Streetlights	18	0.7	175	0.3	0.2	13	86	1	14	0.2
Insulators	5	0.2	178	0.3	0.2	13	97	1	14	0.2
Pole Load	2,572	100.0	63,616	100.0	68.0	4,627	6,658	60	4,687	68.9
Pole Reserve Capacity			29,983		32.0	2,173			2,113	31.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	2,128	82.8	54,377	85.5	58.1	3,955	3,210	29	3,984	58.6
<Undefined>	69	2.7	1,950	3.1	2.1	142	150	1	143	2.1
Unknown, COMMUNICATION	177	6.9	3,459	5.4	3.7	252	1,039	9	261	3.8
Pole	198	7.7	3,830	6.0	4.1	279	2,259	20	299	4.4
Totals:	2,572	100.0	63,616	100.0	68.0	4,627	6,658	60	4,687	68.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	5.46	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	-15	422	58,933
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	5.46	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	-12	331	-58,599
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	-74	422	58,874
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	-61	331	-58,648
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	38.65	45.33	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	58,526	44	422	58,992

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	38.65	45.33	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-58,918	36	331	-58,551
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.72	6.93	0.3250	0.25	0.107	135.0	135.5	135.0	1,684	38,926	9	281	39,216
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.72	6.93	0.3250	0.17	0.107	110.3	316.3	110.3	1,684	-39,187	7	220	-38,960
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.96	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	47,933	11	298	48,242
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.96	0.3980	0.19	0.145	110.3	316.3	110.3	2,128	-48,255	9	234	-48,012
Secondary	TRIPLEX 4 AWG		25.06	6.96	0.6800	0.65	0.164	63.7	249.0	63.7	100	109	7	491	606
Secondary	TRIPLEX 4 AWG		25.06	6.96	0.6800	0.65	0.164	63.7	249.0	63.7	120	130	7	491	628
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.34	7.01	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	46,558	11	289	46,858
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.34	7.01	0.3980	0.19	0.145	110.3	316.3	110.3	2,128	-46,870	9	227	-46,634
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.34	7.07	0.3980	0.29	0.145	135.0	135.5	135.0	2,128	44,643	24	278	44,944
											Totals:	42,809	13	5,069	47,891

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.07	7.26	1.3300	1.87	0.337	135.0	135.5	135.0	925	16,691	28	486	17,206
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.07	7.26	1.3300	1.47	0.337	110.3	316.3	110.3	925	-16,803	23	381	-16,399
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.79	7.45	1.5000	2.20	0.900	135.0	135.5	135.0	2,000	30,187	50	445	30,681
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.79	7.45	1.5000	1.71	0.900	110.3	316.3	110.3	2,000	-30,389	41	349	-30,000
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.72	7.52	1.5000	2.20	0.900	135.0	135.5	135.0	2,000	28,257	50	416	28,723
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.72	7.52	1.5000	1.71	0.900	110.3	316.3	110.3	2,000	-28,447	41	326	-28,079
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.17	7.31	1.3300	0.80	0.337	63.7	249.0	63.8	120	100	13	582	695
		COMMUNICATION													
Telco	TELE 1.0	Unknown,	18.00	7.38	1.0000	1.00	0.860	63.7	249.0	63.9	200	156	20	448	624
		COMMUNICATION													
											Totals:	-248	265	3,433	3,450

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	30.84	22.12	135.0	135.0	640.00	47.00	--	24.00	--	2,006	1,543	3,550
Transformer	1PH-25KVA	KU, UTILITY	30.84	21.12	135.0	135.0	365.00	39.00	--	22.00	--	1,545	2,348	3,893
Totals:												3,552	3,891	7,442

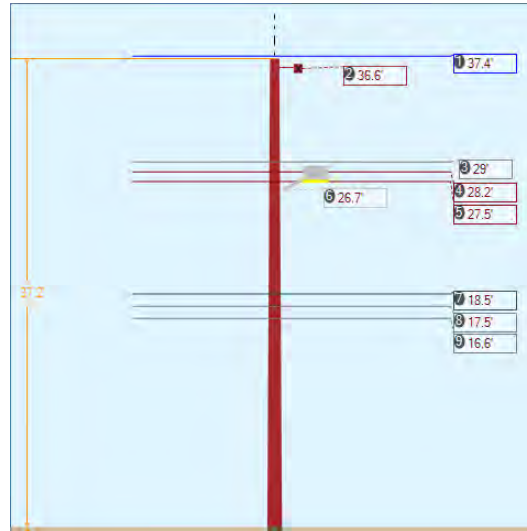
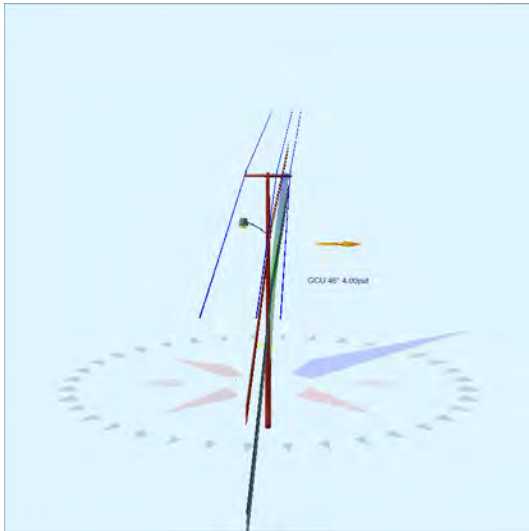
Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		37.84	5.46	315.9	315.9	50.00	4.50	3.50	96.00	-39	757	718	
Totals:												-39	757	718

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	22.28	4.63	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-228	403	175
Totals:												-228	403	175

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	0.00	315.9	0.0	6.00	3.50	7.50	-5	44	40	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	45.00	39.0	0.0	6.00	3.50	7.50	-23	44	21	
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.02	-45.00	232.8	0.0	6.00	3.50	7.50	14	44	58	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.72	0.00	225.9	315.9	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	225.9	315.9	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.34	0.00	225.9	315.9	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.34	0.00	135.5	135.5	2.00	3.00	3.19	2	10	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.07	0.00	225.9	315.9	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.79	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.72	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.17	0.00	225.9	315.9	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.00	0.00	225.9	315.9	5.00	3.00	0.00	3	0	3	
Totals:											3	175	179

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.90	33.72	10.90	20.67	7.32	11.90	1.60e+6	60.00	57.00	38.64	26,047	260.09	3.91

Pole Num:	86W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026282 Deg	Longitude:	-84.457995 Deg	Elevation:	899.09259996709		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.5	0.0
Groundline	33.5	0.0
Vertical	9.0	20.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,592	46.3
Groundline	29,592	46.3
GL Allowable	89,755	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 46.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	501	41.7	16,518	55.8	18.4	1,254	407	4	1,258	18.5
Comms	466	38.8	8,645	29.2	9.6	657	825	8	664	9.8
Pole	207	17.2	3,870	13.1	4.3	294	2,138	20	314	4.6
Crossarms	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Streetlights	20	1.7	291	1.0	0.3	22	86	1	23	0.3
Insulators	5	0.4	221	0.8	0.3	17	74	1	17	0.3
Pole Load	1,200	100.0	29,592	100.0	33.0	2,247	3,625	34	2,281	33.5
Pole Reserve Capacity			60,163		67.0	4,553			4,519	66.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 46.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	526	43.8	17,014	57.5	19.0	1,292	538	5	1,297	19.1
Unknown, COMMUNICATION	466	38.8	8,663	29.3	9.7	658	853	8	666	9.8
Pole	207	17.2	3,870	13.1	4.3	294	2,138	20	314	4.6
<Undefined>	1	0.1	46	0.2	0.1	4	95	1	4	0.1
Totals:	1,200	100.0	29,592	100.0	33.0	2,247	3,625	34	2,281	33.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	18.81	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	45	994	1,060
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	18.81	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	50	1,111	2,021
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	112	994	1,127
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	126	1,111	2,097
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	21	-112	994	903
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	37.44	45.33	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	860	-125	1,111	1,846

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.04	6.65	0.3250	0.20	0.107	110.3	136.3	110.3	1,684	16	17	771	804
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.04	6.65	0.3250	0.25	0.107	123.3	317.1	123.3	1,684	666	19	862	1,546
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.69	0.3980	0.23	0.145	110.3	136.3	110.3	2,128	20	20	816	856
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.25	6.69	0.3980	0.28	0.145	123.3	317.1	123.3	2,128	819	23	912	1,754
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.48	6.74	0.3980	0.23	0.145	110.3	136.3	110.3	2,128	19	20	794	834
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.48	6.74	0.3980	0.28	0.145	123.3	317.1	123.3	2,128	797	23	887	1,707
Totals:											4,980	217	11,358	16,556	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.55	7.27	1.3300	1.48	0.337	110.3	136.3	110.3	925	6	53	1,092	1,150
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.55	7.27	1.3300	1.69	0.337	123.3	317.1	123.4	925	234	59	1,221	1,513
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.55	7.33	1.5000	1.72	0.900	110.3	136.3	110.3	2,000	12	92	1,129	1,233
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.55	7.33	1.5000	1.97	0.900	123.3	317.1	123.4	2,000	478	103	1,262	1,844
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.61	7.38	1.5000	1.72	0.900	110.3	136.3	110.3	2,000	11	93	1,069	1,173
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.61	7.38	1.5000	1.97	0.900	123.3	317.1	123.4	2,000	453	104	1,195	1,751
		COMMUNICATION													
Totals:											1,193	504	6,968	8,665	

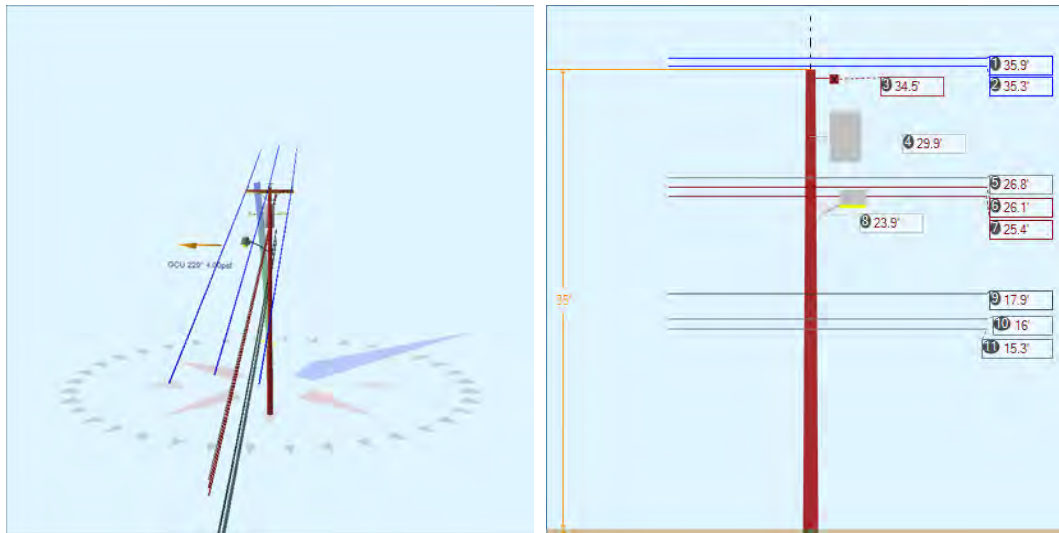
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	36.63	5.45	317.1	317.1	50.00	4.50	3.50	96.00	1	45	46	
Totals:											1	45	46

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.75	4.28	230.0	230.0	45.00	24.00	20.00	3.00	36.00	-238	530	292
Totals:											-238	530	292	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	18.00	30.3	0.0	6.00	3.50	7.50	17	47	64
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	45.00	40.2	0.0	6.00	3.50	7.50	43	47	90
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.81	-45.00	234.0	0.0	6.00	3.50	7.50	-43	47	4
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.04	0.00	46.7	316.7	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.25	0.00	46.7	316.7	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.48	0.00	46.7	316.7	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	18.55	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.55	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.61	0.00	46.7	316.7	5.00	3.00	0.00	6	0	6
Totals:										41	181	222

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.18	33.05	10.94	14.15	7.32	11.73	1.60e+6	60.00	57.00	37.24	40,209	402.77	11.11

Pole Num:	87W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.40	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026529 Deg	Longitude:	-84.458292 Deg	Elevation:	904.83089712481		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.9	0.0
Groundline	26.9	0.0
Vertical	15.1	22.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,718	233.0
Groundline	22,718	233.0
GL Allowable	86,519	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 233.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	328	34.9	10,164	44.7	11.8	795	319	3	798	11.7
Comms	335	35.6	5,893	25.9	6.8	461	647	6	467	6.9
PowerEquipments	55	5.8	2,147	9.5	2.5	168	1,216	12	180	2.6
Pole	193	20.5	3,448	15.2	4.0	270	1,980	19	289	4.2
Crossarms	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Streetlights	20	2.1	712	3.1	0.8	56	86	1	57	0.8
Insulators	9	0.9	311	1.4	0.4	24	87	1	25	0.4
Pole Load	940	100.0	22,718	100.0	26.3	1,778	4,430	42	1,820	26.8
Pole Reserve Capacity			63,801		73.7	5,022			4,980	73.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 233.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	411	43.7	13,317	58.6	15.4	1,042	1,680	16	1,058	15.6
Unknown, COMMUNICATION	335	35.6	5,911	26.0	6.8	463	675	6	469	6.9
Pole	193	20.5	3,448	15.2	4.0	270	1,980	19	289	4.2
<Undefined>	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Totals:	940	100.0	22,718	100.0	26.3	1,778	4,430	42	1,820	26.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.92	0.00	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,251	0	1,060	-5,191
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.92	0.00	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,566	0	513	7,079
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,144	123	1,042	-4,979
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,454	60	505	7,018
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	45.33	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-6,144	-126	1,042	-5,229

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	35.30	45.33	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	6,454	-61	505	6,897
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.80	6.66	0.3250	0.25	0.107	123.3	137.1	123.3	1,684	-4,662	18	791	-3,854
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.80	6.66	0.3250	0.06	0.107	59.8	316.8	59.8	1,684	4,897	9	383	5,289
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.09	6.71	0.3980	0.28	0.145	123.3	137.1	123.3	2,128	-5,736	23	838	-4,876
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.09	6.71	0.3980	0.07	0.145	59.8	316.8	59.8	2,128	6,025	11	406	6,442
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.37	6.75	0.3980	0.28	0.145	123.3	137.1	123.3	2,128	-5,578	23	815	-4,740
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.37	6.75	0.3980	0.07	0.145	59.8	316.8	59.8	2,128	5,859	11	395	6,264
Totals:											1,739	90	8,291	10,121	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.95	7.20	1.3300	1.69	0.337	123.3	137.1	123.4	925	-1,715	58	1,174	-483
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.95	7.20	1.3300	0.75	0.337	59.8	316.8	59.8	925	1,802	28	569	2,399
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.02	7.32	1.5000	1.97	0.900	123.3	137.1	123.4	2,000	-3,311	103	1,146	-2,062
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.02	7.32	1.5000	0.85	0.900	59.8	316.8	59.8	2,000	3,478	50	555	4,082
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.27	7.36	1.5000	1.97	0.900	123.3	137.1	123.4	2,000	-3,155	103	1,092	-1,960
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.27	7.36	1.5000	0.85	0.900	59.8	316.8	59.8	2,000	3,314	50	529	3,893
		COMMUNICATION													
Totals:											412	392	5,064	5,868	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.89	21.97	310.0	310.0	640.00	47.00	--	24.00	--	502	1,635	2,138
Totals:											502	1,635	2,138	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.49	5.44	137.0	137.0	50.00	4.50	3.50	96.00	-5	47	42
Totals:											-5	47	42

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.86	4.34	225.0	225.0	45.00	24.00	20.00	3.00	36.00	237	472	709
Totals:												237	472	709

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.04	0.00	0.0	0.0	13.00	9.00	10.50	0	163	163	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.68	45.00	220.1	0.0	6.00	3.50	7.50	42	44	86	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.68	-45.00	53.9	0.0	6.00	3.50	7.50	-43	44	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.80	0.00	227.0	137.0	2.00	3.00	3.19	2	12	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.09	0.00	227.0	137.0	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.37	0.00	227.0	137.0	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.95	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.02	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.27	0.00	227.0	137.0	5.00	3.00	0.00	6	0	6	
Totals:											22	288	310

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.47	33.54	10.67	16.15	7.32	11.59	1.60e+6	60.00	57.00	35.04	29,351	293.36	6.62

34' 2" - 63W - NT

24' 9" - Lowest Power

21' 5" - Proposed Metronet

20' 9" - Highest Tel Cable

19' 11" - Highest Tel Drop

4' - Base offset

Base

34' 4" - 64W - 28930-2163

23' - Proposed Metronet

4' - Base offset

Base

35' 7" - 65W - 28930-2157

26' 5" - Lowest Power

22' - Proposed Metronet

19' 9" - Highest Tel Cable

18' 9" - Highest Tel Drop

4' - Base offset

Base

34' - 66W - 28930-2151

24' 3" - Lowest Power

20' 11" - Proposed Metronet

18' 4" - Highest Tel Cable

18' - Highest Tel Drop

4' - Base offset

Base

32' 9" - 67W - 28930-2143

24' 1" - Lowest Power

20' 6" - Proposed Metronet

18' 7" - Highest Tel Cable

17' 10" - Highest Tel Drop

4' - Base offset

Base

33' 9" - 68W - 28930-2141

25' 6" - Lowest Power

21' 2" - Proposed Metronet

18' 4" - Highest Tel Cable

4' - Base offset

Base

31' 5" - 69W - 28930-2137

23' 8" - Lowest Power

17' 5" - Proposed Metronet

15' 10" - Highest Tel Cable

4' - Base offset

Base

35' 11" - 70W - 28930-2135

22' 9" - Lowest Power

16' 11" - Proposed Metronet

15' 8" - Highest Tel Cable

13' 3" - Highest Tel Drop

4' - Base offset

Base

38' 11" - 71W - 28930-2129

25' 2" - Lowest Power

23' 1" - Proposed Metronet

22' 1" - Highest Tel Cable

20' - Highest Tel Drop

4' - Base offset

Base

38' 2" - 72W - 28930-2119

23' - Lowest Power

21' 10" - Highest Tel Cable

21' 10" - Highest Tel Drop

21' - Proposed Metronet

4' - Base offset

Base

36' 4" - 73W - 28930-2115

26' 10" - Lowest Power

21' 5" - Proposed Metronet

19' 1" - Highest Tel Cable

17' - Highest Tel Drop

4' - Base offset

Base

38' 8" - 74W - NT

23' 10" - Lowest Power

18' 9" - Proposed Metronet

16' 8" - Highest Tel Cable

4' - Base offset

Base

40' 3" - 75W - 28930-2111

24' 8" - Lowest Power

21' 4" - Proposed Metronet

19' 11" - Highest Tel Cable

19' 11" - Highest Tel Drop

4' - Base offset

Base

34' 8" - 76W - NT

25' - Lowest Power

20' 11" - Proposed Metronet

19' 1" - Highest Tel Cable

19' 1" - Highest Tel Drop

4' - Base offset

Base

33' 5" - 77W - 28930-2109

23' 11" - Lowest Power

20' 4" - Proposed Metronet

18' 11" - Highest Tel Cable

18' 11" - Highest Tel Drop

4' - Base offset

Base

33' 4" - 78W - NT

25' 10" - Lowest Power

21' 2" - Proposed Metronet

19' 1" - Highest Tel Drop

18' 5" - Highest Tel Cable

18' 5" - Base offset

Base

33' 7" - 79W - NT

21' 5" - Lowest Power

20' 11" - Highest Tel Drop

20' 2" - Proposed Metronet

19' 8" - Highest Tel Cable

4' - Base offset

Base

33' 10" - 80W - NT

21' 11" - Lowest Power

20' 3" - Proposed Metronet

17' 10" - Highest Tel Cable

17' 10" - Highest Tel Drop

4' - Base offset

Base

33' 3" - 81W - NT

22' 8" - Lowest Power

19' 11" - Proposed Metronet

18' 3" - Highest Tel Cable

18' 3" - Highest Tel Drop

4' - Base offset

Base

32' 4" - 82W - NT

21' 7" - Lowest Power

20' 8" - Proposed Metronet

18' 3" - Highest Tel Cable

18' 3" - Highest Tel Drop

4' - Base offset

Base

39' 7" - 83W - 27285-2049

25' 2" - Lowest Power

22' 5" - Proposed Metronet

20' 11" - Highest Tel Cable

4' - Base offset

Base

37' 5" - 84W - 27285-2045

23' 10" - Lowest Power

20' 6" - Proposed Metronet

18' 8" - Highest Tel Cable

18' 8" - Highest Tel Drop

4' - Base offset

Base

38' 8" - 85W - 27285-2033

21' 1" - Lowest Power

20' - Proposed Metronet

18' 1" - Highest Tel Cable

4' - Base offset

Base

37' 3" - 86W - NT

25' 9" - Lowest Power

19' 7" - Proposed Metronet

17' 7" - Highest Tel Cable

4' - Base offset

Base

35' - 87W - NT

23' 1" - Lowest Power

18' 11" - Proposed Metronet

16' - Highest Tel Cable

4' - Base offset

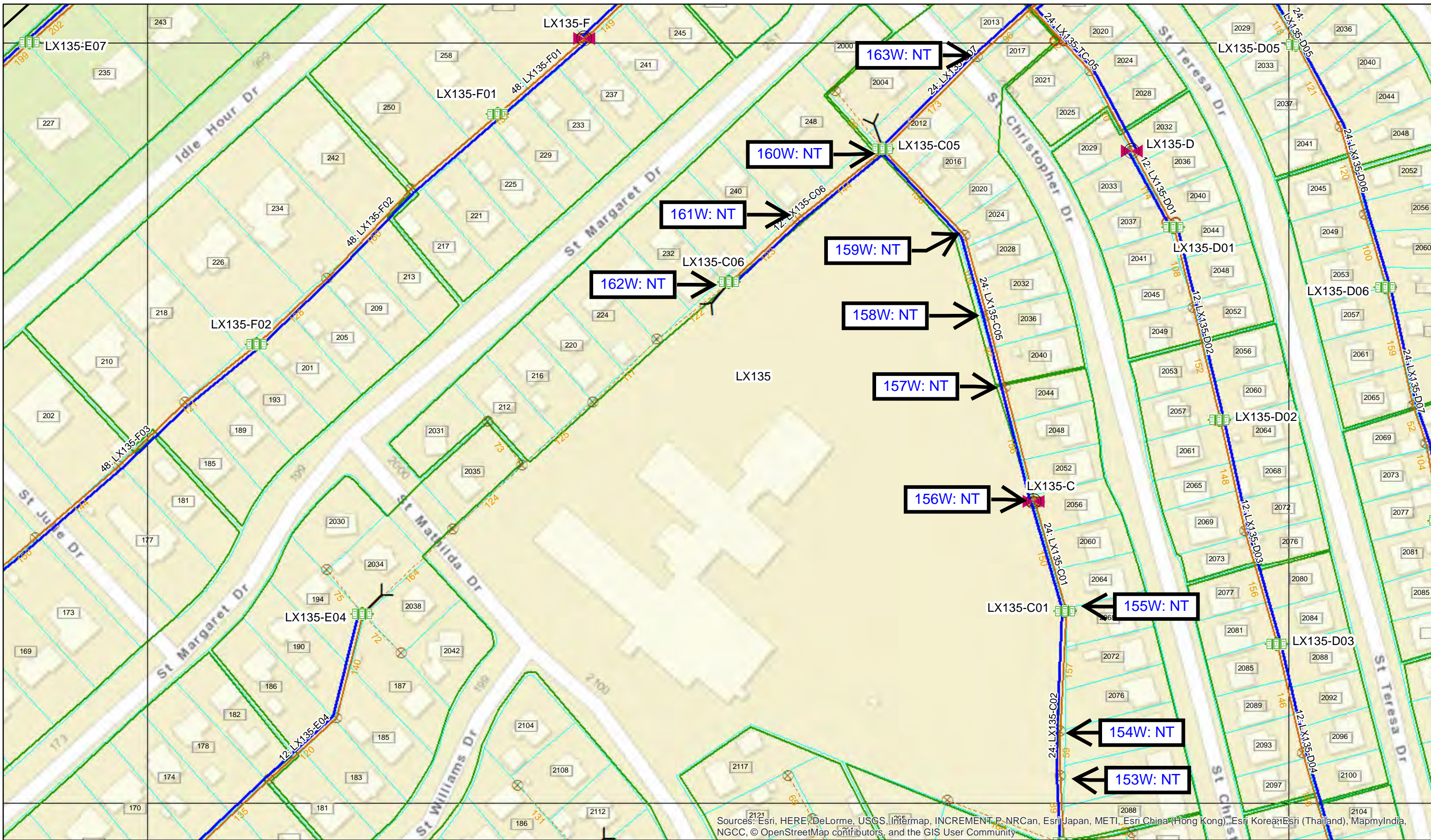
Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 1:31 PM
To: Windstream Jointuse
Cc: Hays, Sarah K
Subject: LX135-04W
Attachments: LX135-04W - WINDSTREAM POLE INVENTORY REPORT.PDF; LX135-04W - METRONET POLE INVENTORY REPORT.XLSX; O-Calcs.pdf; Pole Photos.pdf; 135W-04W Pole App Map.pdf; Map Key.pdf

Good Morning,
Please see attached for proposal titled LX135-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

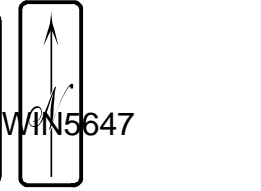
LXAW34
 PROJECT NUMBER:
 LXTNXY.00437.CB

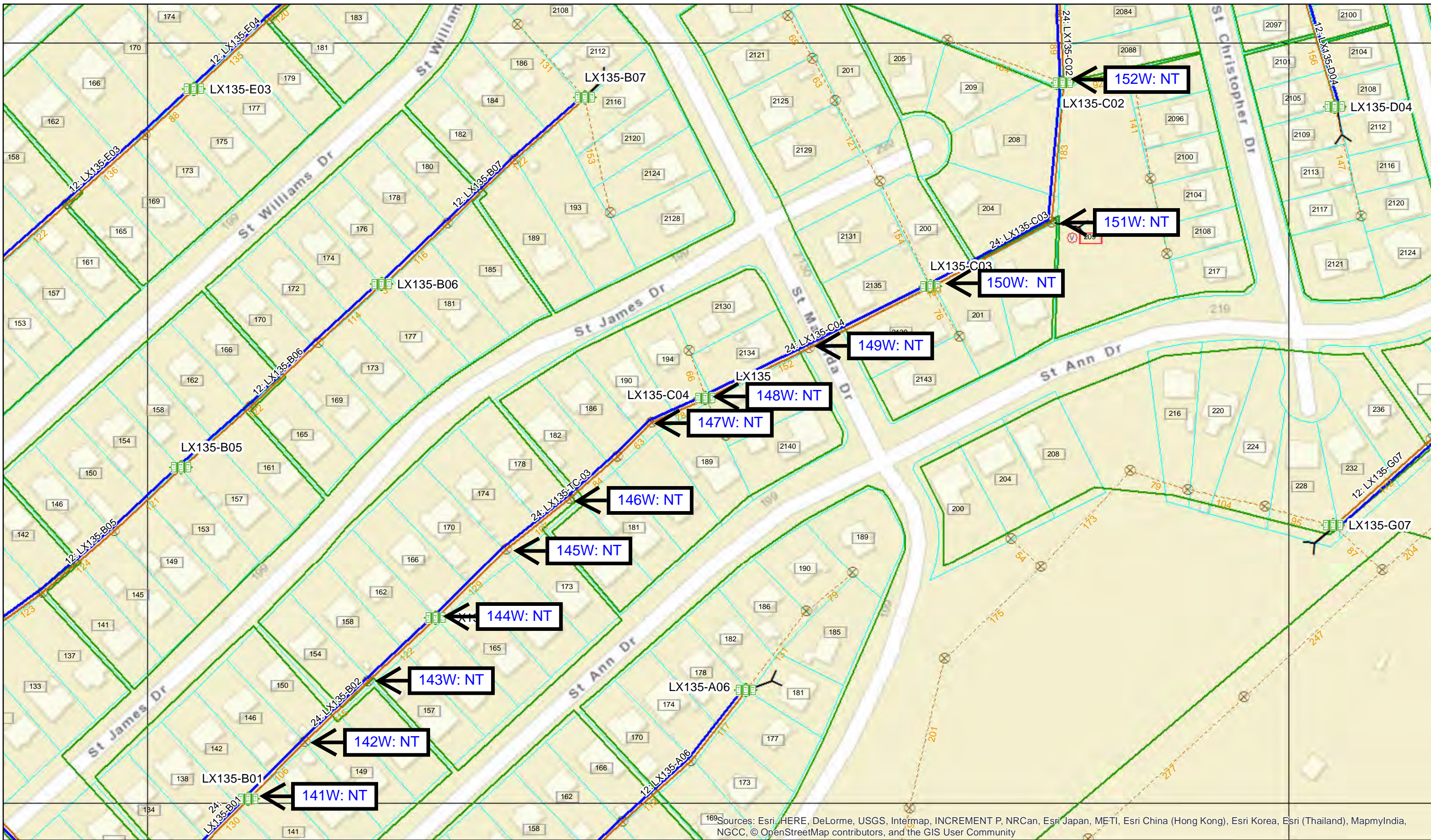
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAV/34
 PROJECT NUMBER:
 LXTNXY.00437.CB

DESIGN ENG
 USER NAME: arqjls
 DATE: 12/12/2017
 PROJECT NUMBER:
 LXTNXY.00437.CB

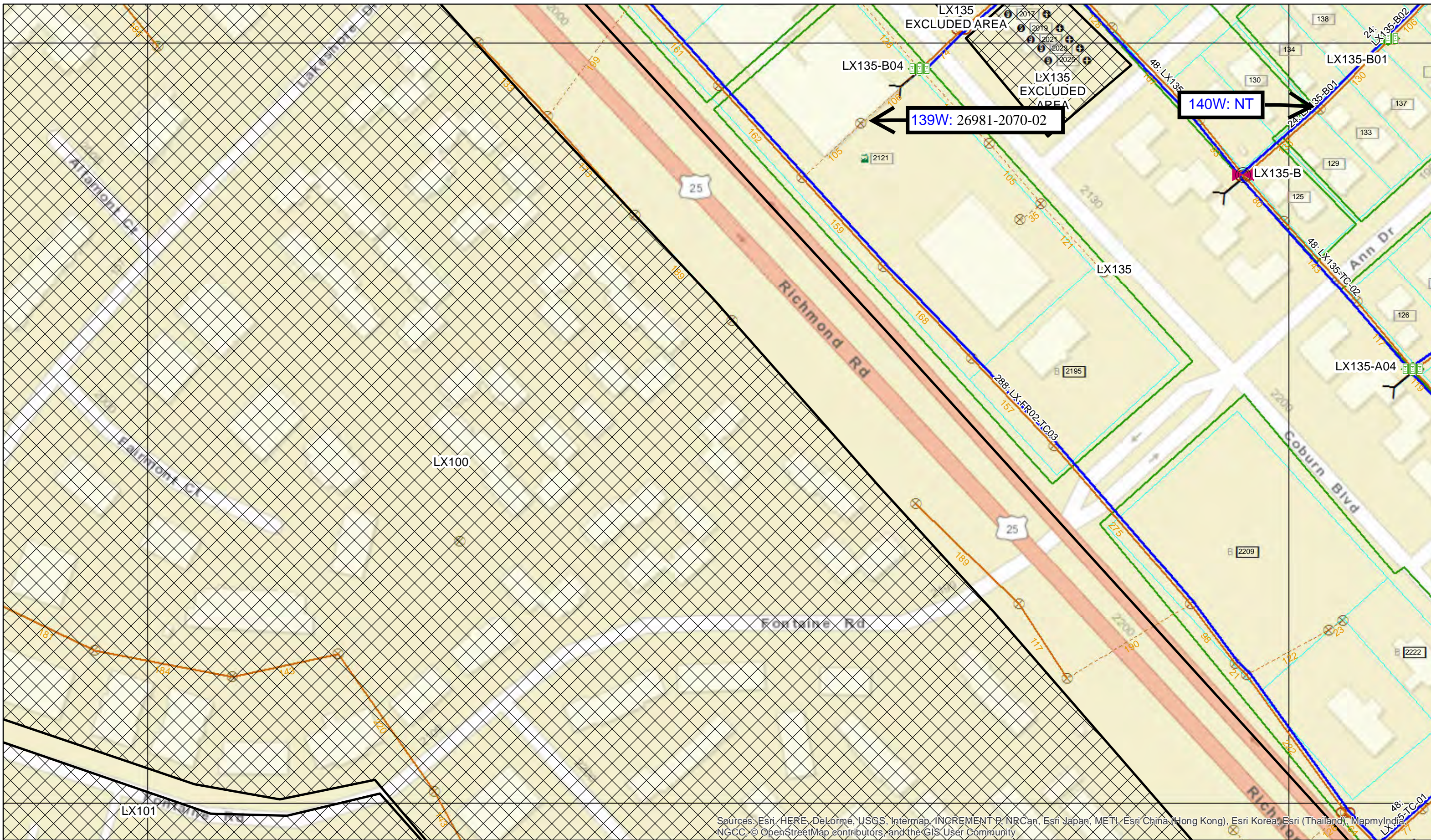
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAUS33
 PROJECT NUMBER:
 LXTNKY00457.CB
 DATE 12/12/2017
 USER NAME: arqgis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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 3701 Communications Way
 Evansville, In 47715

WIN5649

LX135-04W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole c	Make Ready
		139W	26981-2070-02	45/ 3	WS	1=None	
KU	0	139W	26981-2070-02		WS		
Windstream	25	139W	26981-2070-02		WS		
Total Pole Count	25	139W	26981-2070-02		WS		
Total Needing Make Ready	11	139W	26981-2070-02		WS		
		139W	26981-2070-02		WS		
		139W	26981-2070-02		WS		
		139W	26981-2070-02		WS		
		139W	26981-2070-02		WS		
		140W	NT	35/ 4	WS	1=None	
		140W	NT		WS		
		140W	NT		WS		
		140W	NT		WS		
		140W	NT		WS		
		140W	NT		WS		
		140W	NT		WS		
		140W	NT		WS		
		140W	NT		WS		
		141W	NT	40/ 3	WS	1=None	
		141W	NT		WS		
		141W	NT		WS		
		141W	NT		WS		
		141W	NT		WS		
		141W	NT		WS		
		141W	NT		WS		
		141W	NT		WS		
		141W	NT		WS		
		141W	NT		WS		
		142W	NT	45/ 3	WS	1=None	
		142W	NT		WS		
		142W	NT		WS		
		142W	NT		WS		
		142W	NT		WS		

142W NT		WS	
142W NT		WS	
142W NT		WS	
142W NT		WS	
142W NT		WS	
143W NT	35/ 4	WS	2=Comms
143W NT		WS	
143W NT		WS	
143W NT		WS	
143W NT		WS	
143W NT		WS	
143W NT		WS	
143W NT		WS	
143W NT		WS	
144W NT	40/ 3	WS	1=None
144W NT		WS	
144W NT		WS	
144W NT		WS	
144W NT		WS	
144W NT		WS	
144W NT		WS	
144W NT		WS	
145W NT	35/ 4	WS	2=Comms
145W NT		WS	
145W NT		WS	
145W NT		WS	
145W NT		WS	
145W NT		WS	
145W NT		WS	
145W NT		WS	
145W NT		WS	
146W NT	45/ 3	WS	1=None
146W NT		WS	
146W NT		WS	
146W NT		WS	
146W NT		WS	
146W NT		WS	
146W NT		WS	
146W NT		WS	
147W NT	40/ 3	WS	1=None
147W NT		WS	
147W NT		WS	
147W NT		WS	
147W NT		WS	

152W NT	45/3	WS	2=Comms
152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
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152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
152W NT		WS	
153W NT	40/3	WS	1=None
153W NT		WS	
153W NT		WS	
153W NT		WS	
153W NT		WS	
153W NT		WS	
153W NT		WS	
153W NT		WS	
154W NT	40/3	WS	2=Comms
154W NT		WS	
154W NT		WS	
154W NT		WS	
154W NT		WS	
154W NT		WS	
154W NT		WS	
154W NT		WS	
155W NT	40/3	WS	2=Comms
155W NT		WS	
155W NT		WS	
155W NT		WS	
155W NT		WS	
155W NT		WS	
155W NT		WS	
155W NT		WS	
155W NT		WS	
156W NT	40/3	WS	2=Comms
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	
156W NT		WS	

	157W NT	40/3	WS	2=Comms
	157W NT		WS	
	157W NT		WS	
	157W NT		WS	
	157W NT		WS	
	157W NT		WS	
	157W NT		WS	
	157W NT		WS	
	158W NT	40/3	WS	1=None
	158W NT		WS	
	158W NT		WS	
	158W NT		WS	
	158W NT		WS	
	158W NT		WS	
	158W NT		WS	
	159W NT	40/3	WS	1=None
	159W NT		WS	
	159W NT		WS	
	159W NT		WS	
	159W NT		WS	
	159W NT		WS	
	159W NT		WS	
	159W NT		WS	
	160W NT	40/3	WS	2=Comms
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	160W NT		WS	
	161W NT	40/3	WS	1=None
	161W NT		WS	
	161W NT		WS	
	161W NT		WS	
	161W NT		WS	
	161W NT		WS	
	161W NT		WS	
	161W NT		WS	

Owner	1=None 4=Comms&Elec	2=Comms 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
-------	------------------------	--	---------------------	-----------------------------	---------------------	----------	-----------	----------

2051 RICHMOND RD,	38.01974	-84.46579	KU
	38.01974	-84.46579	KU
	38.01974	-84.46579	KU
	38.01974	-84.46579	Metronet
	38.01974	-84.46579	Charter
	38.01974	-84.46579	Charter
	38.01974	-84.46579	Windstream
	38.01974	-84.46579	Windstream
	38.01974	-84.46579	Windstream
133 ST ANN DR	38.01986	-84.46369	KU
	38.01986	-84.46369	KU
	38.01986	-84.46369	KU
	38.01986	-84.46369	KU
	38.01986	-84.46369	KU
	38.01986	-84.46369	Metronet
	38.01986	-84.46369	Charter
	38.01986	-84.46369	Windstream
	38.01986	-84.46369	Windstream
141 ST ANN DR	38.02008	-84.46340	KU
	38.02008	-84.46340	KU
	38.02008	-84.46340	KU
	38.02008	-84.46340	KU
	38.02008	-84.46340	KU
	38.02008	-84.46340	KU
	38.02008	-84.46340	Metronet
	38.02008	-84.46340	Charter
	38.02008	-84.46340	Windstream
	38.02008	-84.46340	Windstream
150 ST JAMES DR	38.02027	-84.46307	KU
	38.02027	-84.46307	KU
	38.02027	-84.46307	KU
	38.02027	-84.46307	KU
	38.02027	-84.46307	KU

	38.02027	-84.46307	KU
	38.02027	-84.46307	Metronet
	38.02027	-84.46307	Charter
	38.02027	-84.46307	Windstream
	38.02027	-84.46307	Windstream
154 ST JAMES DR	38.02050	-84.46275	KU
	38.02050	-84.46275	KU
	38.02050	-84.46275	KU
	38.02050	-84.46275	KU
	38.02050	-84.46275	KU
	38.02050	-84.46275	Metronet
Lower Charter	38.02050	-84.46275	Charter
Lower Windstream	38.02050	-84.46275	Windstream
Lower Windstream	38.02050	-84.46275	Windstream
166 ST JAMES DR	38.02073	-84.46246	KU
	38.02073	-84.46246	KU
	38.02073	-84.46246	KU
	38.02073	-84.46246	KU
	38.02073	-84.46246	Metronet
	38.02073	-84.46246	Charter
	38.02073	-84.46246	Windstream
	38.02073	-84.46246	Windstream
173 ST ANN DR	38.02094	-84.46215	KU
	38.02094	-84.46215	KU
	38.02094	-84.46215	KU
	38.02094	-84.46215	KU
	38.02094	-84.46215	KU
	38.02094	-84.46215	Metronet
Lower & Resag Charter	38.02094	-84.46215	Charter
Lower Windstream	38.02094	-84.46215	Windstream
Lower Windstream	38.02094	-84.46215	Windstream
182 ST JAMES DR	38.02115	-84.46184	KU
	38.02115	-84.46184	KU
	38.02115	-84.46184	KU
	38.02115	-84.46184	KU
	38.02115	-84.46184	Metronet
	38.02115	-84.46184	Charter
	38.02115	-84.46184	Windstream
	38.02115	-84.46184	Windstream
190 ST JAMES DR	38.02143	-84.46148	KU
	38.02143	-84.46148	KU
	38.02143	-84.46148	KU
	38.02143	-84.46148	KU
	38.02143	-84.46148	KU

	38.02143	-84.46148	Metronet
	38.02143	-84.46148	Charter
	38.02143	-84.46148	Windstream
	38.02143	-84.46148	Windstream
194 ST JAMES DR	38.02156	-84.46125	KU
	38.02156	-84.46125	KU
	38.02156	-84.46125	KU
	38.02156	-84.46125	KU
	38.02156	-84.46125	Metronet
	38.02156	-84.46125	Charter
	38.02156	-84.46125	Windstream
	38.02156	-84.46125	Windstream
2136 ST MATHILDA DR	38.02170	-84.46078	KU
	38.02170	-84.46078	KU
	38.02170	-84.46078	KU
	38.02170	-84.46078	KU
	38.02170	-84.46078	KU
	38.02170	-84.46078	Metronet
Lower Charter	38.02170	-84.46078	Charter
Lower Windstream	38.02170	-84.46078	Windstream
51.30 200 ST JAMES DR	38.02194	-84.46020	KU
	38.02194	-84.46020	KU
	38.02194	-84.46020	KU
	38.02194	-84.46020	KU
	38.02194	-84.46020	KU
	38.02194	-84.46020	Metronet
Lower Charter	38.02194	-84.46020	Charter
Lower Windstream	38.02194	-84.46020	Windstream
38.60 209 ST ANN DR	38.02217	-84.45962	KU
	38.02217	-84.45962	KU
	38.02217	-84.45962	KU
	38.02217	-84.45962	KU
	38.02217	-84.45962	KU
	38.02217	-84.45962	KU
	38.02217	-84.45962	KU
	38.02217	-84.45962	Metronet
	38.02217	-84.45962	Metronet
Lower & Resag Charter	38.02217	-84.45962	Charter
Lower Charter	38.02217	-84.45962	Charter
Lower Charter	38.02217	-84.45962	Charter
Lower Charter	38.02217	-84.45962	Charter
Lower Windstream	38.02217	-84.45962	Windstream
Lower Windstream	38.02217	-84.45962	Windstream

	208 ST JAMES DR	38.02264	-84.45958	KU
		38.02264	-84.45958	KU
		38.02264	-84.45958	KU
		38.02264	-84.45958	KU
		38.02264	-84.45958	KU
		38.02264	-84.45958	KU
		38.02264	-84.45958	KU
		38.02264	-84.45958	Metronet
Lower Charter		38.02264	-84.45958	Charter
Lower Charter		38.02264	-84.45958	Charter
Lower Windstream		38.02264	-84.45958	Windstream
Lower Windstream		38.02264	-84.45958	Windstream
Trees blocking midspan	2084 ST CHRISTOPHEF	38.02292	-84.45962	KU
		38.02292	-84.45962	KU
		38.02292	-84.45962	KU
		38.02292	-84.45962	KU
		38.02292	-84.45962	Metronet
		38.02292	-84.45962	Charter
		38.02292	-84.45962	Windstream
	2076 ST CHRISTOPHEF	38.02308	-84.45960	KU
		38.02308	-84.45960	KU
		38.02308	-84.45960	KU
		38.02308	-84.45960	KU
		38.02308	-84.45960	Metronet
Resag Charter		38.02308	-84.45960	Charter
		38.02308	-84.45960	Windstream
	2064 ST CHRISTOPHEF	38.02351	-84.45959	KU
		38.02351	-84.45959	KU
		38.02351	-84.45959	KU
		38.02351	-84.45959	KU
		38.02351	-84.45959	KU
		38.02351	-84.45959	Metronet
Lower Charter		38.02351	-84.45959	Charter
Lower Windstream		38.02351	-84.45959	Windstream
	2056 ST CHRISTOPHEF	38.02392	-84.45973	KU
		38.02392	-84.45973	KU
		38.02392	-84.45973	KU
		38.02392	-84.45973	KU
		38.02392	-84.45973	KU
		38.02392	-84.45973	Metronet
Lower Charter		38.02392	-84.45973	Charter
Lower Windstream		38.02392	-84.45973	Windstream

	2040 ST CHRISTOPHEF	38.02430	-84.45990	KU
		38.02430	-84.45990	KU
		38.02430	-84.45990	KU
		38.02430	-84.45990	KU
		38.02430	-84.45990	KU
		38.02430	-84.45990	Metronet
Lower Charter		38.02430	-84.45990	Charter
Lower Windstream		38.02430	-84.45990	Windstream
	2032 ST CHRISTOPHEF	38.02457	-84.45994	KU
		38.02457	-84.45994	KU
		38.02457	-84.45994	KU
		38.02457	-84.45994	KU
		38.02457	-84.45994	Metronet
		38.02457	-84.45994	Charter
		38.02457	-84.45994	Windstream
	58.80 2024 ST CHRISTOPHEF	38.02485	-84.46009	KU
		38.02485	-84.46009	KU
		38.02485	-84.46009	KU
		38.02485	-84.46009	KU
		38.02485	-84.46009	KU
		38.02485	-84.46009	Metronet
		38.02485	-84.46009	Charter
		38.02485	-84.46009	Windstream
	2012 ST CHRISTOPHEF	38.02516	-84.46040	KU
		38.02516	-84.46040	KU
		38.02516	-84.46040	KU
		38.02516	-84.46040	KU
		38.02516	-84.46040	KU
		38.02516	-84.46040	KU
		38.02516	-84.46040	KU
		38.02516	-84.46040	KU
		38.02516	-84.46040	Metronet
Resag Charter		38.02516	-84.46040	Charter
		38.02516	-84.46040	Windstream
	244 ST MARGARET DR	38.02490	-84.46080	KU
		38.02490	-84.46080	KU
		38.02490	-84.46080	KU
		38.02490	-84.46080	KU
		38.02490	-84.46080	KU
		38.02490	-84.46080	Metronet
		38.02490	-84.46080	Charter
		38.02490	-84.46080	Charter

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped	A: DOT Tr	Y/N	Y/N
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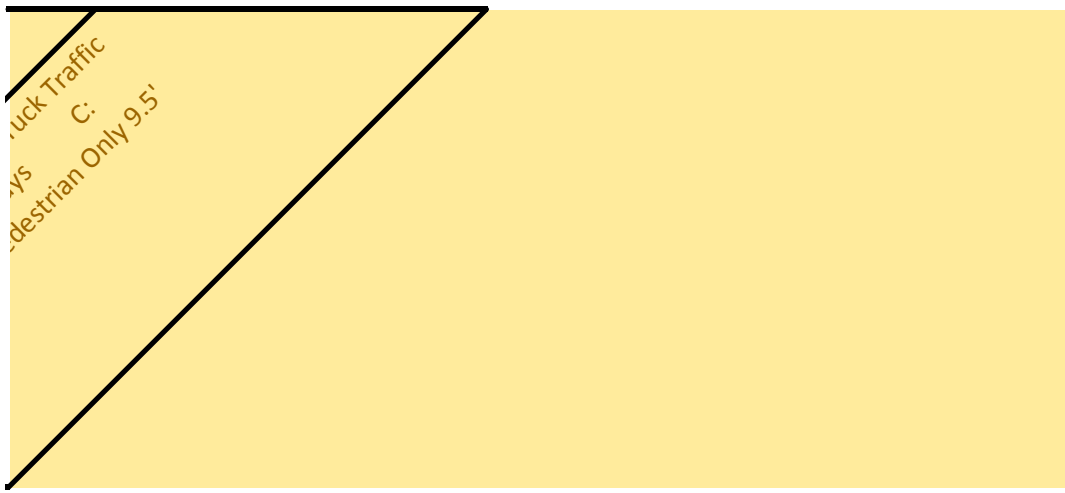
Primary	38'0"				N	N			B: Residential/Over Driveways				
Primary	37'6"				N	N							
Neutral	30'6"				N	N							
Communication		23'0"			N	N							
Communication	22'0"		86		N	N							
Communication	20'11"				N	N							
Communication	20'0"				N	N							
Communication	18'11"				N	N							
Communication	18'0"	16'2"			N	N							
Primary	28'0"				N	N			D: Pedestrian Only 9.5'				
Secondary	25'2"				N	N							
Neutral	24'6"				N	N							
Secondary	23'9"				N	N							
Secondary	23'1"				N	N							
Communication		19'2"			N	N							
Communication	18'2"		53		N	N							
Communication	17'0"				N	N							
Communication	16'4"	15'9"			N	N							
Primary	34'4"				N	N			D: Pedestrian Only 9.5'				
Transformer	28'8"				N	N							
Neutral	26'8"				N	N							
Secondary	25'9"				N	N							
Secondary	25'1"				N	N							
OH Guy	23'8"				N	N							
Communication		20'2"			N	N							
Communication	19'2"		63		N	N							
Communication	17'6"				N	N							
Communication	16'9"	15'5"			N	N							
Primary	35'1"				N	N			D: Pedestrian Only 9.5'				
Neutral	26'3"				N	N							
Neutral	25'10"				N	N							
Secondary	25'3"				N	N							
Secondary	24'7"				N	N							

OH Guy	24'1"			N	N	
Communication		20'6"		N	N	
Communication	19'6"		31	N	N	
Communication	18'8"			N	N	
Communication	17'11"	15'4"		N	N	
Primary	28'4"			N	N	D: Pedestrian Only 9.5'
Transformer	22'3"			N	N	
Neutral	21'10"			N	N	
Secondary	21'2"			N	N	
Secondary	20'6"			N	N	
Communication		17'2"		N	N	
Communication	16'6"	16'2"	66	N	N	
Communication	15'10"	15'2"		N	N	
Communication	15'2"	14'2"	11'4"	N	N	
Primary	33'6"			N	N	D: Pedestrian Only 9.5'
Neutral	30'8"			N	N	
Secondary	29'10"			N	N	
Secondary	29'1"			N	N	
Communication		20'0"		N	N	
Communication	19'0"		62	N	N	
Communication	18'4"			N	N	
Communication	17'2"	12'9"		N	N	
Primary	27'11"			Y	Y	D: Pedestrian Only 9.5'
Transformer	22'6"			Y	Y	
Neutral	21'2"			Y	Y	
Secondary	20'7"			Y	Y	
Secondary	19'10"			Y	Y	
Communication		16'6"		Y	Y	
Communication	16'9"	15'5"	21	Y	Y	
Communication	15'5"	14'5"		Y	Y	
Communication	14'9"	13'5"	13'0"	Y	Y	
Primary	34'9"			N	N	D: Pedestrian Only 9.5'
Neutral	27'11"			N	N	
Secondary	26'3"			N	N	
Secondary	24'7"			N	N	
Communication		18'11"		N	N	
Communication	17'11"		76	N	N	
Communication	16'6"			N	N	
Communication	15'9"	9'11"		N	N	
Primary	33'8"			N	N	D: Pedestrian Only 9.5'
Transformer	28'3"			N	N	
Neutral	25'10"			N	N	
Secondary	25'0"			N	N	
Secondary	24'4"			N	N	

Communication	19'8"			N	N	
Communication	18'8"		41	N	N	
Communication	18'1"			N	N	
Communication	17'1"	13'9"		N	N	
Primary	31'9"			N	N	B:Residential/Over Driveways
Neutral	24'11"			N	N	
Secondary	24'2"			N	N	
Secondary	23'5"			N	N	
Communication	18'6"			N	N	
Communication	17'6"		53	N	N	
Communication	16'2"			N	N	
Communication	15'4"	16'8"		N	N	
Primary	33'6"			Y	Y	B:Residential/Over Driveways
Secondary	26'6"			Y	Y	
Neutral	25'8"			Y	Y	
Secondary	24'5"			Y	Y	
Secondary Riser	23'0"			Y	Y	
Communication	19'8"			Y	Y	
Communication	22'6"	18'8"	23	Y	Y	
Communication	21'9"	17'8"	20'4"	Y	Y	
Primary	34'10"			Y	N	D: Pedestrian Only 9.5'
Neutral	27'11"			Y	N	
Neutral	27'3"			Y	N	
Secondary	26'7"			Y	N	
Secondary	25'11"			Y	N	
Communication	22'7"			Y	N	
Communication	23'0"	21'7"	53	Y	N	
Communication	21'10"	20'7"	16'6"	Y	N	
OH Guy	36'9"			N	Y	D: Pedestrian Only 9.5'
Primary	35'6"			N	Y	
Down Guy	33'6"			N	Y	
Neutral	31'0"			N	Y	
Neutral	30'3"			N	Y	
Secondary	29'8"			N	Y	
Secondary	29'2"			N	Y	
Communication	25'10"			N	Y	
Communication	25'6"			N	Y	
Communication	25'5"	24'10"	22	N	Y	
Communication	25'2"	24'7"		N	Y	
Communication	24'7"	23'8"		N	Y	
Communication	24'3"	23'4"		N	Y	
Communication	23'8"	22'8"		N	Y	
Communication	23'1"	22'4"	15'8"	N	Y	

Primary	35'1"			Y	N	D: Pedestrian Only 9.5'
Primary	33'1"			Y	N	
Transformer	28'6"			Y	N	
Neutral	27'4"			Y	N	
Neutral	26'9"			Y	N	
Secondary	25'11"			Y	N	
Secondary	25'2"			Y	N	
Communication		21'10"		Y	N	
Communication	22'0"	20'11"	39	Y	N	
Communication	20'11"	19'11"		Y	N	
Communication	20'8"	18'11"		Y	N	
Communication	19'11"	18'7"	18'9"	Y	N	
Primary	34'4"			N	N	D: Pedestrian Only 9.5'
Neutral	26'8"			N	N	
Secondary	25'11"			N	N	
Secondary	25'3"			N	N	
Communication		20'10"		N	N	
Communication	19'10"		UNK	N	N	
Communication	18'10"		UNK	N	N	
Primary	33'8"			N	N	D: Pedestrian Only 9.5'
Neutral	28'8"			N	N	
Secondary	27'9"			N	N	
Secondary	27'0"			N	N	
Communication		22'11"		N	N	
Communication	21'11"		31	N	N	
Communication	20'10"		17'7"	N	N	
Primary	33'3"			Y	Y	D: Pedestrian Only 9.5'
Transformer	26'7"			Y	Y	
Neutral	25'9"			Y	Y	
Secondary	25'1"			Y	Y	
Secondary	24'4"			Y	Y	
Communication		21'0"		Y	Y	
Communication	21'3"	20'0"	29	Y	Y	
Communication	20'1"	19'0"	17'11"	Y	Y	
Primary	33'3"			Y	N	D: Pedestrian Only 9.5'
Secondary	28'4"			Y	N	
Neutral	27'8"			Y	N	
Secondary	27'0"			Y	N	
Secondary	26'0"			Y	N	
Communication		22'8"		Y	N	
Communication	21'11"	21'8"	35	Y	N	
Communication	21'2"	20'8"	18'4"	Y	N	

Primary	33'6"			N	N	D: Pedestrian Only 9.5'
Transformer	27'1"			N	N	
Neutral	24'9"			N	N	
Secondary	24'3"			N	N	
Secondary	23'4"			N	N	
Communication		20'0"		N	N	
Communication	21'5"	19'0"	70	N	N	
Communication	20'6"	18'0"	15'6"	N	N	
Primary	33'4"			Y	N	D: Pedestrian Only 9.5'
Neutral	28'10"			Y	N	
Secondary	28'2"			Y	N	
Secondary	27'5"			Y	N	
Communication		20'4"		Y	N	
Communication	19'4"		72	Y	N	
Communication	18'7"		15'5"	Y	N	
Primary	31'10"			N	N	D: Pedestrian Only 9.5'
Transformer	26'1"			N	N	
Neutral	25'4"			N	N	
Secondary	24'7"			N	N	
Secondary	23'11"			N	N	
Communication		19'7"		N	N	
Communication	18'7"		36	N	N	
Communication	17'0"		14'7"	N	N	
Primary	33'6"			N	Y	D: Pedestrian Only 9.5'
Primary	32'11"			N	Y	
Primary	30'10"			N	Y	
OH Guy	27'8"			N	Y	
Secondary	27'6"			N	Y	
Neutral	26'10"			N	Y	
Secondary	26'1"			N	Y	
Secondary	25'4"			N	Y	
Communication		21'4"		N	Y	
Communication	20'4"		28	N	Y	
Communication	18'10"		15'8"	N	Y	
Primary	33'8"			N	N	D: Pedestrian Only 9.5'
Neutral	26'1"			N	N	
Secondary	25'4"			N	N	
Secondary	24'7"			N	N	
Streetlight	21'3"			N	N	
Communication		20'2"		N	N	
Communication	19'2"		59	N	N	
Communication	17'8"			N	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX135-04W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # LAUREN SANDEFUR 812-213-1328
EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: LSandefur 3-18-18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensor Work Description	Bill for Rent Y or N
1	26981-2070-02	139W	2051 RICHMOND RD, 140, Lexington, KY	45, 3, WXM	20'0"	N/A	30'6"	(1)Fiber/Strand			
2	NT	140W	133 ST ANN DR, Lexington, KY 40502	35, 4, WXM	17'0"	N/A	23'1"	(1)Fiber/Strand			
3	NT	141W	141 ST ANN DR, Lexington, KY 40502	40, 3, WXM	17'6"	17'9"	25'1"	(1)Fiber/Strand			
4	NT	142W	150 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	18'8"	17'10"	24'7"	(1)Fiber/Strand			
5	NT	143W	154 ST JAMES DR, Lexington, KY 40502	35, 4, WXM	15'10"	16'1"	20'6"	(1)Fiber/Strand			
6	NT	144W	166 ST JAMES DR, Lexington, KY 40502	40, 3, WXM	18'4"	18'8"	29'1"	(1)Fiber/Strand			
7	NT	145W	173 ST ANN DR, Lexington, KY 40502	35, 4, WXM	15'5"	15'8"	19'10"	(1)Fiber/Strand			
8	NT	146W	182 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	16'6"	16'11"	24'7"	(1)Fiber/Strand			
9	NT	147W	190 ST JAMES DR, Lexington, KY 40502	40, 3, WXM	18'1"	18'3"	24'4"	(1)Fiber/Strand			
10	NT	148W	194 ST JAMES DR, Lexington, KY 40502	40, 3, WXM	16'2"	16'7"	23'5"	(1)Fiber/Strand			
11	NT	149W	2136 ST MATHILDA DR, Lexington, KY 40502	40, 3, WXM	21'9"	N/A	23'0"	(1)Fiber/Strand			
12	NT	150W	200 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	21'10"	21'5"	25'11"	(1)Fiber/Strand			
13	NT	151W	209 ST ANN DR, Lexington, KY 40502	45, 2, WXM	23'8"	N/A	29'2"	(2)Fiber/Strand			
14	NT	152W	208 ST JAMES DR, Lexington, KY 40502	45, 3, WXM	20'8"	N/A	25'2"	(1)Fiber/Strand			
15	NT	153W	2084 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	18'10"	N/A	25'3"	(1)Fiber/Strand			
16	NT	154W	2076 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'10"	20'11"	27'0"	(1)Fiber/Strand			
17	NT	155W	2064 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'1"	20'5"	24'4"	(1)Fiber/Strand			
18	NT	156W	2056 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	21'2"	21'5"	26'0"	(1)Fiber/Strand			
19	NT	157W	2040 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'6"	20'8"	23'4"	(1)Fiber/Strand			

20	NT	158W	2032 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	18'7"	19'5"	27'5"		(1)Fiber/Strand			
21	NT	159W	2024 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	17'0"	17'2"	23'11"		(1)Fiber/Strand			
22	NT	160W	2012 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	18'10"	19'0"	25'4"		(1)Fiber/Strand			
23	NT	161W	244 ST MARGARET DR, Lexington, KY 403	40, 3, WXM	16'11"	17'0"	21'3"		(1)Fiber/Strand			
24	NT	162W	236 ST MARGARET DR, Lexington, KY 403	40, 3, WXM	18'6"	18'11"	26'2"		(1)Fiber/Strand			
25	NT	163W	2013 ST CHRISTOPHER DR, Lexington, K	40, 3, WXM	19'7"	N/A	26'3"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND

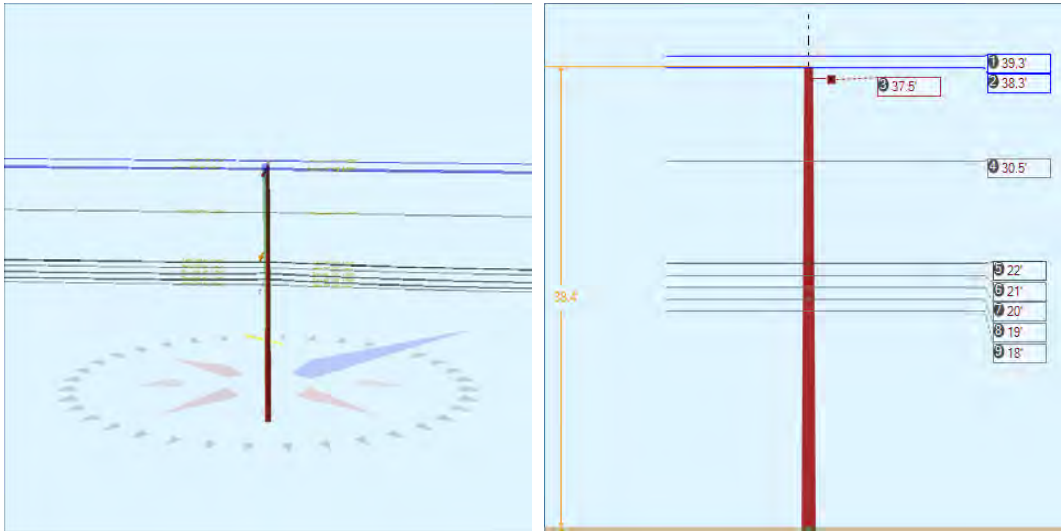
FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

MISCELLANEOUS	
ROADNAME	ROADS
WORK POINTS	
RAILROADS	

STRAND AND TRENCH	
Footage	AERIAL (TENSION SPAN)
Footage	AERIAL (SLACK SPAN)
Footage	NEW / PROPOSED TRENCH
Footage	EXISTING INHERITED TRENCH

Pole Num:	139W - 26981-2070-02	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.27	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019736 Deg	Longitude:	-84.465790 Deg	Elevation:	879.271298375604		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	36.8	0.0
Groundline	36.8	0.0
Vertical	11.5	22.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,681	140.1
Groundline	33,681	140.1
GL Allowable	92,918	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	441	36.4	17,537	52.1	18.9	1,280	518	5	1,284	18.9
Comms	547	45.1	11,545	34.3	12.4	843	915	8	851	12.5
Pole	215	17.7	4,156	12.3	4.5	303	2,238	20	324	4.8
Crossarms	1	0.1	47	0.1	0.1	3	95	1	4	0.1
Insulators	8	0.6	397	1.2	0.4	29	99	1	30	0.4
Pole Load	1,212	100.0	33,681	100.0	36.3	2,458	3,864	35	2,493	36.7
Pole Reserve Capacity			59,237		63.8	4,342			4,307	63.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	449	37.0	17,905	53.2	19.3	1,307	569	5	1,312	19.3
Unknown, COMMUNICATION	547	45.1	11,573	34.4	12.5	845	962	9	853	12.5
Pole	215	17.7	4,156	12.3	4.5	303	2,238	20	324	4.8
<Undefined>	1	0.1	47	0.1	0.1	3	95	1	4	0.1
Totals:	1,212	100.0	33,681	100.0	36.3	2,458	3,864	35	2,493	36.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.27	0.00	0.7200	0.33	0.462	122.9	50.0	122.9	5,640	-563	0	1,719	1,155
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.27	0.00	0.7200	0.16	0.462	83.8	229.5	83.8	5,640	2,498	0	1,171	3,669
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.29	28.53	0.7200	0.33	0.462	122.9	50.0	122.9	5,640	-549	208	1,676	1,335
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.29	28.53	0.7200	0.16	0.462	83.8	229.5	83.8	5,640	2,436	142	1,142	3,720
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.29	52.29	0.7200	0.33	0.462	122.9	50.0	122.9	5,640	-549	387	1,676	1,513
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.29	52.29	0.7200	0.16	0.462	83.8	229.5	83.8	5,640	2,436	264	1,142	3,841
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.50	6.63	0.3980	0.28	0.145	122.9	50.0	122.9	2,128	-165	22	982	839

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.50	6.63	0.3980	0.13	0.145	83.8	229.5	83.8	2,128	731	15	669	1,416
											Totals:	6,273	1,038	10,176	17,487

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.00	7.13	1.3300	1.68	0.337	122.9	50.0	122.9	925	-52	57	1,443	1,449
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.00	7.13	1.3300	1.08	0.337	83.8	229.5	83.8	925	229	39	984	1,252
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.96	7.19	0.6570	1.67	0.190	122.9	50.0	122.9	750	-40	33	869	863
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.96	7.19	0.6570	1.07	0.190	83.8	229.5	83.8	750	177	23	593	792
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.01	7.25	1.5000	1.96	0.900	122.9	50.0	122.9	2,000	-102	102	1,434	1,435
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.01	7.25	1.5000	1.25	0.900	83.8	229.5	83.8	2,000	451	69	978	1,498
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.98	7.31	1.5000	1.96	0.900	122.9	50.0	122.9	2,000	-97	103	1,361	1,367
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.98	7.31	1.5000	1.25	0.900	83.8	229.5	83.8	2,000	428	70	927	1,425
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.37	0.6570	1.67	0.190	122.9	50.0	122.9	750	-34	34	748	747
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.03	7.37	0.6570	1.07	0.190	83.8	229.5	83.8	750	152	23	510	685
		COMMUNICATION													
											Totals:	1,113	553	9,846	11,512

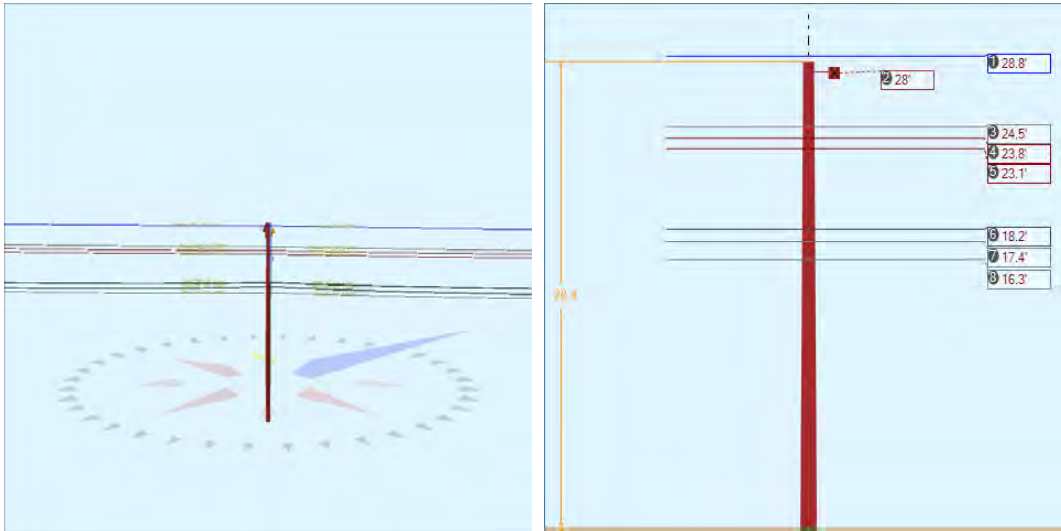
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	37.48	5.46	229.5	229.5	50.00	4.50	3.50	96.00	0	46	47		
											Totals:	0	46	47

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.39	0.00	0.0	0.0	13.00	9.00	10.50	0	178	178

Pin	Pin Insulator - 5 kV	KU, UTILITY	37.67	-28.00	150.5	0.0	6.00	3.50	7.50	27	48	75
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.67	-52.00	145.5	0.0	6.00	3.50	7.50	49	48	98
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.50	0.00	139.7	49.7	2.00	3.00	3.19	2	14	16
Bolt	Three Bolt	Unknown, COMMUNICATION	22.00	0.00	139.7	49.7	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	20.96	0.00	140.0	140.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.01	0.00	139.7	49.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.98	0.00	139.7	49.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.03	0.00	139.7	49.7	5.00	3.00	0.00	6	0	6
Totals:										107	289	396

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.26	33.33	10.99	15.23	7.32	11.87	1.60e+6	60.00	57.00	38.39	33,632	336.03	8.70

Pole Num:	140W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.56	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019863 Deg	Longitude:	-84.463688 Deg	Elevation:	900.208213072926		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.9	0.0
Groundline	29.9	0.0
Vertical	7.6	16.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,206	318.4
Groundline	16,206	318.4
GL Allowable	55,001	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	268	32.6	6,535	40.3	11.9	810	268	3	813	12.0
Comms	412	50.2	7,540	46.5	13.7	934	659	8	943	13.9
Pole	138	16.8	2,050	12.7	3.7	254	1,241	16	270	4.0
Crossarms	1	0.1	34	0.2	0.1	4	95	1	5	0.1
Insulators	3	0.3	48	0.3	0.1	6	51	1	7	0.1
Pole Load	822	100.0	16,206	100.0	29.5	2,008	2,313	30	2,038	30.0
Pole Reserve Capacity			38,795		70.5	4,792			4,762	70.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	270	32.9	6,567	40.5	11.9	814	290	4	817	12.0
Unknown, COMMUNICATION	412	50.2	7,555	46.6	13.7	936	687	9	945	13.9
Pole	138	16.8	2,050	12.7	3.7	254	1,241	16	270	4.0
<Undefined>	1	0.1	34	0.2	0.1	4	95	1	5	0.1
Totals:	822	100.0	16,206	100.0	29.5	2,008	2,313	30	2,038	30.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	28.78	45.29	0.2316	0.34	0.129	121.5	48.3	121.5	1,064	48	-121	746	673
Primary	#4 COPPER 7 STRAND KU, UTILITY	28.78	45.29	0.2316	0.39	0.129	131.2	229.0	131.2	1,064	326	-130	806	1,002
Neutral	#4 COPPER 7 STRAND KU, UTILITY	24.45	6.07	0.2316	0.34	0.129	121.5	48.3	121.5	1,064	41	16	634	691
Neutral	#4 COPPER 7 STRAND KU, UTILITY	24.45	6.07	0.2316	0.39	0.129	131.2	229.0	131.2	1,064	277	18	685	979
Secondary	#4 COPPER 7 STRAND KU, UTILITY	23.75	6.11	0.2316	0.34	0.129	121.5	48.3	121.5	1,064	39	16	616	672
Secondary	#4 COPPER 7 STRAND KU, UTILITY	23.75	6.11	0.2316	0.39	0.129	131.2	229.0	131.2	1,064	269	18	665	952
Secondary	#4 COPPER 7 STRAND KU, UTILITY	23.12	6.15	0.2316	0.34	0.129	121.5	48.3	121.5	1,064	38	16	599	654

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	23.12	6.15	0.2316	0.39	0.129	131.2	229.0	131.2	1,064	262	18	647	927
											Totals:	1,301	-149	5,397	6,550

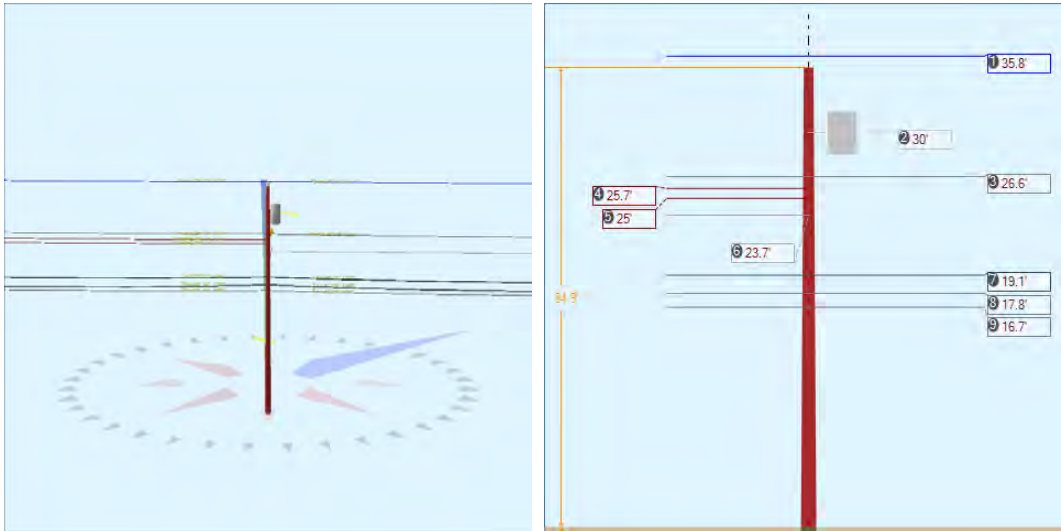
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.20	6.43	1.3300	1.66	0.337	121.5	48.3	121.5	925	26	51	1,180	1,258
CATV	CATV 1.0	Unknown, COMMUNICATION	18.20	6.43	1.3300	1.82	0.337	131.2	229.0	131.2	925	179	55	1,274	1,509
Telco	TELE 1.5	Unknown, COMMUNICATION	17.45	6.48	1.5000	1.93	0.900	121.5	48.3	121.5	2,000	55	90	1,236	1,381
Telco	TELE 1.5	Unknown, COMMUNICATION	17.45	6.48	1.5000	2.13	0.900	131.2	229.0	131.2	2,000	372	97	1,335	1,804
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.34	6.54	0.6570	1.65	0.190	121.5	48.3	121.5	750	19	30	670	719
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.34	6.54	0.6570	1.81	0.190	131.2	229.0	131.2	750	131	32	723	886
											Totals:	782	355	6,420	7,557

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	27.96	5.12	228.6	228.6	50.00	4.50	3.50	96.00	0	34	34	
										Totals:	0	34	34

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV	KU, UTILITY	28.15	-45.00	145.1	0.0	6.00	3.50	7.50	-43	36	-7	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.45	0.00	318.6	228.6	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.75	0.00	318.6	228.6	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.12	0.00	318.6	228.6	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.20	0.00	318.6	228.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.45	0.00	318.6	228.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.34	0.00	318.6	228.6	5.00	3.00	0.00	5	0	5	
										Totals:	-22	69	48

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.88	32.93	9.32	10.27	6.69	9.97	1.60e+6	60.00	57.00	28.44	30,316	304.38	13.16

Pole Num:	141W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.08	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.35	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020080 Deg	Longitude:	-84.463400 Deg	Elevation:	927.055065438123		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.1	317.7
Groundline	25.1	317.7
Vertical	1.2	227.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,191	317.7
Groundline	21,191	317.7
GL Allowable	86,178	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	118.4	47.6		13.7	317.7	14.6	230.0
? EHS 3/8 (Span/Head)			23.7	19.7	317.7	23.2	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 305.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	806	91.3	21,354	100.8	24.8	1,677	191	2	1,679	24.7
Comms	397	45.0	7,556	35.7	8.8	594	625	6	600	8.8
GuyBraces	-555	-62.9	-13,212	-62.4	-15.3	-1,038	28	0	-1,038	-15.3
PowerEquipments	41	4.6	1,929	9.1	2.2	152	694	7	158	2.3
Pole	188	21.3	3,349	15.8	3.9	263	1,970	19	282	4.1
Insulators	6	0.7	214	1.0	0.3	17	65	1	17	0.3
Pole Load	883	100.0	21,191	100.0	24.6	1,665	3,572	34	1,699	25.0
Pole Reserve Capacity			64,987		75.4	5,135			5,101	75.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 305.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	298	33.7	10,269	48.5	11.9	807	948	9	816	12.0
Unknown, COMMUNICATION	397	45.0	7,573	35.7	8.8	595	654	6	601	8.8
Pole	188	21.3	3,349	15.8	3.9	263	1,970	19	282	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	883	100.0	21,191	100.0	24.6	1,665	3,572	34	1,699	25.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.79	0.00	0.2316	0.32	0.129	118.4	47.6	118.4	1,064	-10,551	0	884	-9,667
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.79	0.00	0.2316	0.34	0.129	121.5	228.3	121.5	1,064	11,141	0	904	12,045
Neutral	#4 COPPER 7 STRAND KU, UTILITY	26.64	6.66	0.2316	0.32	0.129	118.4	47.6	118.4	1,064	-7,851	17	658	-7,176
Neutral	#4 COPPER 7 STRAND KU, UTILITY	26.64	6.66	0.2316	0.34	0.129	121.5	228.3	121.5	1,064	8,290	17	673	8,980
Secondary	#4 COPPER 7 STRAND KU, UTILITY	25.75	6.72	0.2316	0.34	0.129	121.5	228.3	121.5	1,064	8,012	4	650	8,666

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	24.98	6.76	0.2316	0.34	0.129	121.5	228.3	121.5	1,064	7,775	4	631	8,410
											Totals:	16,816	43	4,399	21,258

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.14	7.12	1.3300	1.61	0.337	118.4	47.6	118.4	925	-4,904	54	1,182	-3,668
CATV	CATV 1.0	Unknown, COMMUNICATION	19.14	7.12	1.3300	1.66	0.337	121.5	228.3	121.5	925	5,178	55	1,209	6,442
Telco	TELE 1.5	Unknown, COMMUNICATION	17.77	7.20	1.5000	1.87	0.900	118.4	47.6	118.4	2,000	-9,842	95	1,199	-8,548
Telco	TELE 1.5	Unknown, COMMUNICATION	17.77	7.20	1.5000	1.93	0.900	121.5	228.3	121.5	2,000	10,393	98	1,227	11,717
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.73	7.27	0.6570	1.60	0.190	118.4	47.6	118.4	750	-3,476	31	653	-2,791
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.73	7.27	0.6570	1.65	0.190	121.5	228.3	121.5	750	3,670	32	668	4,370
											Totals:	1,019	366	6,137	7,522

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.95	20.96	360.0	360.0	365.00	39.00	--	22.00	--	700	1,220	1,920
											Totals:	700	1,220	1,920

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.92	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.64	0.00	318.0	228.0	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.75	0.00	228.3	228.3	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.98	0.00	228.3	228.3	2.00	3.00	3.19	0	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	19.14	0.00	318.0	228.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.77	0.00	318.0	228.0	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	16.73	0.00	318.0	228.0	5.00	3.00	0.00	6	0	6
Totals:										20	194	213

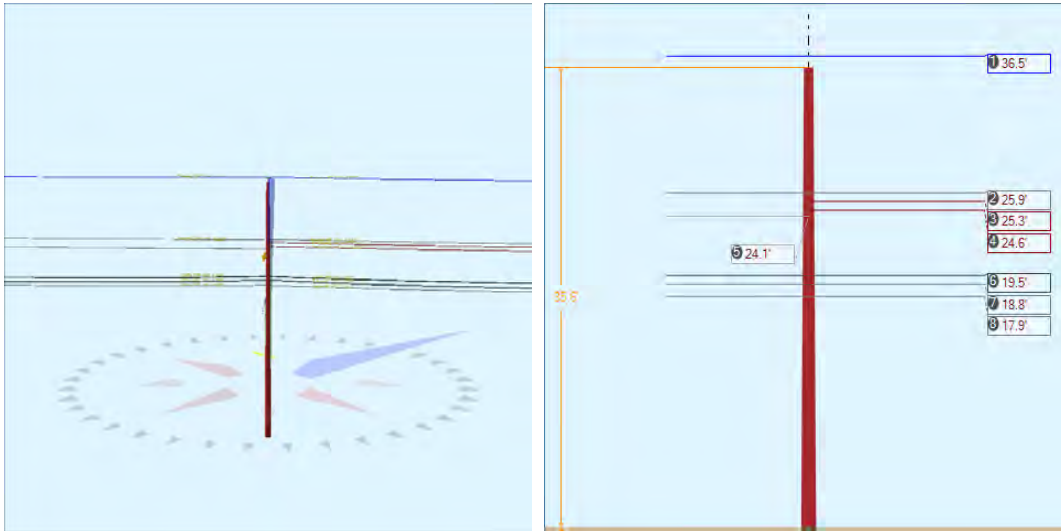
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.70	23.70	118.39	0.375	75.00	47.6	0.0	0.273	116.53	2.01

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	3,215	2,923	2,732	0	2,732	-584	-13,152
Totals:										0	2,732	-584	-13,152

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	118.39	47.6	20,000	1.00	20,000	2,923	2,732	14.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.44	33.23	10.74	8.33	7.32	11.58	1.60e+6	60.00	57.00	34.92	291,839	2976.66	83.33

Pole Num:	142W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.25	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020267 Deg	Longitude:	-84.463069 Deg	Elevation:	918.199938586122		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.8	137.9
Groundline	28.8	137.9
Vertical	0.7	47.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,245	137.9
Groundline	24,245	137.9
GL Allowable	85,460	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	118.4	227.6		13.2	137.9	13.9	40.0
? EHS 3/8 (Span/Head)			24.1	19.0	137.9	22.1	40.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 125.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	893	84.5	23,549	97.1	27.6	1,865	191	2	1,867	27.5
Comms	486	46.0	9,566	39.5	11.2	758	624	6	764	11.2
GuyBraces	-519	-49.2	-12,575	-51.9	-14.7	-996	28	0	-996	-14.6
Pole	192	18.1	3,488	14.4	4.1	276	2,003	19	295	4.3
Insulators	6	0.6	217	0.9	0.3	17	65	1	18	0.3
Pole Load	1,056	100.0	24,245	100.0	28.4	1,920	2,910	28	1,948	28.6
Pole Reserve Capacity			61,215		71.6	4,880			4,852	71.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 125.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	379	35.9	11,174	46.1	13.1	885	254	2	887	13.0
Unknown, COMMUNICATION	486	46.0	9,583	39.5	11.2	759	653	6	765	11.3
Pole	192	18.1	3,488	14.4	4.1	276	2,003	19	295	4.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,056	100.0	24,245	100.0	28.4	1,920	2,910	28	1,948	28.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	36.51	0.00	0.2316	0.33	0.129	121.0	49.4	121.0	1,064	12,015	0	916	12,931
Primary	#4 COPPER 7 STRAND KU, UTILITY	36.51	0.00	0.2316	0.32	0.129	118.4	227.6	118.4	1,064	-10,468	0	903	-9,566
Neutral	#4 COPPER 7 STRAND KU, UTILITY	25.91	6.74	0.2316	0.33	0.129	121.0	49.4	121.0	1,064	8,526	18	650	9,193
Neutral	#4 COPPER 7 STRAND KU, UTILITY	25.91	6.74	0.2316	0.32	0.129	118.4	227.6	118.4	1,064	-7,428	17	640	-6,771
Secondary	#4 COPPER 7 STRAND KU, UTILITY	25.25	6.78	0.2316	0.33	0.129	121.0	49.4	121.0	1,064	8,308	4	633	8,945
Secondary	#4 COPPER 7 STRAND KU, UTILITY	24.57	6.82	0.2316	0.33	0.129	121.0	49.4	121.0	1,064	8,083	4	616	8,703
										Totals:	19,035	43	4,358	23,437

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	19.52	7.11	1.3300	1.65	0.337	121.0	49.4	121.0	925	5,584	55	1,225	6,864
CATV	CATV 1.0 Unknown, COMMUNICATION	19.52	7.11	1.3300	1.61	0.337	118.4	227.6	118.4	925	-4,865	54	1,207	-3,604
Telco	TELE 1.5 Unknown, COMMUNICATION	18.84	7.15	1.5000	1.93	0.900	121.0	49.4	121.0	2,000	11,649	97	1,291	13,036
Telco	TELE 1.5 Unknown, COMMUNICATION	18.84	7.15	1.5000	1.87	0.900	118.4	227.6	118.4	2,000	-10,149	94	1,273	-8,782
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) Unknown, COMMUNICATION	17.90	7.21	0.6570	1.64	0.190	121.0	49.4	121.0	750	4,151	32	710	4,893
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) Unknown, COMMUNICATION	17.90	7.21	0.6570	1.60	0.190	118.4	227.6	118.4	750	-3,617	31	700	-2,886
Totals:											2,753	363	6,405	9,521

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	35.64	0.00	0.0	0.0	13.00	9.00	10.50	0	162	162	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.91	0.00	138.5	48.5	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.25	0.00	49.4	49.4	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.57	0.00	49.4	49.4	2.00	3.00	3.19	1	11	12	
Bolt	Three Bolt Unknown, COMMUNICATION	19.52	0.00	138.5	48.5	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.84	0.00	138.5	48.5	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	17.90	0.00	138.5	48.5	5.00	3.00	0.00	6	0	6	
Totals:										20	196	216

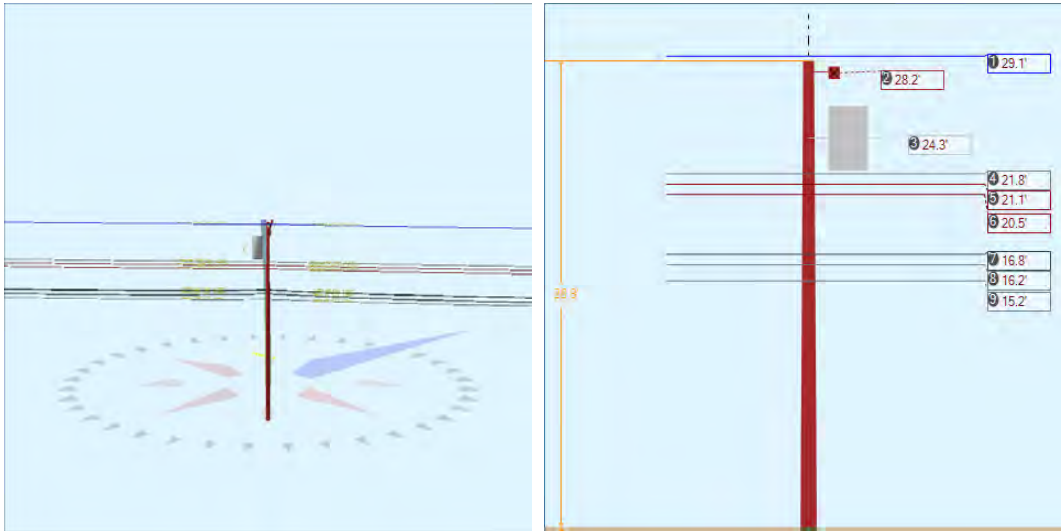
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head KU, UTILITY	24.10	24.10	118.39	0.375	75.00	227.6	0.0	0.273	116.53	1.94

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	3,062	2,784	2,638	0	2,638	-548	-12,515
Totals:										0	2,638	-548	-12,515

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	118.39	227.6	20,000	1.00	20,000	2,784	2,638	13.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	17.76	32.73	10.85	7.21	7.32	11.54	1.60e+6	60.00	57.00	35.64	402,049	4157.43	142.86

Pole Num:	143W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.24	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.41	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020499 Deg	Longitude:	-84.462745 Deg	Elevation:	897.176246686791		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.2	0.0
Groundline	28.2	0.0
Vertical	15.8	19.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,296	310.5
Groundline	15,296	310.5
GL Allowable	55,621	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 310.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	228	28.6	5,120	33.5	9.2	628	259	3	631	9.3
Comms	370	46.5	6,323	41.3	11.4	775	638	8	783	11.5
PowerEquipments	55	6.9	1,686	11.0	3.0	207	1,216	15	222	3.3
Pole	139	17.5	2,088	13.7	3.8	256	1,261	16	272	4.0
Crossarms	2	0.2	35	0.2	0.1	4	95	1	5	0.1
Insulators	3	0.3	44	0.3	0.1	5	51	1	6	0.1
Pole Load	796	100.0	15,296	100.0	27.5	1,875	3,520	45	1,920	28.2
Pole Reserve Capacity			40,325		72.5	4,925			4,880	71.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 310.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	285	35.8	6,834	44.7	12.3	838	1,498	19	857	12.6
Unknown, COMMUNICATION	370	46.5	6,339	41.4	11.4	777	666	8	785	11.6
Pole	139	17.5	2,088	13.7	3.8	256	1,261	16	272	4.0
<Undefined>	2	0.2	35	0.2	0.1	4	95	1	5	0.1
Totals:	796	100.0	15,296	100.0	27.5	1,875	3,520	45	1,920	28.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	29.05	45.29	0.2316	0.35	0.129	123.6	49.1	123.6	1,064	-4,644	-123	757	-4,011
Primary	#4 COPPER 7 STRAND KU, UTILITY	29.05	45.29	0.2316	0.33	0.129	121.0	229.4	121.0	1,064	4,804	-121	740	5,424
Neutral	#4 COPPER 7 STRAND KU, UTILITY	21.80	6.24	0.2316	0.35	0.129	123.6	49.1	123.6	1,064	-3,484	17	568	-2,899
Neutral	#4 COPPER 7 STRAND KU, UTILITY	21.80	6.24	0.2316	0.33	0.129	121.0	229.4	121.0	1,064	3,604	16	555	4,175
Secondary	#4 COPPER 7 STRAND KU, UTILITY	21.15	6.28	0.2316	0.35	0.129	123.6	49.1	123.6	1,064	-3,380	17	551	-2,812
Secondary	#4 COPPER 7 STRAND KU, UTILITY	21.15	6.28	0.2316	0.33	0.129	121.0	229.4	121.0	1,064	3,496	17	539	4,052

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	20.52	6.32	0.2316	0.35	0.129	123.6	49.1	123.6	1,064	-3,279	17	534	-2,728
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	20.52	6.32	0.2316	0.33	0.129	121.0	229.4	121.0	1,064	3,392	17	523	3,932
Totals:											509	-144	4,767	5,133	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	16.84	6.53	1.3300	1.69	0.337	123.6	49.1	123.6	925	-2,339	52	1,097	-1,190
CATV	CATV 1.0	Unknown, COMMUNICATION	16.84	6.53	1.3300	1.65	0.337	121.0	229.4	121.0	925	2,420	51	1,073	3,544
Telco	TELE 1.5	Unknown, COMMUNICATION	16.19	6.57	1.5000	1.98	0.900	123.6	49.1	123.6	2,000	-4,863	92	1,153	-3,618
Telco	TELE 1.5	Unknown, COMMUNICATION	16.19	6.57	1.5000	1.93	0.900	121.0	229.4	121.0	2,000	5,030	90	1,127	6,247
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.19	6.62	0.6570	1.68	0.190	123.6	49.1	123.6	750	-1,711	30	626	-1,055
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	15.19	6.62	0.6570	1.64	0.190	121.0	229.4	121.0	750	1,770	30	612	2,412
Totals:											307	345	5,688	6,340	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	24.34	21.60	230.0	230.0	640.00	47.00	--	24.00	--	363	1,327	1,690
Totals:											363	1,327	1,690	

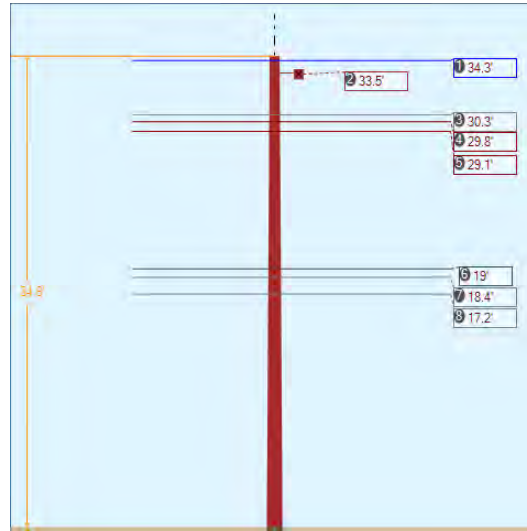
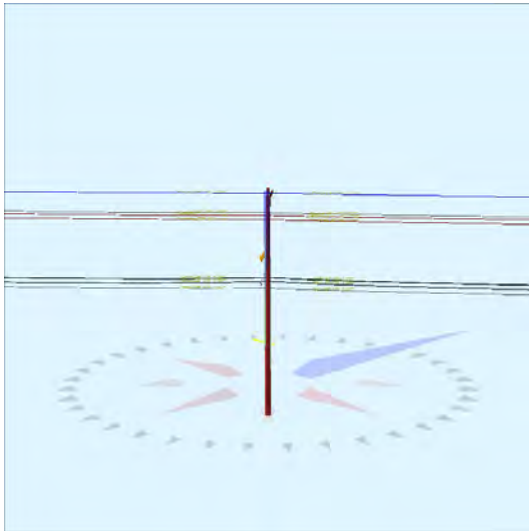
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		28.24	5.12	49.1	49.1	50.00	4.50	3.50	96.00	-6	41	35
Totals:											-6	41	35

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	28.43	45.00	132.6	0.0	6.00	3.50	7.50	-43	36	-7
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.80	0.00	319.2	229.2	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.15	0.00	319.2	229.2	2.00	3.00	3.19	2	10	12

Spool	Spool Insulator - 25 kV	KU, UTILITY	20.52	0.00	319.2	229.2	2.00	3.00	3.19	2	9	11
Bolt	Three Bolt	Unknown, COMMUNICATION	16.84	0.00	319.2	229.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.19	0.00	319.2	229.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	15.19	0.00	319.2	229.2	5.00	3.00	0.00	5	0	5
Totals:										-22	66	44

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.40	33.35	9.25	13.29	6.69	10.00	1.60e+6	60.00	57.00	28.76	22,295	222.78	6.33

Pole Num:	144W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.24	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020727 Deg	Longitude:	-84.462460 Deg	Elevation:	910.763567180171		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	20.4	0.0
Groundline	20.4	0.0
Vertical	6.6	18.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,089	139.0
Groundline	17,089	139.0
GL Allowable	85,412	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 139.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	229	28.8	7,189	42.1	8.4	574	256	2	577	8.5
Comms	372	46.7	6,410	37.5	7.5	512	632	6	518	7.6
Pole	191	24.0	3,345	19.6	3.9	267	1,946	19	286	4.2
Crossarms	1	0.2	41	0.2	0.1	3	95	1	4	0.1
Insulators	3	0.3	104	0.6	0.1	8	51	0	9	0.1
Pole Load	795	100.0	17,089	100.0	20.0	1,365	2,981	29	1,393	20.5
Pole Reserve Capacity			68,323		80.0	5,435			5,407	79.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 139.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	232	29.1	7,310	42.8	8.6	584	279	3	586	8.6
Unknown, COMMUNICATION	372	46.7	6,393	37.4	7.5	511	660	6	517	7.6
Pole	191	24.0	3,345	19.6	3.9	267	1,946	19	286	4.2
<Undefined>	1	0.2	41	0.2	0.1	3	95	1	4	0.1
Totals:	795	100.0	17,089	100.0	20.0	1,365	2,981	29	1,393	20.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.31	45.33	0.2316	0.32	0.129	118.7	49.4	118.7	1,064	256	118	869	1,243
Primary	#4 COPPER 7 STRAND KU, UTILITY	34.31	45.33	0.2316	0.35	0.129	123.6	229.1	123.6	1,064	-65	123	905	963
Neutral	#4 COPPER 7 STRAND KU, UTILITY	30.30	6.42	0.2316	0.32	0.129	118.7	49.4	118.7	1,064	226	-17	767	976
Neutral	#4 COPPER 7 STRAND KU, UTILITY	30.30	6.42	0.2316	0.35	0.129	123.6	229.1	123.6	1,064	-57	-18	799	725
Secondary	#4 COPPER 7 STRAND KU, UTILITY	29.81	6.45	0.2316	0.32	0.129	118.7	49.4	118.7	1,064	222	-17	755	960
Secondary	#4 COPPER 7 STRAND KU, UTILITY	29.81	6.45	0.2316	0.35	0.129	123.6	229.1	123.6	1,064	-56	-18	786	713
Secondary	#4 COPPER 7 STRAND KU, UTILITY	29.10	6.50	0.2316	0.32	0.129	118.7	49.4	118.7	1,064	217	-17	737	937

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	29.10	6.50	0.2316	0.35	0.129	123.6	229.1	123.6	1,064	-55	-18	767	695
											Totals:	688	137	6,386	7,211

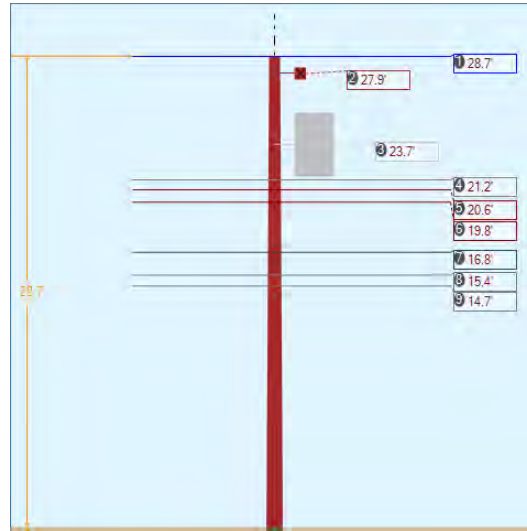
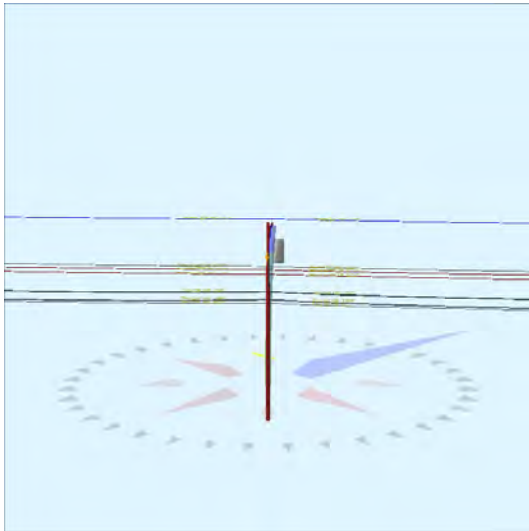
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.00	7.11	1.3300	1.61	0.337	118.7	49.4	118.7	925	123	-55	1,203	1,271
CATV	CATV 1.0	Unknown, COMMUNICATION	19.00	7.11	1.3300	1.69	0.337	123.6	229.1	123.6	925	-31	-58	1,254	1,165
Telco	TELE 1.5	Unknown, COMMUNICATION	18.36	7.15	1.5000	1.88	0.900	118.7	49.4	118.7	2,000	257	-97	1,271	1,431
Telco	TELE 1.5	Unknown, COMMUNICATION	18.36	7.15	1.5000	1.98	0.900	123.6	229.1	123.6	2,000	-65	-101	1,324	1,158
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.15	7.22	0.6570	1.60	0.190	118.7	49.4	118.7	750	90	-32	687	745
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.15	7.22	0.6570	1.68	0.190	123.6	229.1	123.6	750	-23	-33	716	659
											Totals:	352	-376	6,454	6,430

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.50	5.48	49.3	49.3	50.00	4.50	3.50	96.00	0	41	41	
										Totals:	0	41	41

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.69	45.00	132.3	0.0	6.00	3.50	7.50	43	43	86	
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.30	0.00	319.3	49.3	2.00	3.00	3.19	-2	14	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.81	0.00	319.3	49.3	2.00	3.00	3.19	-2	14	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.10	0.00	319.3	49.3	2.00	3.00	3.19	-2	14	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.00	0.00	319.3	49.3	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.36	0.00	319.3	49.3	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.15	0.00	319.3	49.3	5.00	3.00	0.00	-6	0	-6	
										Totals:	20	85	104

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.52	32.93	10.79	12.39	7.32	11.54	1.60e+6	60.00	57.00	34.63	45,251	451.61	15.15

Pole Num:	145W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.26	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.40	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020944 Deg	Longitude:	-84.462153 Deg	Elevation:	919.368364009941		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.6	0.0
Groundline	25.6	0.0
Vertical	14.9	19.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,846	128.8
Groundline	13,846	128.8
GL Allowable	55,571	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 128.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	204	27.5	4,463	32.2	8.0	548	249	3	551	8.1
Comms	342	46.0	5,686	41.1	10.2	698	613	8	706	10.4
PowerEquipments	54	7.3	1,521	11.0	2.7	187	1,216	15	202	3.0
Pole	139	18.7	2,079	15.0	3.7	255	1,259	16	271	4.0
Crossarms	2	0.2	52	0.4	0.1	6	95	1	8	0.1
Insulators	3	0.4	44	0.3	0.1	5	51	1	6	0.1
Pole Load	743	100.0	13,846	100.0	24.9	1,700	3,483	44	1,744	25.6
Pole Reserve Capacity			41,725		75.1	5,100			5,056	74.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 128.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	261	35.1	6,013	43.4	10.8	738	1,488	19	757	11.1
Unknown, COMMUNICATION	342	46.0	5,701	41.2	10.3	700	641	8	708	10.4
Pole	139	18.7	2,079	15.0	3.7	255	1,259	16	271	4.0
<Undefined>	2	0.2	52	0.4	0.1	6	95	1	8	0.1
Totals:	743	100.0	13,846	100.0	24.9	1,700	3,483	44	1,744	25.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	28.71	45.29	0.2316	0.31	0.129	116.3	49.5	116.3	1,064	5,651	-111	699	6,239
Primary	#4 COPPER 7 STRAND KU, UTILITY	28.71	45.29	0.2316	0.32	0.129	118.7	229.4	118.7	1,064	-5,599	-113	713	-4,999
Neutral	#4 COPPER 7 STRAND KU, UTILITY	21.18	6.28	0.2316	0.31	0.129	116.3	49.5	116.3	1,064	4,168	16	515	4,699
Neutral	#4 COPPER 7 STRAND KU, UTILITY	21.18	6.28	0.2316	0.32	0.129	118.7	229.4	118.7	1,064	-4,129	16	526	-3,587
Secondary	#4 COPPER 7 STRAND KU, UTILITY	20.58	6.31	0.2316	0.31	0.129	116.3	49.5	116.3	1,064	4,049	16	501	4,566
Secondary	#4 COPPER 7 STRAND KU, UTILITY	20.58	6.31	0.2316	0.32	0.129	118.7	229.4	118.7	1,064	-4,012	16	511	-3,485

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	19.82	6.36	0.2316	0.31	0.129	116.3	49.5	116.3	1,064	3,900	16	482	4,398
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	19.82	6.36	0.2316	0.32	0.129	118.7	229.4	118.7	1,064	-3,864	16	492	-3,355
Totals:											165	-128	4,440	4,477	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	16.76	6.53	1.3300	1.58	0.337	116.3	49.5	116.3	925	2,868	49	1,021	3,937
CATV	CATV 1.0	Unknown, COMMUNICATION	16.76	6.53	1.3300	1.61	0.337	118.7	229.4	118.7	925	-2,841	50	1,041	-1,750
Telco	TELE 1.5	Unknown, COMMUNICATION	15.38	6.61	1.5000	1.83	0.900	116.3	49.5	116.3	2,000	5,688	86	1,023	6,798
Telco	TELE 1.5	Unknown, COMMUNICATION	15.38	6.61	1.5000	1.88	0.900	118.7	229.4	118.7	2,000	-5,635	88	1,044	-4,503
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	14.73	6.65	0.6570	1.56	0.190	116.3	49.5	116.3	750	2,043	28	567	2,638
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	14.73	6.65	0.6570	1.60	0.190	118.7	229.4	118.7	750	-2,024	29	578	-1,416
Totals:											98	331	5,274	5,703	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	23.70	21.63	45.0	45.0	640.00	47.00	--	24.00	--	235	1,291	1,526
Totals:											235	1,291	1,526	

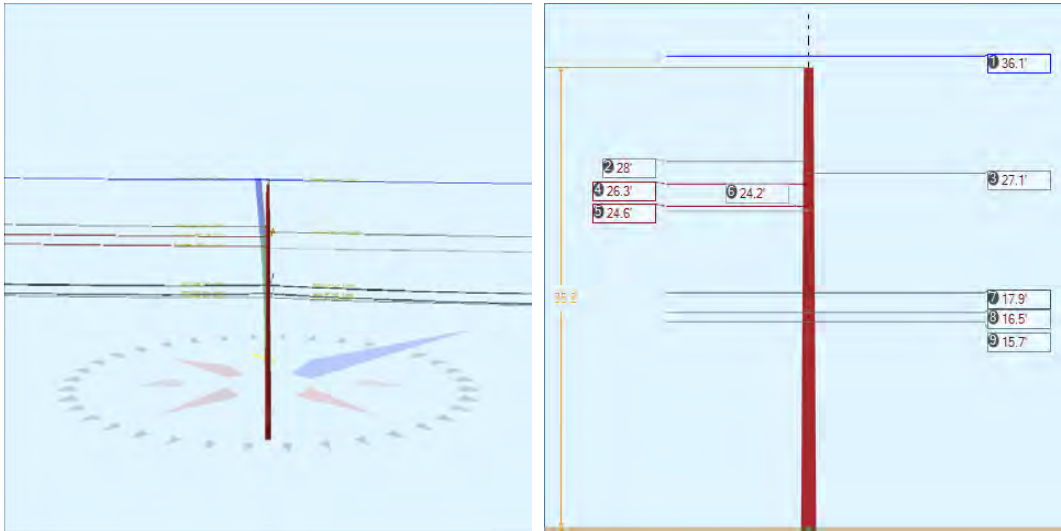
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		27.90	5.14	49.5	49.5	50.00	4.50	3.50	96.00	8	45	53
Totals:											8	45	53

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	28.08	-45.00	326.0	0.0	6.00	3.50	7.50	-41	36	-5
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.18	0.00	139.5	49.5	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	20.58	0.00	139.5	49.5	2.00	3.00	3.19	2	10	11

Spool	Spool Insulator - 25 kV	KU, UTILITY	19.82	0.00	139.5	49.5	2.00	3.00	3.19	2	9	11
Bolt	Three Bolt	Unknown, COMMUNICATION	16.76	0.00	139.5	49.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	15.38	0.00	139.5	49.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	14.73	0.00	139.5	49.5	5.00	3.00	0.00	5	0	5
Totals:										-20	64	44

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.99	33.28	9.27	13.10	6.69	10.00	1.60e+6	60.00	57.00	28.74	23,414	233.75	6.71

Pole Num:	146W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.82	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.08	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021152 Deg	Longitude:	-84.461840 Deg	Elevation:	910.560614871857		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.4	0.0 318.6
Groundline	21.4	0.0 318.6
Vertical	0.7	17.4 229.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,687	302.9 318.6
Groundline	17,687	302.9 318.6
GL Allowable	84,263	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	143.6	49.1		13.8	318.6	14.4	230.0
? EHS 3/8 (Span/Head)			24.2	19.9	318.6	22.9	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 302.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	965	118.5	25,826	146.0	30.7	2,072	199	2	2,074	30.5
Comms	395	48.5	6,281	35.5	7.5	504	678	7	510	7.5
GuyBraces	-737	-90.6	-17,955	-101.5	-21.3	-1,440	33	0	-1,440	-21.2
Pole	186	22.8	3,344	18.9	4.0	268	1,965	19	287	4.2
Insulators	6	0.8	191	1.1	0.2	15	68	1	16	0.2
Pole Load	814	100.0	17,687	100.0	21.0	1,419	2,944	28	1,447	21.3
Pole Reserve Capacity			66,576		79.0	5,381			5,353	78.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 302.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	234	28.7	8,078	45.7	9.6	648	273	3	651	9.6
Unknown, COMMUNICATION	395	48.5	6,264	35.4	7.4	503	706	7	509	7.5
Pole	186	22.8	3,344	18.9	4.0	268	1,965	19	287	4.2
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	814	100.0	17,687	100.0	21.0	1,419	2,944	28	1,447	21.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	36.05	0.00	0.2316	0.47	0.129	143.6	49.1	143.6	1,064	-13,949	0	1,061	-12,888
Primary	#4 COPPER 7 STRAND KU, UTILITY	36.05	0.00	0.2316	0.31	0.129	116.3	229.5	116.3	1,064	14,283	0	858	15,140
Neutral	#4 COPPER 7 STRAND KU, UTILITY	27.98	6.59	0.2316	0.31	0.129	116.3	229.5	116.3	1,064	11,084	5	665	11,754
Neutral	#4 COPPER 7 STRAND KU, UTILITY	27.08	6.64	0.2316	0.47	0.129	143.6	49.1	143.6	1,064	-10,474	-6	796	-9,683
Secondary	#4 COPPER 7 STRAND KU, UTILITY	26.26	6.69	0.2316	0.31	0.129	116.3	229.5	116.3	1,064	10,402	5	624	11,031
Secondary	#4 COPPER 7 STRAND KU, UTILITY	24.56	6.79	0.2316	0.31	0.129	116.3	229.5	116.3	1,064	9,729	5	584	10,318
										Totals:	21,074	9	4,589	25,672

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	17.94	7.18	1.3300	2.03	0.337	143.6	49.1	143.6	925	-6,031	-65	1,319	-4,776
CATV	CATV 1.0 Unknown, COMMUNICATION	17.94	7.18	1.3300	1.58	0.337	116.3	229.5	116.3	925	6,175	-53	1,067	7,190
Telco	TELE 1.5 Unknown, COMMUNICATION	16.45	7.27	1.5000	2.39	0.900	143.6	49.1	143.6	2,000	-11,963	-114	1,323	-10,755
Telco	TELE 1.5 Unknown, COMMUNICATION	16.45	7.27	1.5000	1.83	0.900	116.3	229.5	116.3	2,000	12,250	-93	1,070	13,227
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	15.73	7.31	0.6570	2.02	0.190	143.6	49.1	143.6	750	-4,289	-38	732	-3,595
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	15.73	7.31	0.6570	1.57	0.190	116.3	229.5	116.3	750	4,392	-30	592	4,953
Totals:											534	-393	6,102	6,243

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	35.18	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.98	0.00	229.5	229.5	2.00	3.00	3.19	1	13	13	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.08	0.00	49.1	49.1	2.00	3.00	3.19	-1	12	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	26.26	0.00	229.5	229.5	2.00	3.00	3.19	1	12	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.56	0.00	229.5	229.5	2.00	3.00	3.19	1	11	12	
Bolt	Three Bolt Unknown, COMMUNICATION	17.94	0.00	139.3	229.3	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt Unknown, COMMUNICATION	16.45	0.00	139.3	229.3	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt Unknown, COMMUNICATION	15.73	0.00	139.3	229.3	5.00	3.00	0.00	-6	0	-6	
Totals:										-15	205	190

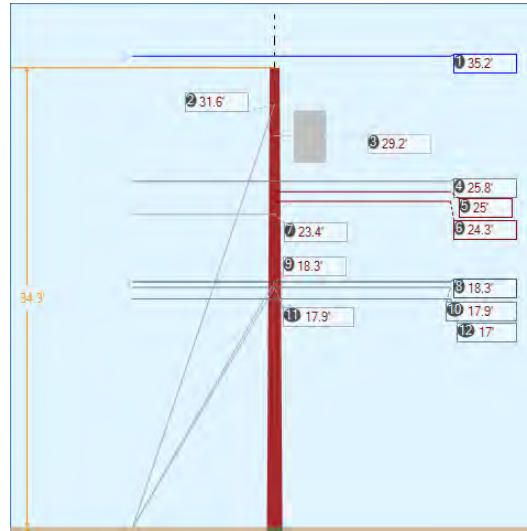
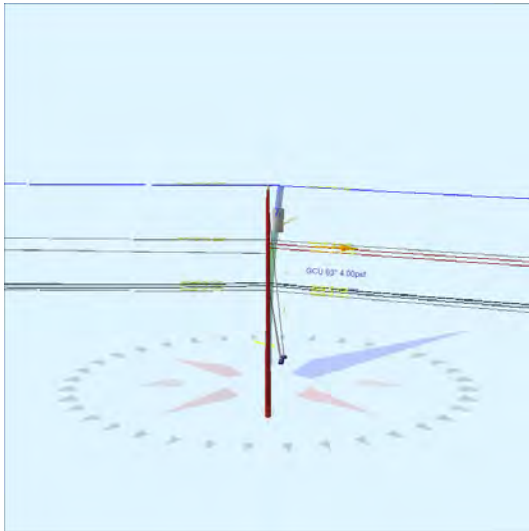
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head KU, UTILITY	24.21	24.21	143.57	0.375	75.00	49.1	0.0	0.273	141.71	2.46

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	3,172	2,883	2,753	0	2,753	-772	-17,848
Totals:										0	2,753	-772	-17,848

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	143.57	49.1	20,000	1.00	20,000	2,883	2,753	14.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	17.35	32.68	10.81	7.16	7.32	11.49	1.60e+6	60.00	57.00	35.18	415,592	4205.57	142.86

Pole Num:	147W- NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.71	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021431 Deg	Longitude:	-84.461477 Deg	Elevation:	895.896891297201		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.6	23.3
Groundline	8.2	112.7
Vertical	4.8	125.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	6,667	33.5
Groundline	6,666	89.6
GL Allowable	84,479	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.2	324.0		10.1	62.7	11.7	140.0
? EHS 3/8 (Down)			31.6	14.5	62.7	18.6	140.0
? Single Helix Anchor	143.6	229.1		14.2	62.7	14.3	50.0
? EHS 3/8 (Span/Head)			23.4	20.5	62.7	22.6	50.0
? Single Helix Anchor	16.3	324.0		6.5	62.7	7.7	140.0
? EHS 1/4 (Down)			18.3	21.7	62.7	28.3	140.0
? Single Helix Anchor	15.0	324.0		6.4	62.7	7.6	140.0
? EHS 1/4 (Down)			17.9	21.5	62.7	28.0	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 89.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,967	1245.2	53,131	797.0	62.9	6,101	160	2	6,102	89.7
Comms	766	321.3	9,670	145.1	11.5	1,110	580	6	1,116	16.4
GuyBraces	-3,716	-1559.6	-60,734	-911.1	-71.9	-6,974	5,615	54	-6,920	-101.8
PowerEquipments	49	20.5	2,419	36.3	2.9	278	1,216	12	289	4.3
Pole	168	70.4	2,051	30.8	2.4	236	1,918	18	254	3.7
Insulators	5	2.2	130	2.0	0.2	15	65	1	16	0.2
Pole Load	238	100.0	6,666	100.0	7.9	765	9,553	92	857	12.6
Pole Reserve Capacity			77,813		92.1	6,035			5,943	87.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 89.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	267	112.2	7,162	107.4	8.5	822	4,052	39	861	12.7
Unknown, COMMUNICATION	-197	-82.5	-2,547	-38.2	-3.0	-293	3,584	35	-258	-3.8
Pole	168	70.4	2,051	30.8	2.4	236	1,918	18	254	3.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	238	100.0	6,666	100.0	7.9	765	9,553	92	857	12.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.16	0.00	0.2316	0.12	0.129	79.0	65.9	79.0	1,064	44,540	0	-13	44,527
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.16	0.00	0.2316	0.40	0.129	143.6	229.2	143.6	1,064	-37,039	0	163	-36,877
Neutral	#4 COPPER 7 STRAND KU, UTILITY	25.83	6.68	0.2316	0.12	0.129	79.0	65.9	79.0	1,064	32,704	6	-10	32,701
Neutral	#4 COPPER 7 STRAND KU, UTILITY	25.83	6.68	0.2316	0.40	0.129	143.6	229.2	143.6	1,064	-27,196	11	119	-27,066
Secondary	#4 COPPER 7 STRAND KU, UTILITY	25.04	6.72	0.2316	0.12	0.129	79.0	65.9	79.0	1,064	31,712	11	-10	31,714
Secondary	#4 COPPER 7 STRAND KU, UTILITY	24.31	6.77	0.2316	0.12	0.129	79.0	65.9	79.0	1,064	30,791	11	-9	30,793
										Totals:	75,513	39	240	75,791

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	18.33	7.13	1.3300	1.00	0.337	79.0	65.9	79.0	925	20,177	15	-18	20,174
CATV	CATV 1.0 Unknown, COMMUNICATION	18.33	7.13	1.3300	2.01	0.337	143.6	229.2	143.6	925	-16,779	27	212	-16,540
Telco	TELE 1.5 Unknown, COMMUNICATION	17.90	7.16	1.5000	1.16	0.900	79.0	65.9	79.0	2,000	42,620	26	-19	42,627
Telco	TELE 1.5 Unknown, COMMUNICATION	17.90	7.16	1.5000	2.37	0.900	143.6	229.2	143.6	2,000	-35,442	47	226	-35,168

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.05	7.21	0.6570	0.96	0.190	79.0	65.9	79.0	750	15,216	9	-10	15,214
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.05	7.21	0.6570	1.92	0.190	143.6	229.2	143.6	750	-12,653	16	125	-12,513
Totals:											13,139	139	516	13,794	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA KU, UTILITY	29.19	21.97	65.0	65.0	640.00	47.00	--	24.00	--	2,024	1,426	3,450
Totals:											2,024	1,426	3,450

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	34.29	0.00	0.0	0.0	13.00	9.00	10.50	0	142	142	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.83	0.00	147.5	57.5	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.04	0.00	65.9	65.9	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.31	0.00	65.9	65.9	2.00	3.00	3.19	2	10	12	
Bolt	Single Bolt Unknown, COMMUNICATION	18.33	0.00	155.9	155.9	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	17.90	0.00	155.9	155.9	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	17.05	0.00	155.9	155.9	5.00	3.00	0.00	2	0	2	
Totals:										12	173	185

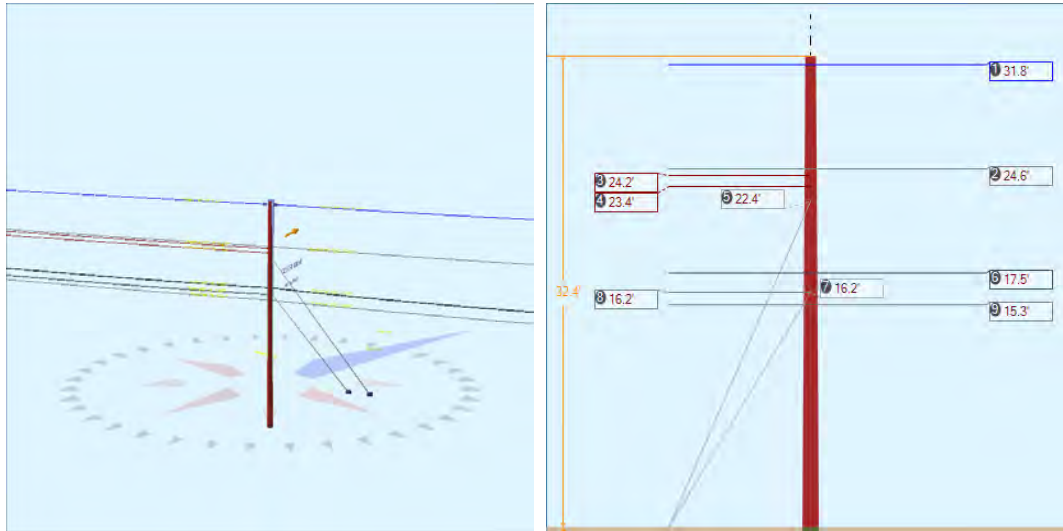
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	31.57	0.00	19.16	0.375	75.00	324.0	58.5	0.273	35.26	0.45
EHS 3/8	Span/Head	KU, UTILITY	23.36	23.36	143.57	0.375	75.00	229.1	0.0	0.273	141.71	2.54
EHS 1/4	Down	Unknown, COMMUNICATION	18.33	0.00	16.28	0.25	75.00	324.0	48.2	0.121	22.76	0.42
EHS 1/4	Down	Unknown, COMMUNICATION	17.90	0.00	15.00	0.25	75.00	324.0	49.9	0.121	21.61	0.39

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,575	2,341	2,015	1,719	1,052	-612	-18,765
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	3,134	2,849	2,845	0	2,845	-2,164	-50,438
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,693	1,539	1,301	970	866	-505	-9,028
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,675	1,523	1,285	982	828	-482	-8,407
Totals:										3,671	5,591	-3,764	-86,638

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	19.16	324.0	20,000	1.00	20,000	2,341	2,015	11.7
Single Helix Anchor		18.00	143.57	229.1	20,000	1.00	20,000	2,849	2,845	14.2
Single Helix Anchor		18.00	16.28	324.0	20,000	1.00	20,000	1,539	1,301	7.7
Single Helix Anchor		18.00	15.00	324.0	20,000	1.00	20,000	1,523	1,285	7.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.79	33.78	10.52	14.24	7.32	11.50	1.60e+6	60.00	57.00	34.29	197,661	1990.27	20.83

Pole Num:	148W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.38	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021560 Deg	Longitude:	-84.461250 Deg	Elevation:	914.311940718727		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	334.1
Groundline	0.0	334.1
Vertical	19.8	244.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	311.7	334.1
Groundline	311.7	334.1
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.0	64.0		25.3	334.1	26.1	240.0
? EHS 3/8 (Down)			22.4	36.6	334.1	41.5	240.0
? Single Helix Anchor	14.3	64.0		10.7	334.1	10.9	240.0
? EHS 1/4 (Down)			16.2	35.6	334.1	40.0	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 311.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,333	115.8	28,157	145.8	35.4	2,775	163	2	2,777	40.8
Comms	1,353	117.5	18,946	98.1	23.8	1,867	392	4	1,871	27.5
GuyBraces	-1,702	-147.8	-30,277	-156.7	-38.1	-2,984	8,408	84	-2,900	-42.6
Pole	162	14.1	2,351	12.2	3.0	232	1,765	18	249	3.7
Insulators	6	0.5	140	0.7	0.2	14	51	1	14	0.2
Pole Load	1,151	100.0	19,318	100.0	24.3	1,904	10,779	108	2,012	29.6
Pole Reserve Capacity			60,174		75.7	4,896			4,788	70.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 311.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	158	13.7	5,336	27.6	6.7	526	6,166	62	588	8.6
Unknown, COMMUNICATION	831	72.2	11,630	60.2	14.6	1,146	2,848	29	1,175	17.3
Pole	162	14.1	2,351	12.2	3.0	232	1,765	18	249	3.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,151	100.0	19,318	100.0	24.3	1,904	10,779	108	2,012	29.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	31.80	16.45	0.2316	0.51	0.129	150.3	64.1	150.3	1,064	-16,733	-5	944	-15,794
Neutral	#4 COPPER 7 STRAND KU, UTILITY	24.63	6.63	0.2316	0.51	0.129	150.3	64.1	150.3	1,064	-12,960	-20	731	-12,249
Neutral	#4 COPPER 7 STRAND KU, UTILITY	24.63	6.63	0.2316	0.14	0.129	79.0	245.9	79.0	1,064	13,943	-11	378	14,311
Secondary	#4 COPPER 7 STRAND KU, UTILITY	24.18	6.66	0.2316	0.14	0.129	79.0	245.9	79.0	1,064	13,686	5	371	14,062
Secondary	#4 COPPER 7 STRAND KU, UTILITY	23.42	6.71	0.2316	0.14	0.129	79.0	245.9	79.0	1,064	13,256	5	360	13,621
Primary	#4 COPPER 7 STRAND KU, UTILITY	31.80	16.45	0.2316	0.14	0.129	79.0	245.9	79.0	1,064	18,000	3	489	18,492
										Totals:	29,193	-23	3,273	32,442

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.48	7.07	1.3300	2.15	0.337	150.3	64.1	150.4	925	-7,996	-64	1,297	-6,763
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.48	7.07	1.3300	1.01	0.337	79.0	245.9	79.0	925	8,602	-34	672	9,240
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.15	7.15	1.5000	1.16	0.900	79.0	245.9	79.0	2,000	17,184	26	678	17,888
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.31	7.20	0.6570	2.13	0.190	150.3	64.1	150.3	750	-5,677	-37	718	-4,996
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.31	7.20	0.6570	1.00	0.190	79.0	245.9	79.0	750	6,107	-20	372	6,460
		COMMUNICATION													
Totals:											18,221	-129	3,737	21,830	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.80	0.00	64.1	64.1	3.00	3.80	12.75	-3	69	66
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.63	0.00	155.0	245.0	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.18	0.00	245.9	245.9	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.42	0.00	245.9	245.9	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	17.48	0.00	154.1	64.1	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	16.15	0.00	245.9	335.9	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	15.31	0.00	154.1	64.1	5.00	3.00	0.00	-5	0	-5
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.80	0.00	245.9	245.9	3.00	3.80	12.75	3	69	72
Totals:										-8	170	162

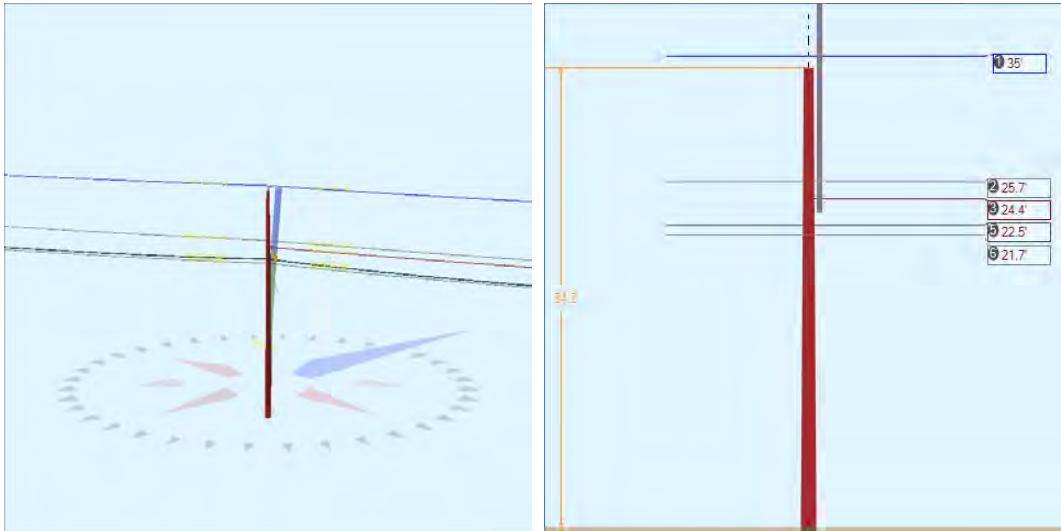
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	22.41	0.00	18.00	0.375	75.00	64.0	51.1	0.273	27.02	0.86
EHS 1/4	Down	Unknown, COMMUNICATION	16.15	0.00	14.25	0.25	75.00	64.0	48.4	0.121	19.78	0.60

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,750	5,227	5,067	3,941	3,185	-1,206	-26,463
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,392	2,175	2,129	1,593	1,413	-535	-8,421
Totals:										5,533	4,598	-1,742	-34,885

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	18.00	64.0	20,000	1.00	20,000	5,227	5,067	26.1
Single Helix Anchor		18.00	14.25	64.0	20,000	1.00	20,000	2,175	2,129	10.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.82	33.21	10.46	13.83	7.32	11.27	1.60e+6	60.00	57.00	32.39	279,024	2763.89	25.64

Pole Num:	149W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.06	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021702 Deg	Longitude:	-84.460776 Deg	Elevation:	885.286068498632		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.6	0.0
Groundline	39.6	0.0
Vertical	5.6	18.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,995	97.7
Groundline	32,995	97.7
GL Allowable	84,137	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 97.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,023	73.7	25,695	77.9	30.5	2,072	224	2	2,074	30.5
Comms	167	12.1	3,845	11.7	4.6	310	411	4	314	4.6
Pole	158	11.4	2,758	8.4	3.3	222	1,907	18	241	3.5
Risers	35	2.5	533	1.6	0.6	43	44	0	43	0.6
Insulators	5	0.3	163	0.5	0.2	13	51	0	14	0.2
Pole Load	1,388	100.0	32,995	100.0	39.2	2,661	2,638	25	2,686	39.5
Pole Reserve Capacity			51,142		60.8	4,139			4,114	60.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 97.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,163	83.8	28,743	87.1	34.2	2,318	572	6	2,323	34.2
Unknown, COMMUNICATION	66	4.8	1,494	4.5	1.8	121	159	2	122	1.8
Pole	158	11.4	2,758	8.4	3.3	222	1,907	18	241	3.5
Totals:	1,388	100.0	32,995	100.0	39.2	2,661	2,638	25	2,686	39.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.03	0.00	0.2316	0.72	0.129	182.5	65.7	182.5	1,064	31,631	0	651	32,282
Primary	#4 COPPER 7 STRAND KU, UTILITY	35.03	0.00	0.2316	0.49	0.129	150.3	244.1	150.3	1,064	-31,068	0	567	-30,500
Neutral	#4 COPPER 7 STRAND KU, UTILITY	25.70	6.68	0.2316	0.72	0.129	182.5	65.7	182.5	1,064	23,199	15	478	23,692
Neutral	#4 COPPER 7 STRAND KU, UTILITY	25.70	6.68	0.2316	0.49	0.129	150.3	244.1	150.3	1,064	-22,786	12	416	-22,358
Secondary	#4 COPPER 7 STRAND KU, UTILITY	24.42	6.75	0.2316	0.72	0.129	182.5	65.7	182.5	1,064	22,043	23	454	22,520
										Totals:	23,020	50	2,566	25,636

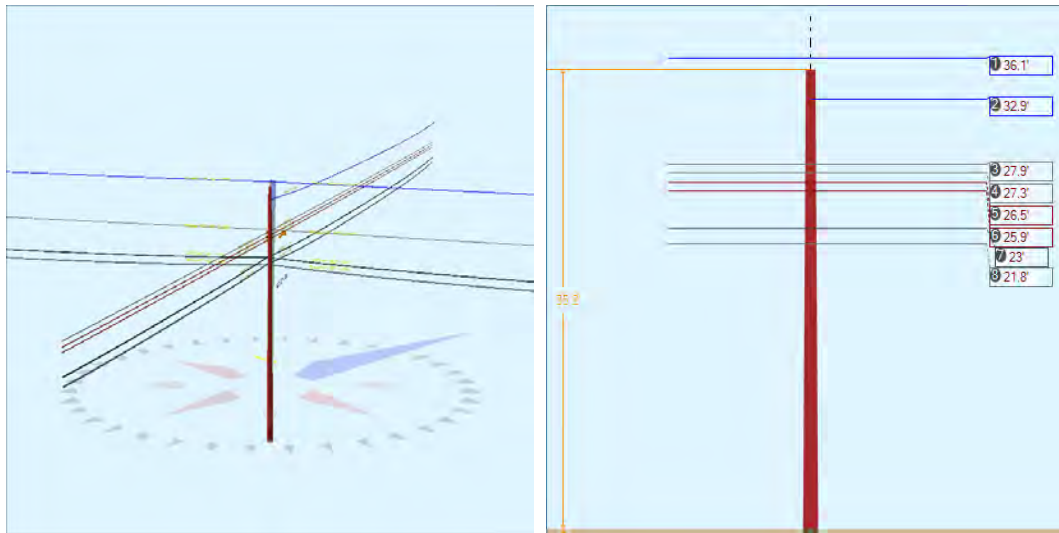
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	KU, UTILITY	22.46	6.87	1.3300	2.75	0.337	182.5	65.7	182.5	925	17,624	45	1,044	18,713
CATV	CATV 1.0	KU, UTILITY	22.46	6.87	1.3300	2.15	0.337	150.3	244.1	150.4	925	-17,310	37	910	-16,364
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.73	6.92	0.6570	2.68	0.190	182.5	65.7	182.5	750	13,828	26	639	14,492
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.73	6.92	0.6570	2.11	0.190	150.3	244.1	150.3	750	-13,581	21	557	-13,004
Totals:											560	128	3,148	3,837	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	23.02	5.85	360.0	360.0	23.02	276.28	4.00	4.00	276.28	-1	534	532
Totals:											-1	534	532	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.16	0.00	0.0	0.0	13.00	9.00	10.50	0	134	134
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.70	0.00	154.9	64.9	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.42	0.00	65.7	65.7	2.00	3.00	3.19	2	10	11
Bolt	Three Bolt	KU, UTILITY	22.46	0.00	154.9	64.9	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	21.73	0.00	154.9	64.9	5.00	3.00	0.00	3	0	3
Totals:										9	154	163

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.04	32.87	10.76	11.59	7.32	11.48	1.60e+6	60.00	57.00	34.16	47,067	471.04	17.86

Pole Num:	150W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.80	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.09	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.021944 Deg	Longitude:	-84.460197 Deg	Elevation:	875.903015881342		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	36.2	325.6
Groundline	36.2	325.6
Vertical	20.4	325.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,054	323.4
Groundline	30,054	323.4
GL Allowable	84,313	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 323.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	573	50.6	18,705	62.2	22.2	1,505	486	5	1,510	22.2
Comms	356	31.4	7,562	25.2	9.0	608	1,303	13	621	9.1
Pole	193	17.1	3,464	11.5	4.1	279	1,967	19	298	4.4
Insulators	10	0.9	324	1.1	0.4	26	65	1	27	0.4
Pole Load	1,132	100.0	30,054	100.0	35.7	2,418	3,821	37	2,455	36.1
Pole Reserve Capacity			54,259		64.4	4,382			4,345	63.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 323.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	580	51.2	18,918	63.0	22.4	1,522	526	5	1,527	22.5
Unknown, COMMUNICATION	356	31.4	7,555	25.1	9.0	608	1,322	13	621	9.1
Pole	193	17.1	3,464	11.5	4.1	279	1,967	19	298	4.4
<Undefined>	3	0.3	117	0.4	0.1	9	6	0	9	0.1
Totals:	1,132	100.0	30,054	100.0	35.7	2,418	3,821	37	2,455	36.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.07	0.00	0.3980	0.61	0.145	183.0	63.5	183.0	2,128	-17,512	0	1,687	-15,825
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.07	0.00	0.3980	0.61	0.145	182.5	242.7	182.5	2,128	16,138	0	1,689	17,827
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.92	20.93	0.3980	0.35	0.145	157.7	331.7	157.7	350	14,820	16	21	14,857
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.94	6.59	0.3980	0.61	0.145	183.0	63.5	183.0	2,128	-13,556	-33	1,306	-12,283
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.94	6.59	0.3980	0.61	0.145	182.5	242.7	182.5	2,128	12,493	-33	1,308	13,768
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.28	6.63	0.3250	0.08	0.107	80.6	152.2	80.6	1,684	-59,025	2	9	-59,014
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.28	6.63	0.3250	0.29	0.107	157.7	331.7	157.7	1,684	59,103	4	16	59,122
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.55	6.67	0.3250	0.08	0.107	80.6	152.2	80.6	1,684	-57,431	2	9	-57,421
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.55	6.67	0.3250	0.29	0.107	157.7	331.7	157.7	1,684	57,507	4	15	57,526
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.89	6.71	0.3250	0.08	0.107	80.6	152.2	80.6	1,684	-56,018	2	9	-56,007
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.89	6.71	0.3250	0.29	0.107	157.7	331.7	157.7	1,684	56,092	4	15	56,110
										Totals:	12,609	-33	6,083	18,659	

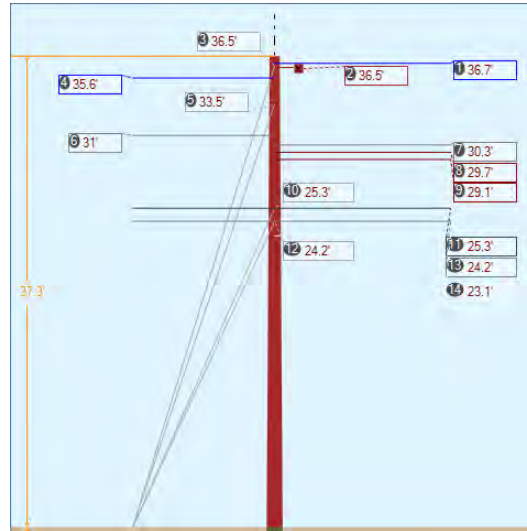
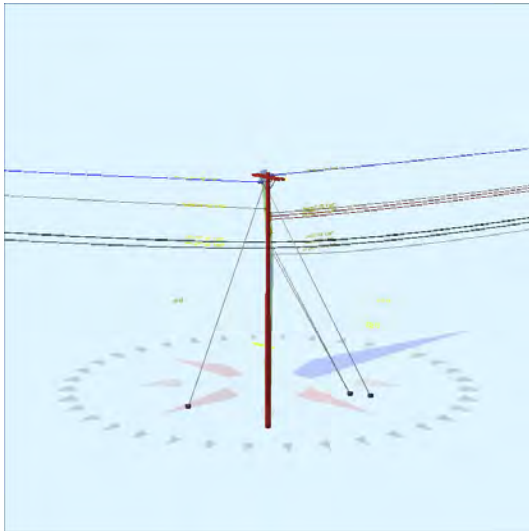
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.04	6.88	1.3300	2.77	0.337	183.0	63.5	183.0	925	-4,859	-48	2,194	-2,713

CATV	CATV 1.0	Unknown, COMMUNICATION	23.04	6.88	1.3300	1.03	0.337	80.6	152.2	80.6	925	-27,374	-21	17	-27,378
CATV	CATV 1.0	Unknown, COMMUNICATION	23.04	6.88	1.3300	2.76	0.337	182.5	242.7	182.5	925	4,478	-48	2,197	6,627
CATV	CATV 1.0	Unknown, COMMUNICATION	23.04	6.88	1.3300	2.26	0.337	157.7	331.7	157.7	925	27,410	-42	30	27,398
Telco	TELE 1.5	Unknown, COMMUNICATION	21.84	6.95	1.5000	3.29	0.900	183.0	63.5	183.0	2,000	-9,962	-85	2,274	-7,773
Telco	TELE 1.5	Unknown, COMMUNICATION	21.84	6.95	1.5000	1.18	0.900	80.6	152.2	80.6	2,000	-56,122	-38	18	-56,141
Telco	TELE 1.5	Unknown, COMMUNICATION	21.84	6.95	1.5000	3.28	0.900	182.5	242.7	182.6	2,000	9,180	-85	2,277	11,372
Telco	TELE 1.5	Unknown, COMMUNICATION	21.84	6.95	1.5000	2.67	0.900	157.7	331.7	157.8	2,000	56,195	-73	31	56,153
Totals:											-1,053	-441	9,037	7,543	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.20	0.00	0.0	0.0	13.00	9.00	10.50	0	164	164
Deadend	Deadend 17.13"		32.92	0.00	331.7	331.7	3.00	3.90	17.13	10	107	117
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.94	0.00	153.1	63.1	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.28	0.00	241.9	151.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.55	0.00	241.9	151.9	2.00	3.00	3.19	0	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.89	0.00	241.9	151.9	2.00	3.00	3.19	0	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	23.04	0.00	197.5	107.5	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	21.84	0.00	197.5	107.5	5.00	3.00	0.00	-3	0	-3
Totals:										2	320	323

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.43	33.16	10.69	14.46	7.32	11.49	1.60e+6	60.00	57.00	35.20	35,740	357.11	9.35

Pole Num:	151W - NT	Pole Length / Class:	45 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	39.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022167 Deg	Longitude:	-84.459625 Deg	Elevation:	870.743378645906		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.7	0.0
Groundline	43.7	0.0
Vertical	26.0	32.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	44,541	326.7
Groundline	44,541	326.7
GL Allowable	113,370	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.6	180.0		49.4	317.0	49.4	326.9
? EHS 3/8 (Down)			36.5	71.3	317.0	78.4	326.9
? Single Helix Anchor	18.6	66.0		47.7	317.0	48.1	290.0
? EHS 3/8 (Down)			33.5	68.8	317.0	76.4	290.0
? Single Helix Anchor	15.0	66.0		30.1	317.0	30.9	270.0
? EHS 1/4 (Down)			25.3	51.1	317.0	57.6	270.0
? EHS 1/4 (Down)			24.3	49.6	317.0	56.0	270.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 326.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,589	168.6	119,580	268.5	105.5	9,314	355	3	9,317	137.0
Comms	2,780	102.2	52,561	118.0	46.4	4,094	828	7	4,100	60.3
GuyBraces	-4,910	-180.4	-131,948	-296.2	-116.4	-10,277	33,634	266	-10,011	-147.2
Pole	221	8.1	3,205	7.2	2.8	250	2,513	20	270	4.0
Crossarms	31	1.1	865	1.9	0.8	67	201	2	69	1.0
Insulators	9	0.3	276	0.6	0.2	22	93	1	22	0.3
Pole Load	2,721	100.0	44,541	100.0	39.3	3,469	37,624	298	3,767	55.4
Pole Reserve Capacity			68,829		60.7	3,331			3,033	44.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 326.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	173	6.3	-2,884	-6.5	-2.5	-225	26,236	208	-17	-0.2
Unknown, COMMUNICATION	2,297	84.4	43,354	97.3	38.2	3,377	8,674	69	3,445	50.7
Pole	221	8.1	3,205	7.2	2.8	250	2,513	20	270	4.0
<Undefined>	31	1.1	865	1.9	0.8	67	201	2	69	1.0
Totals:	2,721	100.0	44,541	100.0	39.3	3,469	37,624	298	3,767	55.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.73	16.77	0.3980	0.49	0.145	178.2	4.6	178.2	2,128	80,173	15	777	80,966
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.58	22.09	0.3980	0.59	0.145	183.0	245.5	183.0	2,128	15,082	3	1,598	16,684
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.02	6.88	0.3980	0.59	0.145	183.0	245.5	183.0	2,128	13,146	5	1,393	14,544
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.27	6.92	0.3980	2.30	0.145	178.2	4.6	178.2	450	13,972	27	641	14,639
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.70	6.96	0.3980	2.30	0.145	178.2	4.6	178.2	450	13,706	27	628	14,362
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.13	7.00	0.3980	2.30	0.145	178.2	4.6	178.2	450	13,444	27	616	14,087
										Totals:	149,523	104	5,654	155,282	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	25.26	7.24	1.3300	3.74	0.337	178.2	4.6	178.3	450	11,660	67	1,090	12,816
CATV	CATV 1.0	Unknown, COMMUNICATION	25.26	7.24	1.3300	2.77	0.337	183.0	245.5	183.0	925	4,655	13	2,313	6,980
Telco	TELE 1.5	Unknown, COMMUNICATION	24.25	7.31	1.5000	3.93	0.900	178.2	4.6	178.3	1,250	31,088	117	1,143	32,348
Telco	TELE 1.5	Unknown, COMMUNICATION	24.25	7.31	1.5000	3.28	0.900	183.0	245.5	183.0	2,000	9,660	23	2,426	12,109

Overlashed Bundle	1/4" EHS	Unknown,	23.09	7.38	0.2500	3.88	0.121	178.2	4.6	178.4	150	3,552	23	425	4,000
COMMUNICATION															
Totals:											60,614	244	7,396	68,254	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	CROSSARM 3-1/2 X 4-1/2 X 8	36.50	5.78	10.0	10.0	53.00	4.50	3.50	96.00	0	1,124	1,124	
Totals:											0	1,124	1,124

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	36.73	0.00	4.6	4.6	3.00	3.80	12.75	6	85	92	
Deadend	Pin Insulator - 22 kV KU, UTILITY	35.58	0.00	245.5	245.5	13.00	6.00	18.00	7	184	191	
Spool	Spool Insulator - 25 kV KU, UTILITY	31.02	0.00	245.5	245.5	2.00	3.00	3.19	0	14	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	30.27	0.00	4.6	4.6	2.00	3.00	3.19	2	14	16	
Spool	Spool Insulator - 25 kV KU, UTILITY	29.70	0.00	4.6	4.6	2.00	3.00	3.19	2	14	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	29.13	0.00	4.6	4.6	2.00	3.00	3.19	2	13	15	
Bolt	Single Bolt Unknown, COMMUNICATION	25.26	0.00	4.6	94.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	25.26	0.00	245.5	245.5	5.00	3.00	0.00	1	0	1	
Bolt	Single Bolt Unknown, COMMUNICATION	24.25	0.00	4.6	94.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	24.25	0.00	245.5	245.5	5.00	3.00	0.00	1	0	1	
Bolt	Single Bolt Unknown, COMMUNICATION	23.09	0.00	4.6	94.6	5.00	3.00	0.00	5	0	5	
Totals:										34	325	359

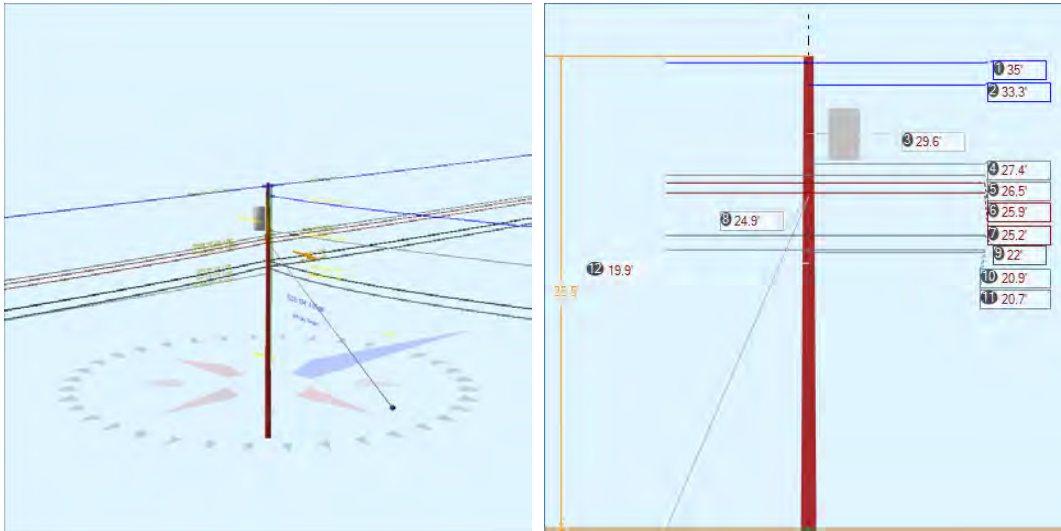
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	36.50	0.00	18.63	0.375	75.00	180.0	62.7	0.273	39.33	2.45
EHS 3/8	Down	KU, UTILITY	33.51	0.00	18.63	0.375	75.00	66.0	60.7	0.273	36.67	2.20
EHS 1/4	Down	Unknown, COMMUNICATION	25.26	0.00	14.98	0.25	75.00	66.0	59.1	0.121	27.67	1.20
EHS 1/4	Down	Unknown, COMMUNICATION	24.25	0.00	14.98	0.25	75.00	66.0	58.1	0.121	26.80	1.13

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,872	9,884	9,877	8,779	4,527	-3,783	-134,891
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,591	9,628	9,541	8,321	4,669	-756	-24,479
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,448	3,135	3,059	2,626	1,571	-254	-6,108
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,353	3,048	2,967	2,518	1,569	-254	-5,864
Totals:										22,243	12,336	-5,047	-171,341

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	18.63	180.0	20,000	1.00	20,000	9,884	9,877	49.4
Single Helix Anchor		18.00	18.63	66.0	20,000	1.00	20,000	9,628	9,541	48.1
Single Helix Anchor		18.00	14.98	66.0	20,000	1.00	20,000	6,182	6,026	30.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.96	34.78	11.27	32.45	7.96	12.68	1.60e+6	60.00	57.00	37.31	144,665	1447.09	3.85

Pole Num:	152W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.52	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.19	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022640 Deg	Longitude:	-84.459584 Deg	Elevation:	875.009517923461		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	104.1
Groundline	0.0	104.1
Vertical	22.4	259.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	39,822	111.6
Groundline	39,822	111.6
GL Allowable	85,057	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	24.8	79.0		0.0	104.1	1.8	270.0
? EHS 3/8 (Down)			24.9	0.0	104.1	2.8	270.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 111.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	216	13.7	11,314	28.4	13.3	907	376	4	910	13.4
Comms	1,099	69.8	22,570	56.7	26.5	1,809	822	8	1,817	26.7
GuyBraces	3	0.2	73	0.2	0.1	6	11	0	6	0.1
PowerEquipments	54	3.5	2,052	5.2	2.4	165	1,216	12	176	2.6
Pole	193	12.3	3,480	8.7	4.1	279	1,990	19	298	4.4
Insulators	10	0.6	333	0.8	0.4	27	91	1	28	0.4
Pole Load	1,576	100.0	39,822	100.0	46.8	3,192	4,506	43	3,235	47.6
Pole Reserve Capacity			45,235		53.2	3,608			3,565	52.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 111.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	283	18.0	13,772	34.6	16.2	1,104	1,647	16	1,120	16.5
Unknown, COMMUNICATION	1,099	69.8	22,570	56.7	26.5	1,809	869	8	1,817	26.7
Pole	193	12.3	3,480	8.7	4.1	279	1,990	19	298	4.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,576	100.0	39,822	100.0	46.8	3,192	4,506	43	3,235	47.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER SOLID KU, UTILITY	34.98	16.44	0.2043	0.20	0.126	94.4	3.1	94.4	982	-14,174	-2	631	-13,545
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.98	16.44	0.3980	0.58	0.145	178.2	184.7	178.2	2,128	28,140	5	1,541	29,686
Primary	#4 COPPER SOLID KU, UTILITY	33.30	16.54	0.2043	0.15	0.126	85.8	79.9	85.8	150	5,523	6	126	5,656
Neutral	#4 COPPER SOLID KU, UTILITY	27.36	6.64	0.2043	0.15	0.126	85.8	79.9	85.8	150	4,539	10	104	4,653
Neutral	#4 COPPER SOLID KU, UTILITY	26.51	6.69	0.2043	0.20	0.126	94.4	3.1	94.4	982	-10,742	-4	478	-10,268
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.51	6.69	0.3980	2.35	0.145	178.2	184.7	178.2	450	4,510	10	1,168	5,687

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.93	6.73	0.2316	0.20	0.129	94.4	3.1	94.4	1,064	-11,385	-4	486	-10,903
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.93	6.73	0.3980	2.35	0.145	178.2	184.7	178.2	450	4,412	10	1,142	5,563
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.19	6.77	0.2316	0.20	0.129	94.4	3.1	94.4	1,064	-11,060	-4	472	-10,592
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.19	6.77	0.3980	2.35	0.145	178.2	184.7	178.2	450	4,286	10	1,110	5,405
Totals:											4,050	35	7,258	11,342	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.98	6.96	1.3300	1.24	0.337	94.4	3.1	94.4	925	-8,390	-41	1,031	-7,400
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.98	6.96	1.3300	2.68	0.337	178.2	184.7	178.2	925	7,687	-77	1,973	9,583
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.98	6.96	1.3300	1.10	0.337	85.8	79.9	86.0	150	3,646	33	217	3,896
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.90	7.02	1.5000	1.43	0.900	94.4	3.1	94.4	2,000	-17,250	-72	1,071	-16,252
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.90	7.02	1.5000	3.17	0.900	178.2	184.7	178.2	2,000	15,805	-136	2,051	17,719
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.71	7.03	1.5000	1.27	0.900	85.8	79.9	86.0	350	8,016	59	223	8,297
		COMMUNICATION													
Overlashed Bundle	1/4" EHS	Unknown,	19.88	7.08	0.2500	1.06	0.121	178.2	184.7	178.2	800	6,013	8	761	6,783
		COMMUNICATION													
Totals:											15,526	-226	7,326	22,627	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.59	22.01	190.0	190.0	640.00	47.00	--	24.00	--	449	1,609	2,057
Totals:											449	1,609	2,057	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.98	0.00	3.1	3.1	3.00	3.80	12.75	-2	82	79
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.98	0.00	184.7	184.7	3.00	3.80	12.75	2	82	84
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.30	0.00	79.9	79.9	3.00	3.80	12.75	7	78	84

Spool	Spool Insulator - 25 kV	KU, UTILITY	27.36	0.00	79.9	79.9	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.51	0.00	3.1	3.1	2.00	3.00	3.19	-1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.51	0.00	184.7	184.7	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	3.1	3.1	2.00	3.00	3.19	-1	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.93	0.00	184.7	184.7	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.19	0.00	3.1	3.1	2.00	3.00	3.19	-1	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.19	0.00	184.7	184.7	2.00	3.00	3.19	1	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.98	0.00	273.1	3.1	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	21.98	0.00	79.9	169.9	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	20.90	0.00	273.9	273.9	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	20.71	0.00	79.9	169.9	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	19.88	0.00	184.7	274.7	5.00	3.00	0.00	2	0	2
Totals:										9	325	334

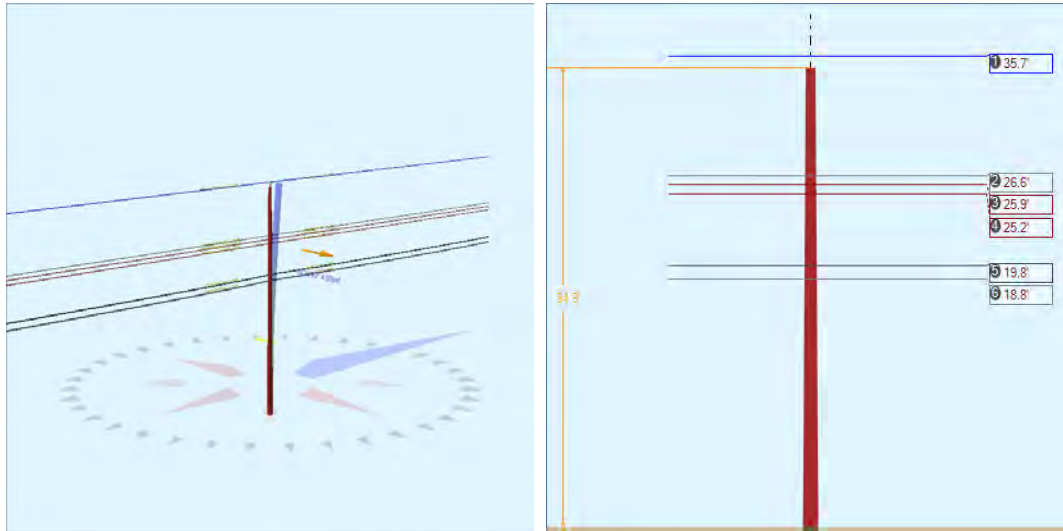
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	24.87	0.00	24.80	0.375	75.00	79.0	44.9	0.273	33.37	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	393	358	0	0	0	0	74
Totals:										0	0	0	74

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	24.80	79.0	20,000	1.00	20,000	358	0	1.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.42	33.46	10.63	9.68	7.32	11.53	1.60e+6	60.00	57.00	35.48	232,610	2371.77	52.63

Pole Num:	153W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.20	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022921 Deg	Longitude:	-84.459615 Deg	Elevation:	872.098786447969		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	93.4
Groundline	0.0	93.4
Vertical	17.0	93.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	93.3	93.4
Groundline	93.3	93.4
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 93.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	163	29.3	4,708	38.2	5.5	370	157	1	371	5.5
Comms	195	35.1	3,978	32.3	4.6	312	327	3	315	4.6
Pole	192	34.5	3,419	27.8	4.0	268	1,960	19	287	4.2
Insulators	6	1.1	218	1.8	0.3	17	55	1	18	0.3
Pole Load	555	100.0	12,322	100.0	14.4	968	2,499	24	991	14.6
Pole Reserve Capacity			73,535		85.6	5,832			5,809	85.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 93.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	169	30.4	4,914	39.9	5.7	386	193	2	388	5.7
Unknown, COMMUNICATION	195	35.1	3,989	32.4	4.7	313	346	3	317	4.7
Pole	192	34.5	3,419	27.8	4.0	268	1,960	19	287	4.2
Totals:	555	100.0	12,322	100.0	14.4	968	2,499	24	991	14.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER SOLID KU, UTILITY	35.67	0.00	0.2043	0.07	0.126	57.1	3.6	57.1	982	171	0	418	589
Primary	#4 COPPER SOLID KU, UTILITY	35.67	0.00	0.2043	0.20	0.126	94.4	183.1	94.4	982	135	0	692	826
Neutral	#4 COPPER SOLID KU, UTILITY	26.62	6.66	0.2043	0.07	0.126	57.1	3.6	57.1	982	128	8	312	448
Neutral	#4 COPPER SOLID KU, UTILITY	26.62	6.66	0.2043	0.20	0.126	94.4	183.1	94.4	982	100	13	516	630
Secondary	#4 COPPER 7 STRAND KU, UTILITY	25.94	6.70	0.2316	0.07	0.129	57.1	3.6	57.1	1,064	135	8	316	459
Secondary	#4 COPPER 7 STRAND KU, UTILITY	25.94	6.70	0.2316	0.20	0.129	94.4	183.1	94.4	1,064	106	14	522	642
Secondary	#4 COPPER 7 STRAND KU, UTILITY	25.24	6.74	0.2316	0.07	0.129	57.1	3.6	57.1	1,064	131	8	307	447
Secondary	#4 COPPER 7 STRAND KU, UTILITY	25.24	6.74	0.2316	0.20	0.129	94.4	183.1	94.4	1,064	103	14	508	625
										Totals:	1,009	66	3,592	4,667

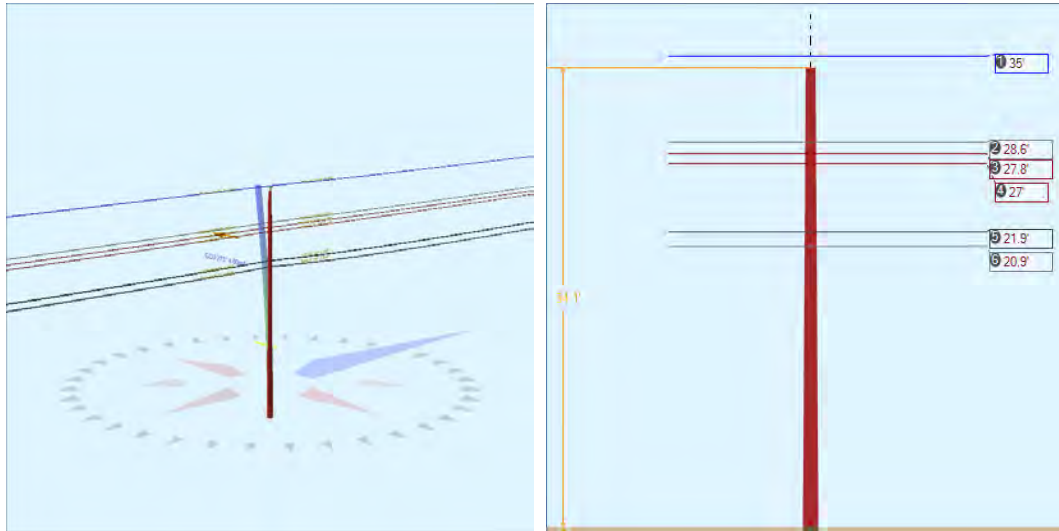
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	19.81	7.07	1.3300	0.72	0.337	57.1	3.6	57.1	925	89	26	604	719
CATV	CATV 1.0 Unknown, COMMUNICATION	19.81	7.07	1.3300	1.24	0.337	94.4	183.1	94.4	925	70	44	998	1,112
Telco	TELE 1.5 Unknown, COMMUNICATION	18.80	7.13	1.5000	0.81	0.900	57.1	3.6	57.1	2,000	184	47	626	856

Telco	TELE 1.5	Unknown,	18.80	7.13	1.5000	1.43	0.900	94.4	183.1	94.4	2,000	145	77	1,035	1,256
		COMMUNICATION													
											Totals:	488	194	3,262	3,944

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.80	0.00	0.0	0.0	13.00	9.00	10.50	0	162	162	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.62	0.00	93.3	3.3	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.94	0.00	93.3	3.3	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.24	0.00	93.3	3.3	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.81	0.00	93.3	3.3	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.80	0.00	93.6	3.6	5.00	3.00	0.00	6	0	6	
										Totals:	18	198	216

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.04	32.69	10.88	11.13	7.32	11.56	1.60e+6	60.00	57.00	34.80	55,142	555.32	22.22

Pole Num:	154W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.88	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.05	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023078 Deg	Longitude:	-84.459600 Deg	Elevation:	879.014387418675		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	273.4
Groundline	0.0	273.4
Vertical	18.0	273.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	273.3	273.4
Groundline	273.3	273.4
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 273.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	215	31.9	6,476	40.7	7.7	521	222	2	523	7.7
Comms	264	39.3	5,948	37.4	7.1	478	461	4	482	7.1
Pole	187	27.8	3,270	20.6	3.9	263	1,904	18	281	4.1
Insulators	6	0.9	216	1.4	0.3	17	55	1	18	0.3
Pole Load	672	100.0	15,910	100.0	18.9	1,279	2,642	26	1,304	19.2
Pole Reserve Capacity			68,133		81.1	5,521			5,496	80.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 273.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	221	32.8	6,681	42.0	8.0	537	258	2	539	7.9
Unknown, COMMUNICATION	264	39.3	5,959	37.5	7.1	479	480	5	484	7.1
Pole	187	27.8	3,270	20.6	3.9	263	1,904	18	281	4.1
Totals:	672	100.0	15,910	100.0	18.9	1,279	2,642	26	1,304	19.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER SOLID KU, UTILITY	35.00	0.00	0.2043	0.55	0.126	156.5	3.1	156.5	982	105	0	1,126	1,231
Primary	#4 COPPER SOLID KU, UTILITY	35.00	0.00	0.2043	0.07	0.126	57.1	183.6	57.1	982	195	0	410	605
Neutral	#4 COPPER SOLID KU, UTILITY	28.61	6.50	0.2043	0.55	0.126	156.5	3.1	156.5	982	86	22	920	1,027
Neutral	#4 COPPER SOLID KU, UTILITY	28.61	6.50	0.2043	0.07	0.126	57.1	183.6	57.1	982	159	8	336	503
Secondary	#4 COPPER 7 STRAND KU, UTILITY	27.75	6.55	0.2316	0.56	0.129	156.5	3.1	156.5	1,064	90	23	927	1,040
Secondary	#4 COPPER 7 STRAND KU, UTILITY	27.75	6.55	0.2316	0.07	0.129	57.1	183.6	57.1	1,064	167	8	338	514
Secondary	#4 COPPER 7 STRAND KU, UTILITY	27.01	6.59	0.2316	0.56	0.129	156.5	3.1	156.5	1,064	88	23	902	1,013
Secondary	#4 COPPER 7 STRAND KU, UTILITY	27.01	6.59	0.2316	0.07	0.129	57.1	183.6	57.1	1,064	163	8	329	500
										Totals:	1,054	91	5,288	6,433

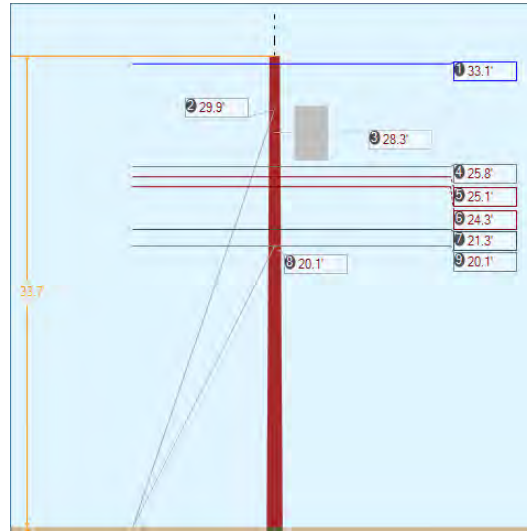
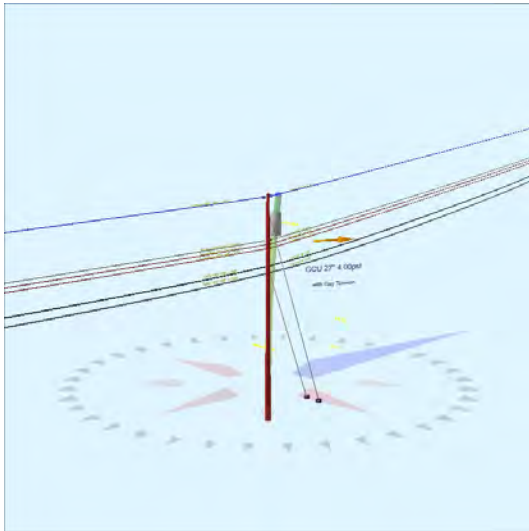
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.94	6.90	1.3300	2.27	0.337	156.5	3.1	156.6	925	62	71	1,833	1,965
CATV	CATV 1.0 Unknown, COMMUNICATION	21.94	6.90	1.3300	0.72	0.337	57.1	183.6	57.1	925	115	26	668	809
Telco	TELE 1.5 Unknown, COMMUNICATION	20.86	6.97	1.5000	2.67	0.900	156.5	3.1	156.6	2,000	128	125	1,905	2,157

Telco	TELE 1.5	Unknown,	20.86	6.97	1.5000	0.81	0.900	57.1	183.6	57.1	2,000	237	45	695	977	
												COMMUNICATION				
												Totals:	541	267	5,100	5,908

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.12	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.61	0.00	273.3	183.3	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.75	0.00	273.3	183.3	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.01	0.00	273.3	183.3	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.94	0.00	273.3	183.3	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.86	0.00	273.3	183.3	5.00	3.00	0.00	6	0	6	
										Totals:	17	198	215

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.00	32.86	10.75	11.58	7.32	11.48	1.60e+6	60.00	57.00	34.12	47,204	471.80	17.86

Pole Num:	155W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.32	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.88	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023513 Deg	Longitude:	-84.459589 Deg	Elevation:	882.403082101394		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	26.9
Groundline	0.0	23.4
Vertical	25.4	274.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	41,606	354.3
Groundline	41,606	354.3
GL Allowable	82,868	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.0	94.0		20.9	26.9	26.9	270.0
? EHS 3/8 (Down)			29.9	30.1	26.9	42.8	270.0
? Single Helix Anchor	10.0	94.0		10.7	26.9	15.1	270.0
? EHS 1/4 (Down)			20.1	35.8	26.9	55.4	270.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 354.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,440	118.5	46,391	111.5	56.0	3,928	334	3	3,931	57.8
Comms	-12	-1.0	-228	-0.6	-0.3	-19	671	7	-13	-0.2
GuyBraces	-420	-34.5	-10,708	-25.7	-12.9	-907	8,673	85	-822	-12.1
PowerEquipments	46	3.8	3,416	8.2	4.1	289	1,216	12	301	4.4
Pole	155	12.8	2,579	6.2	3.1	218	1,868	18	237	3.5
Insulators	5	0.4	156	0.4	0.2	13	42	0	14	0.2
Pole Load	1,215	100.0	41,606	100.0	50.2	3,522	12,804	125	3,647	53.6
Pole Reserve Capacity			41,262		49.8	3,278			3,153	46.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 354.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,223	100.7	42,211	101.5	50.9	3,574	7,346	72	3,645	53.6
Unknown, COMMUNICATION	-164	-13.5	-3,185	-7.7	-3.8	-270	3,590	35	-235	-3.4
Pole	155	12.8	2,579	6.2	3.1	218	1,868	18	237	3.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,215	100.0	41,606	100.0	50.2	3,522	12,804	125	3,647	53.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.13	16.44	0.3980	0.36	0.145	154.2	343.4	154.2	2,128	90,006	15	174	90,195
Primary	#4 COPPER SOLID	KU, UTILITY	33.13	16.44	0.2043	0.49	0.126	156.5	183.1	156.5	982	-41,794	-12	-66	-41,872
Neutral	#4 COPPER SOLID	KU, UTILITY	25.78	6.64	0.2043	0.49	0.126	156.5	183.1	156.5	982	-32,519	0	-51	-32,570
Neutral	#4 COPPER SOLID	KU, UTILITY	25.78	6.64	0.2043	0.49	0.126	154.2	343.4	154.2	982	32,315	0	106	32,422
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.05	6.69	0.2316	0.48	0.129	156.5	183.1	156.5	1,064	-34,243	0	-52	-34,295
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.05	6.69	0.2316	0.48	0.129	154.2	343.4	154.2	1,064	34,029	0	107	34,136

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	24.34	6.73	0.2316	0.48	0.129	156.5	183.1	156.5	1,064	-33,263	0	-50	-33,313
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	24.34	6.73	0.2316	0.48	0.129	154.2	343.4	154.2	1,064	33,054	0	104	33,159
											Totals:	47,585	6	272	47,863

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.29	6.91	1.3300	2.24	0.337	156.5	183.1	156.6	925	-25,297	1	-110	-25,406
CATV	CATV 1.0	Unknown, COMMUNICATION	21.29	6.91	1.3300	2.20	0.337	154.2	343.4	154.2	925	25,138	1	228	25,367
Telco	TELE 1.5	Unknown, COMMUNICATION	20.11	6.99	1.5000	2.65	0.900	156.5	183.1	156.6	2,000	-51,671	2	-113	-51,782
Telco	TELE 1.5	Unknown, COMMUNICATION	20.11	6.99	1.5000	2.60	0.900	154.2	343.4	154.2	2,000	51,347	2	235	51,584
											Totals:	-482	7	239	-236

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.28	21.99	360.0	360.0	640.00	47.00	--	24.00	--	2,217	1,307	3,524
											Totals:	2,217	1,307	3,524

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.13	0.00	343.4	343.4	3.00	3.80	12.75	8	66	73	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.13	0.00	183.1	183.1	3.00	3.80	12.75	-8	66	58	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.78	0.00	83.2	173.2	2.00	3.00	3.19	0	10	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.05	0.00	83.2	173.2	2.00	3.00	3.19	0	10	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.34	0.00	83.2	173.2	2.00	3.00	3.19	0	10	10	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.29	0.00	83.2	173.2	5.00	3.00	0.00	0	0	0	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.11	0.00	83.2	173.2	5.00	3.00	0.00	0	0	0	
										Totals:	0	161	161

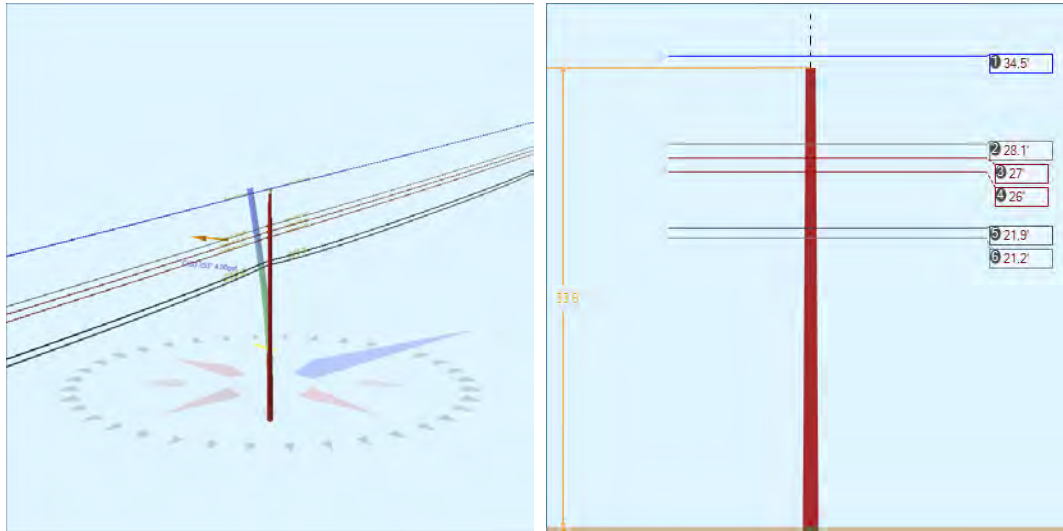
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.87	0.00	13.00	0.375	75.00	94.0	66.2	0.273	30.95	0.81
EHS 1/4	Down	Unknown, COMMUNICATION	20.11	0.00	10.00	0.25	75.00	94.0	63.3	0.121	20.80	0.63

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,928	5,389	4,174	3,820	1,682	-284	-7,997
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,316	3,014	2,141	1,913	961	-162	-3,050
Totals:										5,733	2,643	-446	-11,048

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	13.00	94.0	20,000	1.00	20,000	5,389	4,174	26.9
Single Helix Anchor			18.00	10.00	94.0	20,000	1.00	20,000	3,014	2,141	15.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.38	34.06	10.37	16.95	7.32	11.43	1.60e+6	60.00	57.00	33.68	164,205	1641.56	12.82

Pole Num:	156W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.86	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023917 Deg	Longitude:	-84.459727 Deg	Elevation:	880.156176612913		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.8	0.0
Groundline	24.8	0.0
Vertical	7.0	18.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,192	253.3
Groundline	20,192	253.3
GL Allowable	82,729	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 253.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	294	35.1	8,770	43.4	10.6	717	343	3	721	10.6
Comms	354	42.3	8,046	39.9	9.7	658	665	6	665	9.8
Pole	184	21.9	3,163	15.7	3.8	259	1,864	18	277	4.1
Insulators	6	0.7	212	1.1	0.3	17	55	1	18	0.3
Pole Load	838	100.0	20,192	100.0	24.4	1,652	2,927	29	1,680	24.7
Pole Reserve Capacity			62,537		75.6	5,148			5,120	75.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 253.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	300	35.8	8,972	44.4	10.9	734	379	4	738	10.8
Unknown, COMMUNICATION	354	42.3	8,057	39.9	9.7	659	684	7	666	9.8
Pole	184	21.9	3,163	15.7	3.8	259	1,864	18	277	4.1
Totals:	838	100.0	20,192	100.0	24.4	1,652	2,927	29	1,680	24.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.51	0.00	0.3980	0.44	0.145	154.2	163.4	154.2	2,128	114	0	1,394	1,509
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.51	0.00	0.3980	0.44	0.145	153.8	343.2	153.8	2,128	142	0	1,390	1,532
Neutral	#4 COPPER SOLID	KU, UTILITY	28.07	6.50	0.2043	0.53	0.126	154.2	163.4	154.2	982	43	21	889	953
Neutral	#4 COPPER SOLID	KU, UTILITY	28.07	6.50	0.2043	0.53	0.126	153.8	343.2	153.8	982	53	21	887	961
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	27.02	6.56	0.2316	0.54	0.129	154.2	163.4	154.2	1,064	45	22	889	956
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	27.02	6.56	0.2316	0.54	0.129	153.8	343.2	153.8	1,064	56	22	887	965
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	26.03	6.62	0.2316	0.54	0.129	154.2	163.4	154.2	1,064	43	23	856	922
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	26.03	6.62	0.2316	0.54	0.129	153.8	343.2	153.8	1,064	54	22	854	930
Totals:											550	132	8,047	8,728	

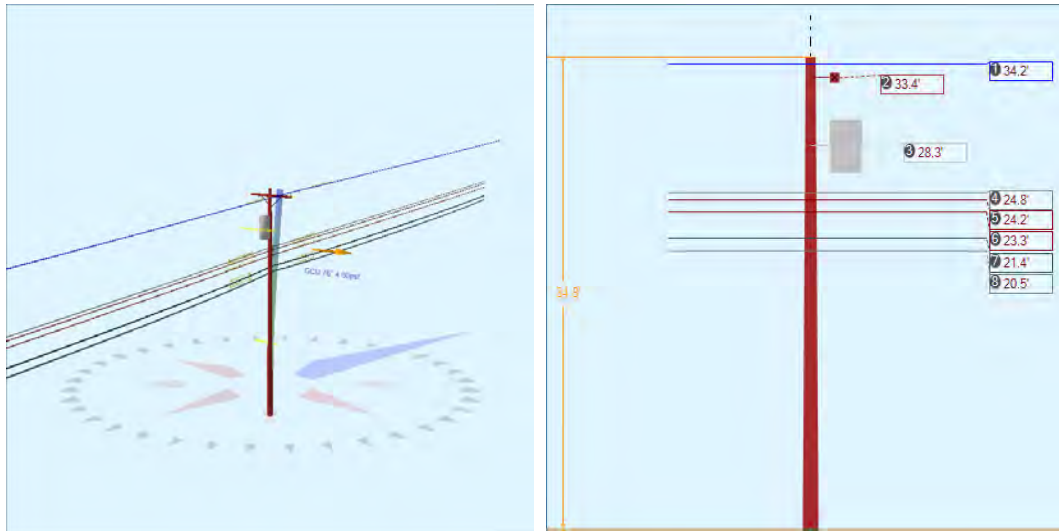
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.91	6.87	1.3300	2.22	0.337	154.2	163.4	154.2	925	32	69	1,803	1,904
CATV	CATV 1.0	Unknown, COMMUNICATION	21.91	6.87	1.3300	2.22	0.337	153.8	343.2	153.8	925	39	69	1,798	1,907
Telco	TELE 1.5	Unknown, COMMUNICATION	21.18	6.92	1.5000	2.62	0.900	154.2	163.4	154.2	2,000	66	122	1,905	2,093

Telco	TELE 1.5	Unknown,	21.18	6.92	1.5000	2.61	0.900	153.8	343.2	153.8	2,000	82	122	1,900	2,103
COMMUNICATION												Totals:			
												219	382	7,406	8,007

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.63	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.07	0.00	253.3	163.3	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.02	0.00	253.3	163.3	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.03	0.00	253.3	163.3	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.91	0.00	253.3	163.3	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.18	0.00	253.3	163.3	5.00	3.00	0.00	5	0	5
Totals:										17	194	211

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.81	33.01	10.66	12.30	7.32	11.42	1.60e+6	60.00	57.00	33.63	41,719	418.09	14.29

Pole Num:	157W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.23	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.29	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	0.000000 Deg	Longitude:	0.000000 Deg	Elevation:	0 Feet		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.8	0.0
Groundline	27.8	0.0
Vertical	13.4	21.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,343	79.6
Groundline	23,343	79.6
GL Allowable	85,775	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 79.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	361	37.3	10,329	44.3	12.0	821	281	3	824	12.1
Comms	357	36.9	7,753	33.2	9.0	616	546	5	621	9.1
PowerEquipments	55	5.7	1,719	7.4	2.0	137	1,216	12	148	2.2
Pole	191	19.7	3,367	14.4	3.9	268	1,957	19	286	4.2
Crossarms	1	0.1	39	0.2	0.0	3	95	1	4	0.1
Insulators	3	0.3	136	0.6	0.2	11	42	0	11	0.2
Pole Load	968	100.0	23,343	100.0	27.2	1,855	4,137	39	1,895	27.9
Pole Reserve Capacity			62,432		72.8	4,945			4,905	72.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 79.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	419	43.3	12,173	52.2	14.2	967	1,520	15	982	14.4
Unknown, COMMUNICATION	357	36.9	7,764	33.3	9.1	617	565	5	622	9.2
Pole	191	19.7	3,367	14.4	3.9	268	1,957	19	286	4.2
<Undefined>	1	0.1	39	0.2	0.0	3	95	1	4	0.1
Totals:	968	100.0	23,343	100.0	27.2	1,855	4,137	39	1,895	27.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.24	45.33	0.3980	0.18	0.145	99.0	344.7	99.0	2,128	-6,177	120	885	-5,172
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.24	45.33	0.3980	0.44	0.145	153.8	163.2	153.8	2,128	8,077	187	1,370	9,634
Neutral	#4 COPPER SOLID	KU, UTILITY	24.77	6.77	0.2043	0.53	0.126	153.8	163.2	153.8	982	2,694	22	777	3,493
Neutral	#4 COPPER SOLID	KU, UTILITY	24.77	6.77	0.2043	0.22	0.126	99.0	344.7	99.0	982	-2,061	14	502	-1,545
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	24.23	6.80	0.2316	0.54	0.129	153.8	163.2	153.8	1,064	2,856	23	789	3,668
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	24.23	6.80	0.2316	0.22	0.129	99.0	344.7	99.0	1,064	-2,184	15	510	-1,660

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	23.33	6.86	0.2316	0.54	0.129	153.8	163.2	153.8	1,064	2,750	23	760	3,534
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	23.33	6.86	0.2316	0.22	0.129	99.0	344.7	99.0	1,064	-2,104	15	491	-1,598
											Totals:	3,852	419	6,083	10,354

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.41	6.97	1.3300	2.21	0.337	153.8	163.2	153.8	925	2,194	70	1,745	4,009
CATV	CATV 1.0	Unknown, COMMUNICATION	21.41	6.97	1.3300	1.31	0.337	99.0	344.7	99.0	925	-1,678	45	1,127	-506
Telco	TELE 1.5	Unknown, COMMUNICATION	20.47	7.03	1.5000	2.61	0.900	153.8	163.2	153.8	2,000	4,536	123	1,824	6,483
Telco	TELE 1.5	Unknown, COMMUNICATION	20.47	7.03	1.5000	1.51	0.900	99.0	344.7	99.0	2,000	-3,469	79	1,177	-2,213
											Totals:	1,583	317	5,872	7,772

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.26	22.06	165.0	165.0	640.00	47.00	--	24.00	--	178	1,546	1,723
											Totals:	178	1,546	1,723

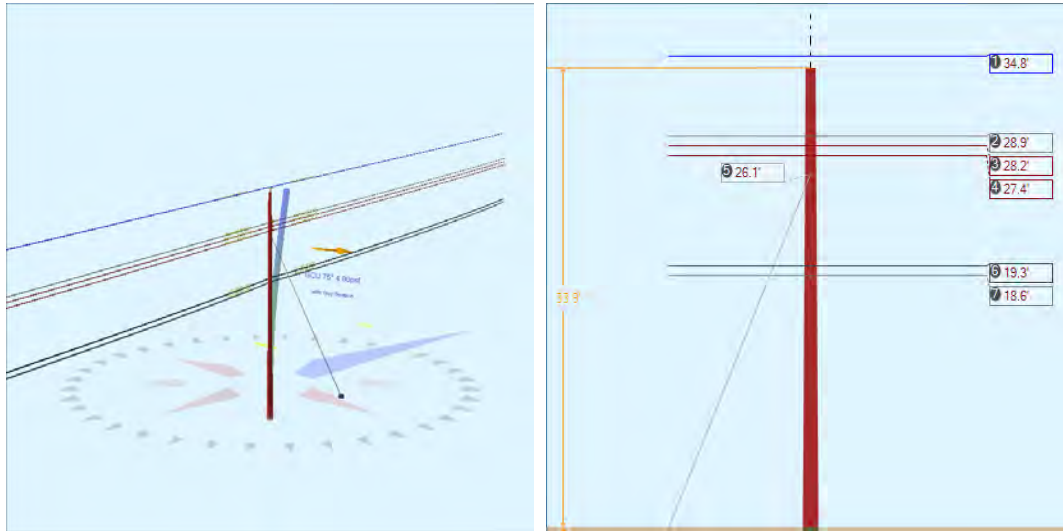
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm		33.43	5.49	344.7	344.7	50.00	4.50	3.50	96.00	-4	42	39	
											Totals:	-4	42	39

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.62	45.00	67.7	0.0	6.00	3.50	7.50	42	43	85
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.77	0.00	74.0	344.0	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.23	0.00	74.0	344.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.33	0.00	74.0	344.0	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	21.41	0.00	74.0	344.0	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	20.47	0.00	74.0	344.0	5.00	3.00	0.00	6	0	6
Totals:										60	77	136

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.90	33.46	10.66	15.45	7.32	11.56	1.60e+6	60.00	57.00	34.77	30,800	308.72	7.46

Pole Num:	158W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.07	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.97	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024566 Deg	Longitude:	-84.459940 Deg	Elevation:	890.237185638799		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	74.9
Groundline	0.0	74.9
Vertical	17.7	256.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,126	75.0
Groundline	17,126	75.0
GL Allowable	83,521	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	14.1	76.0		0.0	74.9	2.9	260.0
? EHS 3/8 (Down)			26.1	0.0	74.9	4.7	260.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 75.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	265	36.1	8,155	47.6	9.8	662	231	2	664	9.8
Comms	276	37.6	5,507	32.2	6.6	447	447	4	451	6.6
GuyBraces	1	0.2	29	0.2	0.0	2	9	0	2	0.0
Pole	186	25.3	3,220	18.8	3.9	261	1,888	18	280	4.1
Insulators	6	0.8	215	1.3	0.3	18	55	1	18	0.3
Pole Load	734	100.0	17,126	100.0	20.5	1,389	2,630	26	1,415	20.8
Pole Reserve Capacity			66,395		79.5	5,411			5,385	79.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 75.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	272	37.1	8,388	49.0	10.0	680	276	3	683	10.0
Unknown, COMMUNICATION	276	37.6	5,518	32.2	6.6	448	466	5	452	6.6
Pole	186	25.3	3,220	18.8	3.9	261	1,888	18	280	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	734	100.0	17,126	100.0	20.5	1,389	2,630	26	1,415	20.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.80	0.00	0.3980	0.18	0.145	99.0	164.7	99.0	2,128	518	0	902	1,421
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.80	0.00	0.3980	0.22	0.145	108.3	345.4	108.3	2,128	608	0	987	1,595
Neutral	#4 COPPER SOLID	KU, UTILITY	28.90	6.47	0.2043	0.22	0.126	99.0	164.7	99.0	982	199	14	588	800
Neutral	#4 COPPER SOLID	KU, UTILITY	28.90	6.47	0.2043	0.26	0.126	108.3	345.4	108.3	982	233	15	643	891
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	28.18	6.51	0.2316	0.22	0.129	99.0	164.7	99.0	1,064	210	14	595	819
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	28.18	6.51	0.2316	0.27	0.129	108.3	345.4	108.3	1,064	246	16	651	913
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	27.45	6.56	0.2316	0.22	0.129	99.0	164.7	99.0	1,064	204	14	579	798

Secondary	#4 COPPER 7 STRAND	KU, UTILITY	27.45	6.56	0.2316	0.27	0.129	108.3	345.4	108.3	1,064	240	16	634	889
											Totals:	2,458	88	5,579	8,125

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.32	7.05	1.3300	1.31	0.337	99.0	164.7	99.0	925	125	46	1,020	1,191
CATV	CATV 1.0	Unknown, COMMUNICATION	19.32	7.05	1.3300	1.45	0.337	108.3	345.4	108.3	925	147	50	1,116	1,313
Telco	TELE 1.5	Unknown, COMMUNICATION	18.61	7.09	1.5000	1.51	0.900	99.0	164.7	99.0	2,000	260	80	1,074	1,415
Telco	TELE 1.5	Unknown, COMMUNICATION	18.61	7.09	1.5000	1.68	0.900	108.3	345.4	108.3	2,000	305	88	1,175	1,568
											Totals:	837	264	4,386	5,487

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.93	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.90	0.00	75.0	345.0	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.18	0.00	75.0	345.0	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.45	0.00	75.0	345.0	2.00	3.00	3.19	2	13	15	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.32	0.00	75.0	345.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.61	0.00	75.0	345.0	5.00	3.00	0.00	6	0	6	
										Totals:	17	197	215

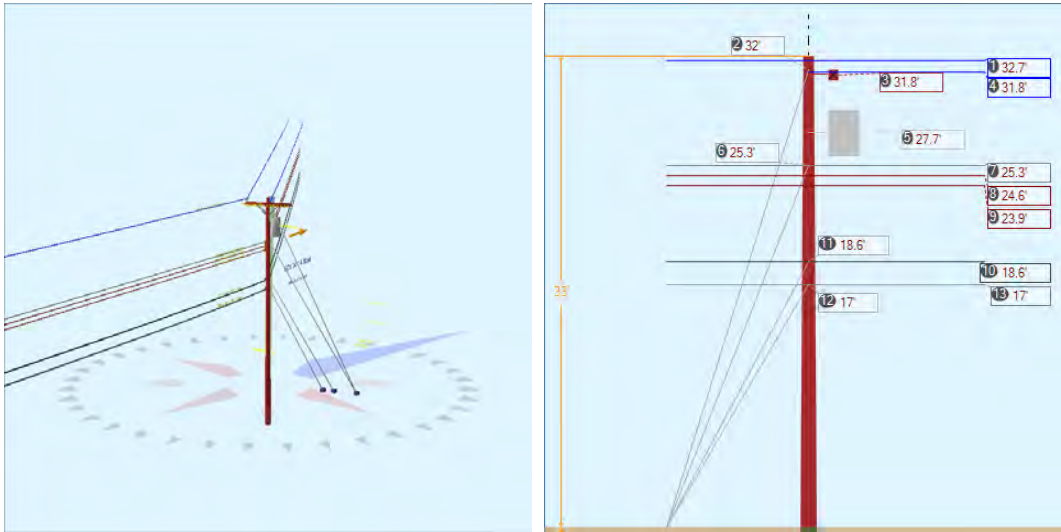
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	26.10	0.00	14.13	0.375	75.00	76.0	61.4	0.273	28.02	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)		
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	648	589	0	0	0	0	29	
										Totals:	0	0	0	29

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	14.13	76.0	20,000	1.00	20,000	589	0	2.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	17.66	32.82	10.75	6.82	7.32	11.46	1.60e+6	60.00	57.00	33.93	391,338	3757.81	142.86

Pole Num:	159W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.03	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.61	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	0.000000 Deg	Longitude:	0.000000 Deg	Elevation:	0 Feet		



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.4	0.0
Groundline	56.4	0.0
Vertical	11.9	24.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	43,082	331.5
Groundline	43,082	331.5
GL Allowable	80,996	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.0	64.0		39.4	341.2	43.3	240.0
? EHS 3/8 (Down)			32.0	27.0	341.2	32.6	240.0
? EHS 3/8 (Down)			25.3	29.9	341.2	36.2	240.0
? Single Helix Anchor	12.0	64.0		14.9	341.2	16.9	240.0
? EHS 3/8 (Down)			18.6	21.4	341.2	26.8	240.0
? Single Helix Anchor	10.0	64.0		12.7	341.2	14.6	240.0
? EHS 3/8 (Down)			17.0	18.3	341.2	23.1	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 331.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,325	95.7	41,262	95.8	50.9	3,519	390	4	3,523	51.8
Comms	30	2.2	524	1.2	0.7	45	558	6	50	0.7
GuyBraces	-261	-18.9	-6,101	-14.2	-7.5	-520	17,443	173	-347	-5.1
PowerEquipments	41	3.0	2,170	5.0	2.7	185	694	7	192	2.8
Pole	177	12.8	2,953	6.9	3.7	252	1,811	18	270	4.0
Crossarms	66	4.8	2,079	4.8	2.6	177	190	2	179	2.6
Insulators	6	0.4	195	0.5	0.2	17	59	1	17	0.3
Pole Load	1,384	100.0	43,082	100.0	53.2	3,674	21,145	210	3,884	57.1
Pole Reserve Capacity			37,914		46.8	3,126			2,916	42.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 331.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,111	80.3	37,526	87.1	46.3	3,200	18,567	184	3,384	49.8
Unknown, COMMUNICATION	30	2.2	525	1.2	0.7	45	577	6	50	0.7
Pole	177	12.8	2,953	6.9	3.7	252	1,811	18	270	4.0
<Undefined>	66	4.8	2,079	4.8	2.6	177	190	2	179	2.6
Totals:	1,384	100.0	43,082	100.0	53.2	3,674	21,145	210	3,884	57.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.66	45.00	0.3980	0.16	0.145	108.3	165.4	108.3	2,128	-87,747	1	16	-87,730
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.66	45.00	0.3980	0.32	0.145	150.4	318.5	150.4	2,128	88,065	1	112	88,178
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.84	18.17	0.3980	1.04	0.145	150.4	318.5	150.4	1,000	40,334	15	109	40,458
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.32	6.63	0.3980	0.16	0.145	108.3	165.4	108.3	2,128	-67,997	0	12	-67,984
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.32	6.63	0.3980	0.32	0.145	150.4	318.5	150.4	2,128	68,243	0	87	68,330
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.60	6.67	0.3980	0.16	0.145	108.3	165.4	108.3	2,128	-66,054	0	12	-66,042
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.60	6.67	0.3980	0.32	0.145	150.4	318.5	150.4	2,128	66,293	0	84	66,378
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.90	6.71	0.3980	0.16	0.145	108.3	165.4	108.3	2,128	-64,183	0	12	-64,171
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.90	6.71	0.3980	0.32	0.145	150.4	318.5	150.4	2,128	64,416	0	82	64,498
Totals:											41,369	19	527	41,915	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.58	7.04	1.3300	1.43	0.337	108.3	165.4	108.3	925	-21,694	0	19	-21,675
CATV	CATV 1.0	Unknown, COMMUNICATION	18.58	7.04	1.3300	2.12	0.337	150.4	318.5	150.4	925	21,772	1	130	21,903

Telco	TELE 1.5	Unknown, COMMUNICATION	16.96	7.13	1.5000	1.67	0.900	108.3	165.4	108.3	2,000	-42,814	1	19	-42,795
Telco	TELE 1.5	Unknown, COMMUNICATION	16.96	7.13	1.5000	2.51	0.900	150.4	318.5	150.4	2,000	42,969	1	130	43,100
Totals:												234	2	297	533

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA KU, UTILITY	27.71	20.98	360.0	360.0	365.00	39.00	--	22.00	--	1,066	1,139	2,205	
Totals:												1,066	1,139	2,205

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	31.84	5.48	152.0	152.0	50.00	4.50	3.50	96.00	0	2,112	2,112		
Totals:												0	2,112	2,112

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV KU, UTILITY	32.03	45.00	235.0	0.0	6.00	3.50	7.50	1	81	82	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	31.84	0.00	332.0	170.0	3.00	3.80	12.75	9	74	82	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.32	0.00	242.0	152.0	2.00	3.00	3.19	0	12	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.60	0.00	242.0	152.0	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.90	0.00	242.0	152.0	2.00	3.00	3.19	0	11	11	
Bolt	Three Bolt Unknown, COMMUNICATION	18.58	0.00	242.0	152.0	5.00	3.00	0.00	0	0	0	
Bolt	Three Bolt Unknown, COMMUNICATION	16.96	0.00	242.0	152.0	5.00	3.00	0.00	0	0	0	
Totals:										9	189	198

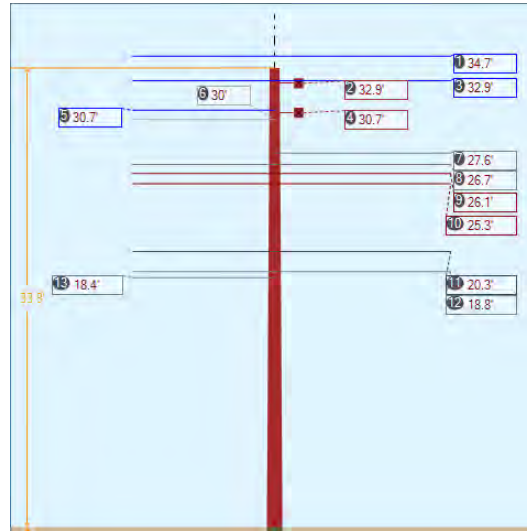
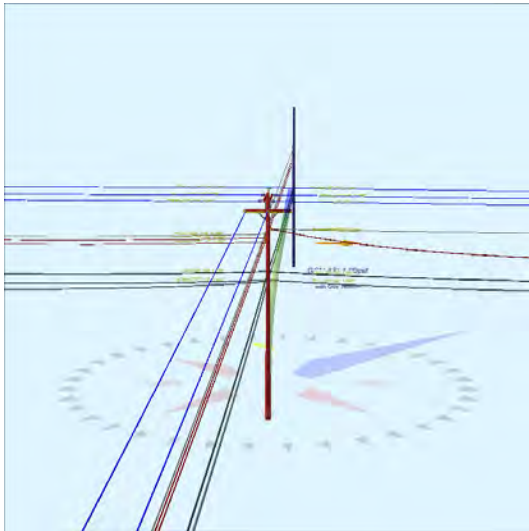
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	32.00	0.00	16.00	0.375	75.00	64.0	63.2	0.273	34.14	0.81
EHS 3/8	Down	KU, UTILITY	25.33	0.00	16.00	0.375	75.00	64.0	57.5	0.273	28.28	0.74
EHS 3/8	Down	KU, UTILITY	18.58	0.00	12.00	0.375	75.00	64.0	56.9	0.273	20.42	0.38
EHS 3/8	Down	KU, UTILITY	17.00	0.00	10.00	0.375	75.00	64.0	59.3	0.273	18.03	0.29

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,513	4,103	3,743	3,341	1,687	-73	-1,997
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,022	4,565	4,141	3,493	2,224	-96	-2,199
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,708	3,371	2,972	2,491	1,621	-70	-1,166
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,202	2,911	2,532	2,178	1,292	-56	-835
Totals:										11,502	6,824	-296	-6,198

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.00	64.0	20,000	1.00	20,000	8,657	7,874	43.3
Single Helix Anchor		18.00	12.00	64.0	20,000	1.00	20,000	3,371	2,972	16.9
Single Helix Anchor		18.00	10.00	64.0	20,000	1.00	20,000	2,911	2,532	14.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.25	33.91	10.33	21.24	7.32	11.34	1.60e+6	60.00	57.00	32.97	177,441	1776.91	8.40

Pole Num:	160W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.17	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.94	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025160 Deg	Longitude:	-84.460404 Deg	Elevation:	873.740581190358		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	46.9	18.3
Groundline	33.4	0.0
Vertical	2.2	138.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,818	63.1
Groundline	27,733	50.3
GL Allowable	83,261	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	108.9	318.3		24.7	43.0	29.5	140.0
? EHS 3/8 (Span/Head)			30.0	35.6	43.0	46.9	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 50.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,710	340.3	50,161	180.9	60.3	4,111	924	9	4,119	60.6
Comms	-1,349	-268.4	-24,522	-88.4	-29.5	-2,010	1,425	14	-1,996	-29.3
GuyBraces	-142	-28.3	-4,261	-15.4	-5.1	-349	25	0	-349	-5.1
Pole	184	36.5	3,152	11.4	3.8	258	1,880	18	277	4.1
Crossarms	71	14.2	2,328	8.4	2.8	191	570	6	196	2.9
Insulators	29	5.7	875	3.2	1.1	72	150	1	73	1.1
Pole Load	503	100.0	27,733	100.0	33.3	2,273	4,975	48	2,321	34.1
Pole Reserve Capacity			55,528		66.7	4,527			4,479	65.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 50.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,272	253.0	37,794	136.3	45.4	3,097	933	9	3,106	45.7
<Undefined>	396	78.8	11,315	40.8	13.6	927	689	7	934	13.7
Unknown, COMMUNICATION	-1,349	-268.4	-24,528	-88.4	-29.5	-2,010	1,473	14	-1,996	-29.3
Pole	184	36.5	3,152	11.4	3.8	258	1,880	18	277	4.1
Totals:	503	100.0	27,733	100.0	33.3	2,273	4,975	48	2,321	34.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.71	0.00	0.3980	0.34	0.145	156.6	49.1	156.6	2,128	96,036	0	-3	96,033
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.71	0.00	0.3980	0.31	0.145	149.4	228.3	149.4	2,128	-95,999	0	-4	-96,003
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.89	48.63	0.3980	0.34	0.145	156.6	49.1	156.6	2,128	90,968	6	-3	90,971
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.89	48.46	0.3980	0.34	0.145	156.6	49.1	156.6	2,128	90,968	6	-3	90,970
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.89	48.63	0.3980	0.31	0.145	149.4	228.3	149.4	2,128	-90,932	-5	-4	-90,942
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.89	48.46	0.3980	0.31	0.145	149.4	228.3	149.4	2,128	-90,932	-6	-4	-90,943

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.72	46.87	0.3980	0.42	0.145	150.4	138.5	150.4	2,128	2,642	-15	1,204	3,830
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.72	18.35	0.3980	0.42	0.145	150.4	138.5	150.4	2,128	2,642	0	1,204	3,846
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.57	6.54	0.3980	0.34	0.145	156.6	49.1	156.6	2,128	76,242	28	-2	76,268
Secondary	TRIPLEX 1/0		27.57	6.54	1.0300	1.78	0.399	156.6	49.1	157.2	250	8,957	65	-4	9,017
Neutral	#4 COPPER SOLID	KU, UTILITY	26.72	6.59	0.2043	0.51	0.126	150.4	138.5	150.4	982	1,060	-21	821	1,860
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.72	6.59	0.3980	1.78	0.145	149.4	228.3	149.5	450	-15,620	-27	-3	-15,650
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.72	6.59	0.3250	0.20	0.107	108.9	318.3	108.9	1,684	-2,022	-16	696	-1,342
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	26.06	6.63	0.2316	0.51	0.129	150.4	138.5	150.4	1,064	1,120	-22	832	1,930
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	26.06	6.63	0.2316	0.27	0.129	108.9	318.3	108.9	1,064	-1,246	-16	602	-660
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.06	6.63	0.3980	1.78	0.145	149.4	228.3	149.5	450	-15,233	-27	-3	-15,264
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.30	6.68	0.2316	0.51	0.129	150.4	138.5	150.4	1,064	1,088	-22	808	1,874
Secondary	#4 COPPER 7 STRAND	KU, UTILITY	25.30	6.68	0.2316	0.27	0.129	108.9	318.3	108.9	1,064	-1,210	-16	585	-641
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.30	6.68	0.3980	1.78	0.145	149.4	228.3	149.5	450	-14,794	-27	-3	-14,824
Totals:											43,733	-116	6,713	50,330	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.31	6.98	1.3300	2.24	0.337	156.6	49.1	156.7	925	24,413	2	-4	24,411
CATV	CATV 1.0	Unknown,	20.31	6.98	1.3300	2.15	0.337	150.4	138.5	150.4	925	759	2	1,621	2,383
CATV	CATV 1.0	Unknown,	20.31	6.98	1.3300	2.11	0.337	149.4	228.3	149.5	925	-24,403	2	-5	-24,406
CATV	CATV 1.0	Unknown,	20.31	6.98	1.3300	1.46	0.337	108.9	318.3	108.9	925	-844	-2	1,174	328
Telco	TELE 1.5	Unknown,	18.84	7.07	1.5000	2.65	0.900	156.6	49.1	156.7	2,000	48,971	4	-4	48,971
Telco	TELE 1.5	Unknown,	18.84	7.07	1.5000	2.53	0.900	150.4	138.5	150.4	2,000	1,523	4	1,644	3,170
Telco	TELE 1.5	Unknown,	18.84	7.07	1.5000	2.49	0.900	149.4	228.3	149.5	2,000	-48,953	3	-5	-48,954

Telco	TELE 1.5	Unknown, COMMUNICATION	18.84	7.07	1.5000	1.69	0.900	108.9	318.3	108.9	2,000	-1,694	-3	1,190	-506
Telco	TELE 1.5	Unknown, COMMUNICATION	18.40	7.10	1.5000	3.01	0.900	149.4	228.3	149.5	1,250	-29,874	-121	-5	-30,000
Totals:											-30,102	-109	5,607	-24,604	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.89	5.47	48.7	48.7	50.00	4.50	3.50	96.00	0	2,198	2,198	
Normal	Crossarm	30.72	5.60	138.5	138.5	50.00	4.50	3.50	96.00	0	69	69	
Normal	Crossarm	30.72	5.60	138.5	138.5	50.00	4.50	3.50	96.00	0	69	69	
Totals:											0	2,336	2,336

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	33.83	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156
Deadend	Deadend Insulator - 15 kV	32.89	45.00	131.8	0.4	3.00	3.80	12.75	18	154	172
Deadend	Deadend Insulator - 15 kV	32.89	-45.00	325.6	0.4	3.00	3.80	12.75	16	154	170
Deadend	Deadend Insulator - 15 kV	32.89	45.00	145.6	179.6	3.00	3.80	12.75	-16	154	138
Deadend	Deadend Insulator - 15 kV	32.89	-45.00	311.8	179.6	3.00	3.80	12.75	-18	154	135
Deadend	Pin Insulator - 5 kV	30.72	45.00	221.4	0.0	6.00	3.50	7.50	-42	39	-3
Deadend	Deadend Insulator - 15 kV	30.72	0.00	138.5	0.0	3.00	3.80	12.75	0	72	72
Spool	Spool Insulator - 25 kV	27.57	0.00	49.1	49.1	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	26.72	0.00	228.5	138.5	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	26.06	0.00	228.4	138.4	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	25.30	0.00	228.4	138.4	2.00	3.00	3.19	-2	12	10
Bolt	Three Bolt	20.31	0.00	138.6	48.6	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	20.31	0.00	318.3	408.3	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	18.84	0.00	138.6	48.6	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	18.84	0.00	318.3	408.3	5.00	3.00	0.00	0	0	0

Bolt	Single Bolt	Unknown, COMMUNICATION	18.40	0.00	228.3	318.3	5.00	3.00	0.00	-6	0	-6
Totals:										-52	930	878

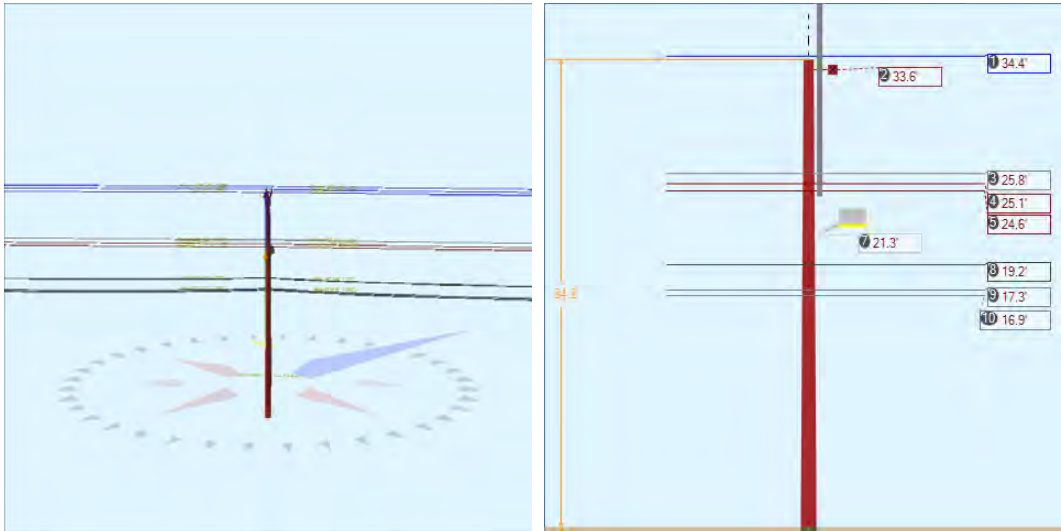
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	30.03	30.03	108.85	0.375	75.00	318.3	0.0	0.273	107.03	3.33

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	6,496	5,905	4,939	0	4,939	-170	-4,276
Totals:										0	4,939	-170	-4,276

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	108.85	318.3	20,000	1.00	20,000	5,905	4,939	29.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.11	33.53	10.54	10.04	7.32	11.44	1.60e+6	60.00	57.00	33.83	230,600	2261.42	45.45

Pole Num:	161W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.83	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024899 Deg	Longitude:	-84.460801 Deg	Elevation:	886.209673460866		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.0	137.0
Groundline	33.0	137.0
Vertical	10.5	137.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,336	137.8
Groundline	27,336	137.8
GL Allowable	84,166	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 137.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	470	39.1	14,128	51.7	16.8	1,145	535	5	1,150	16.9
Comms	478	39.7	8,815	32.3	10.5	714	957	9	723	10.6
Pole	187	15.6	3,249	11.9	3.9	263	1,908	18	282	4.1
Crossarms	3	0.2	82	0.3	0.1	7	190	2	9	0.1
Streetlights	20	1.6	182	0.7	0.2	15	86	1	16	0.2
Risers	37	3.1	568	2.1	0.7	46	44	0	46	0.7
Insulators	9	0.8	312	1.1	0.4	25	118	1	26	0.4
Pole Load	1,204	100.0	27,336	100.0	32.5	2,215	3,838	37	2,252	33.1
Pole Reserve Capacity			56,830		67.5	4,585			4,548	66.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 137.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	536	44.5	15,179	55.5	18.0	1,230	745	7	1,237	18.2
Unknown, COMMUNICATION	478	39.7	8,826	32.3	10.5	715	995	10	725	10.7
Pole	187	15.6	3,249	11.9	3.9	263	1,908	18	282	4.1
<Undefined>	3	0.2	82	0.3	0.1	7	190	2	9	0.1
Totals:	1,204	100.0	27,336	100.0	32.5	2,215	3,838	37	2,252	33.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.43	0.00	0.3980	0.28	0.145	121.5	228.1	121.5	2,128	-323	0	1,096	773
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.43	0.00	0.3980	0.41	0.145	149.4	48.3	149.4	2,128	579	0	1,348	1,926
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.43	45.00	0.3980	0.28	0.145	121.5	228.1	121.5	2,128	-323	-150	1,096	623
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.43	45.00	0.3980	0.41	0.145	149.4	48.3	149.4	2,128	579	-184	1,348	1,742
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.43	45.00	0.3980	0.28	0.145	121.5	228.1	121.5	2,128	-323	150	1,096	923

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.43	45.00	0.3980	0.41	0.145	149.4	48.3	149.4	2,128	579	184	1,348	2,111
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.84	6.67	0.3980	0.41	0.145	149.4	48.3	149.4	2,128	434	27	1,011	1,472
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.84	6.67	0.3980	0.28	0.145	121.5	228.1	121.5	2,128	-242	22	822	602
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.10	6.71	0.3980	0.41	0.145	149.4	48.3	149.4	2,128	422	28	982	1,431
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.10	6.71	0.3980	0.28	0.145	121.5	228.1	121.5	2,128	-235	22	799	586
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.58	6.74	0.3980	0.41	0.145	149.4	48.3	149.4	2,128	413	28	962	1,402
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.58	6.74	0.3980	0.28	0.145	121.5	228.1	121.5	2,128	-230	22	782	574
Totals:											1,328	150	12,688	14,166	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.18	7.07	1.3300	2.14	0.337	149.4	48.3	149.5	925	140	69	1,529	1,739
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.18	7.07	1.3300	1.66	0.337	121.5	228.1	121.5	925	-78	56	1,244	1,222
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.34	7.18	1.5000	2.51	0.900	149.4	48.3	149.5	2,000	274	123	1,511	1,908
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.34	7.18	1.5000	1.94	0.900	121.5	228.1	121.5	2,000	-153	100	1,229	1,176
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.93	7.21	1.5000	2.51	0.900	149.4	48.3	149.5	2,000	267	1	1,476	1,744
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.93	7.21	1.5000	1.94	0.900	121.5	228.1	121.5	2,000	-149	0	1,200	1,050
		COMMUNICATION													
Totals:											301	349	8,189	8,838	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.61	5.44	228.1	228.1	50.00	4.50	3.50	96.00	0	83	83	
Totals:											0	83	83

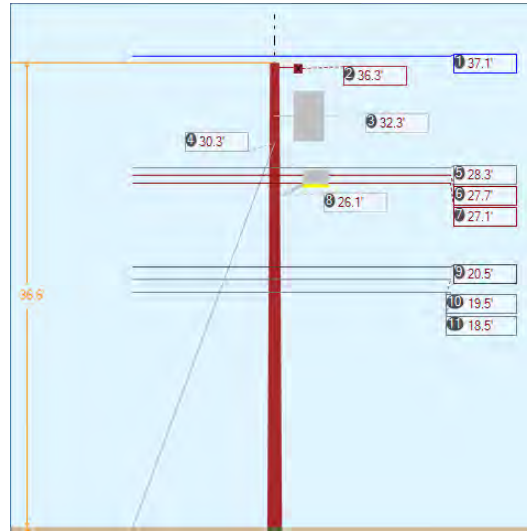
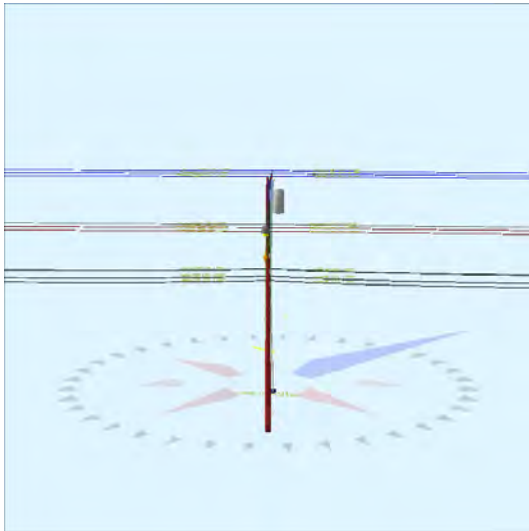
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	21.29	4.44	320.0	320.0	45.00	24.00	20.00	3.00	36.00	-239	422	183
Totals:											-239	422	183	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	23.35	5.85	360.0	360.0	23.35	280.14	4.00	4.00	280.14	-8	578	569
Totals:											-8	578	569	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.80	0.00	228.1	0.0	6.00	3.50	7.50	0	87	87
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.80	45.00	311.2	0.0	6.00	3.50	7.50	-85	87	1
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.80	-45.00	145.0	0.0	6.00	3.50	7.50	85	87	172
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.84	0.00	138.2	48.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.10	0.00	138.2	48.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.58	0.00	138.2	48.2	2.00	3.00	3.19	2	11	14
Bolt	Three Bolt	Unknown, COMMUNICATION	19.18	0.00	138.2	48.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.34	0.00	138.2	48.2	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	16.93	0.00	48.3	138.3	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	16.93	0.00	228.1	228.1	5.00	3.00	0.00	0	0	0
Totals:										18	295	313

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.12	33.20	10.67	14.35	7.32	11.49	1.60e+6	60.00	57.00	34.17	36,601	365.48	9.52

Pole Num:	162W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.40	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.61	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024686 Deg	Longitude:	-84.461083 Deg	Elevation:	911.248881109173		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.3	137.0
Groundline	37.3	137.0
Vertical	2.4	302.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,275	133.5
Groundline	32,275	133.5
GL Allowable	88,023	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	4.1	122.6		0.0	137.0	11.3	310.0
? EHS 3/8 (Down)			30.3	0.0	137.0	17.9	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 133.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	523	41.1	16,799	52.1	19.1	1,301	478	4	1,306	19.2
Comms	466	36.6	8,925	27.7	10.1	691	853	8	699	10.3
GuyBraces	1	0.1	44	0.1	0.1	3	10	0	3	0.1
PowerEquipments	55	4.3	1,819	5.6	2.1	141	1,216	11	152	2.2
Pole	202	15.9	3,718	11.5	4.2	288	2,084	20	308	4.5
Crossarms	1	0.1	49	0.2	0.1	4	95	1	5	0.1
Streetlights	20	1.6	753	2.3	0.9	58	86	1	59	0.9
Insulators	5	0.4	167	0.5	0.2	13	74	1	14	0.2
Pole Load	1,273	100.0	32,275	100.0	36.7	2,500	4,895	46	2,546	37.4
Pole Reserve Capacity			55,748		63.3	4,300			4,254	62.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 133.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	604	47.5	19,588	60.7	22.3	1,517	1,834	17	1,535	22.6
Unknown, COMMUNICATION	466	36.6	8,920	27.6	10.1	691	882	8	699	10.3
Pole	202	15.9	3,718	11.5	4.2	288	2,084	20	308	4.5
<Undefined>	1	0.1	49	0.2	0.1	4	95	1	5	0.1
Totals:	1,273	100.0	32,275	100.0	36.7	2,500	4,895	46	2,546	37.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.13	5.43	0.3980	0.28	0.145	121.5	48.1	121.5	2,128	8,179	1	1,178	9,358
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.13	5.43	0.3980	0.27	0.145	120.2	227.6	120.2	2,128	-7,285	1	1,167	-6,117
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.13	45.33	0.3980	0.28	0.145	121.5	48.1	121.5	2,128	8,179	151	1,178	9,508
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.13	45.33	0.3980	0.27	0.145	120.2	227.6	120.2	2,128	-7,285	149	1,167	-5,969

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.13	45.33	0.3980	0.28	0.145	121.5	48.1	121.5	2,128	8,179	-148	1,178	9,209
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.13	45.33	0.3980	0.27	0.145	120.2	227.6	120.2	2,128	-7,285	-147	1,167	-6,265
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.34	6.65	0.3980	0.28	0.145	121.5	48.1	121.5	2,128	6,240	-22	899	7,116
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.34	6.65	0.3980	0.27	0.145	120.2	227.6	120.2	2,128	-5,558	-22	890	-4,690
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.75	6.68	0.3980	0.28	0.145	121.5	48.1	121.5	2,128	6,110	-22	880	6,968
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.75	6.68	0.3980	0.27	0.145	120.2	227.6	120.2	2,128	-5,442	-22	872	-4,593
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.10	6.72	0.3980	0.28	0.145	121.5	48.1	121.5	2,128	5,968	-22	860	6,806
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.10	6.72	0.3980	0.27	0.145	120.2	227.6	120.2	2,128	-5,316	-22	851	-4,487
Totals:												4,685	-124	12,285	16,846

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.51	7.11	1.3300	1.66	0.337	121.5	48.1	121.5	925	1,963	-57	1,325	3,232
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.51	7.11	1.3300	1.64	0.337	120.2	227.6	120.3	925	-1,748	-56	1,313	-492
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.54	7.17	1.5000	1.94	0.900	121.5	48.1	121.5	2,000	4,043	99	1,380	5,523
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.54	7.17	1.5000	1.91	0.900	120.2	227.6	120.3	2,000	-3,601	98	1,367	-2,136
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.52	7.23	1.5000	1.94	0.900	121.5	48.1	121.5	2,000	3,833	-100	1,308	5,041
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.52	7.23	1.5000	1.91	0.900	120.2	227.6	120.3	2,000	-3,414	-99	1,296	-2,217
		COMMUNICATION													
Totals:											1,076	-114	7,989	8,950	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	32.29	21.92	45.0	45.0	640.00	47.00	--	24.00	--	57	1,767	1,824
Totals:												57	1,767	1,824

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	36.31	5.43	48.1	48.1	50.00	4.50	3.50	96.00	3	46	50
Totals:										3	46	50

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.14	4.28	140.0	140.0	45.00	24.00	20.00	3.00	36.00	237	517	755
Totals:												237	517	755

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.50	0.00	48.1	0.0	6.00	3.50	7.50	0	47	47	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.50	45.00	131.2	0.0	6.00	3.50	7.50	43	47	90	
Pin	Pin Insulator - 5 kV	KU, UTILITY	36.50	-45.00	325.0	0.0	6.00	3.50	7.50	-42	47	4	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.34	0.00	317.8	47.8	2.00	3.00	3.19	-2	13	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.75	0.00	317.8	47.8	2.00	3.00	3.19	-2	13	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.10	0.00	317.8	47.8	2.00	3.00	3.19	-2	13	10	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.51	0.00	317.8	47.8	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.54	0.00	137.8	47.8	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.52	0.00	317.8	47.8	5.00	3.00	0.00	-6	0	-6	
Totals:											-11	179	168

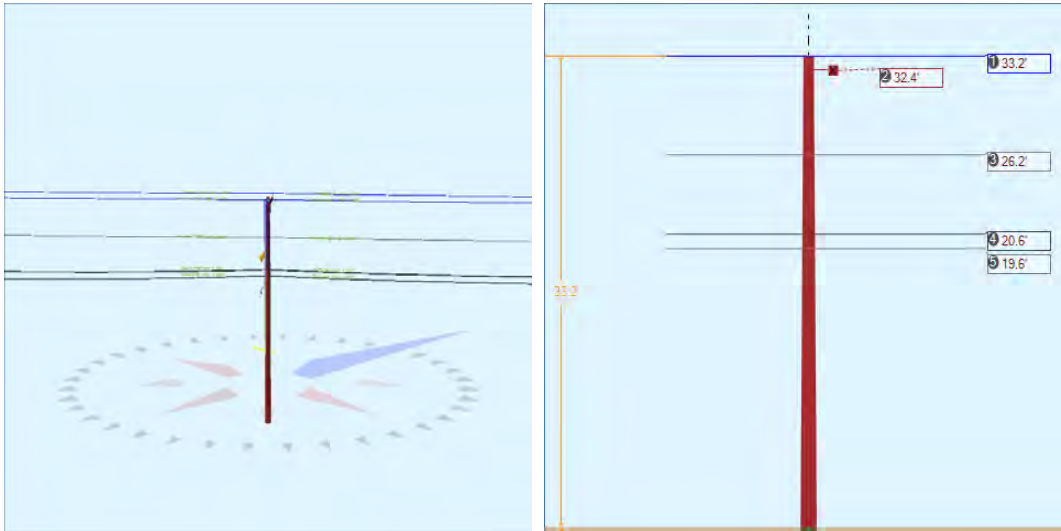
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	30.28	0.00	4.08	0.375	75.00	122.6	82.1	0.273	29.01	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,480	2,255	0	0	0	0	44	
Totals:											0	0	0	44

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	4.08	122.6	20,000	1.00	20,000	2,255	0	11.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.19	33.68	10.69	10.43	7.32	11.66	1.60e+6	60.00	57.00	36.60	204,119	2039.50	41.67

Pole Num:	163W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.83	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.68	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025466 Deg	Longitude:	-84.460022 Deg	Elevation:	882.961446439488		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.3	0.0
Groundline	21.3	0.0
Vertical	6.9	18.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,009	138.8
Groundline	17,009	138.8
GL Allowable	81,528	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 138.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	234	32.0	7,245	42.6	8.9	605	266	3	608	8.9
Comms	311	42.6	6,565	38.6	8.1	549	580	6	554	8.2
Pole	181	24.8	3,050	17.9	3.7	255	1,827	18	273	4.0
Crossarms	1	0.2	40	0.2	0.1	3	95	1	4	0.1
Insulators	3	0.4	109	0.6	0.1	9	46	0	10	0.1
Pole Load	729	100.0	17,009	100.0	20.9	1,421	2,814	28	1,449	21.3
Pole Reserve Capacity			64,519		79.1	5,379			5,351	78.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 138.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	383	52.6	10,492	61.7	12.9	877	513	5	882	13.0
Unknown, COMMUNICATION	164	22.5	3,427	20.2	4.2	286	378	4	290	4.3
Pole	181	24.8	3,050	17.9	3.7	255	1,827	18	273	4.0
<Undefined>	1	0.2	40	0.2	0.1	3	95	1	4	0.1
Totals:	729	100.0	17,009	100.0	20.9	1,421	2,814	28	1,449	21.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.17	45.33	0.3980	0.24	0.145	112.3	49.3	112.3	2,128	672	139	976	1,786
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.17	45.33	0.3980	0.45	0.145	156.6	229.1	156.6	2,128	-425	194	1,362	1,130
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.17	45.33	0.3980	0.24	0.145	112.3	49.3	112.3	2,128	672	-138	976	1,509
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.17	45.33	0.3980	0.45	0.145	156.6	229.1	156.6	2,128	-425	-193	1,362	743
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.22	6.58	0.3980	0.24	0.145	112.3	49.3	112.3	2,128	531	20	771	1,322
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.22	6.58	0.3980	0.45	0.145	156.6	229.1	156.6	2,128	-336	28	1,076	768
										Totals:	688	49	6,521	7,258	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	KU, UTILITY	20.63	6.92	1.3300	1.51	0.337	112.3	49.3	112.3	925	182	51	1,236	1,469
CATV	CATV 1.0	KU, UTILITY	20.63	6.92	1.3300	2.27	0.337	156.6	229.1	156.7	925	-115	71	1,725	1,681
Telco	TELE 1.5	Unknown, COMMUNICATION	19.61	6.99	1.5000	1.76	0.900	112.3	49.3	112.3	2,000	373	90	1,284	1,747
Telco	TELE 1.5	Unknown, COMMUNICATION	19.61	6.99	1.5000	2.67	0.900	156.6	229.1	156.7	2,000	-236	125	1,792	1,681
Totals:											204	337	6,037	6,577	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		32.36	5.46	49.3	49.3	50.00	4.50	3.50	96.00	0	40	40	
Totals:											0	40	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.55	45.00	132.4	0.0	6.00	3.50	7.50	43	42	84	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.55	-45.00	326.2	0.0	6.00	3.50	7.50	-43	42	-1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.22	0.00	139.2	49.2	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	KU, UTILITY	20.63	0.00	139.2	49.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.61	0.00	139.2	49.2	5.00	3.00	0.00	6	0	6	
Totals:											13	96	109

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.78	33.02	10.60	12.05	7.32	11.36	1.60e+6	60.00	57.00	33.17	41,020	407.82	14.49

38' 5" - 139W - 26981-2070-02

30' 6" - Lowest Power

23' - Proposed Metronet

20' - Highest Tel Cable

4' - Base offset

Base

28' 5" - 140W - NT

23' 1" - Lowest Power

19' 2" - Proposed Metronet

17' - Highest Tel Cable

4' - Base offset

Base

34' 11" - 141W - NT

16' 9" - Base offset

Base

25' 1" - Lowest Power

20' 2" - Proposed Metronet

17' 9" - Highest Tel Drop

17' 6" - Highest Tel Cable

35' 8" - 142W - NT

24' 7" - Lowest Power

20' 6" - Proposed Metronet

18' 8" - Highest Tel Cable

17' 10" - Highest Tel Drop

4' - Base offset

Base

28' 9" - 143W - NT

20' 6" - Lowest Power

17' 2" - Proposed Metronet

16' 1" - Highest Tel Drop

15' 10" - Highest Tel Cable

4' - Base offset

Base

34' 8" - 144W - NT

29' 1" - Lowest Power

20' 2" - Proposed Metronet

18' 8" - Highest Tel Drop

18' 4" - Highest Tel Cable

4' - Base offset

Base

28' 9" - 145W - NT

19' 10" - Lowest Power

16' 6" - Proposed Metronet

15' 8" - Highest Tel Drop

15' 5" - Highest Tel Cable

4' - Base offset

Base

35' 2" - 146W - NT

24' 7" - Lowest Power

18' 11" - Proposed Metronet

16' 11" - Highest Tel Drop

16' 6" - Highest Tel Cable

4' - Base offset

Base

34' 3" - 147W- NT

24' 4" - Lowest Power

19' 8" - Proposed Metronet

18' 3" - Highest Tel Drop

18' 1" - Highest Tel Cable

4' - Base offset

Base

WIN5781

32' 5" - 148W - NT

23' 5" - Lowest Power

18' 6" - Proposed Metronet

16' 7" - Highest Tel Drop

16' 2" - Highest Tel Cable

4' - Base offset

Base

34' 2" - 149W - NT

23' - Lowest Power

21' 9" - Highest Tel Cable

19' 8" - Proposed Metronet

4' - Base offset

Base

35' 2" - 150W - NT

25' 11" - Lowest Power

22' 7" - Proposed Metronet

21' 10" - Highest Tel Cable

21' 5" - Highest Tel Drop

4' - Base offset

Base

37' 4" - 151W - NT

29' 2" - Lowest Power

25' 10" - Proposed Metronet

25' 6" - Proposed Metronet

23' 8" - Highest Tel Cable

4' - Base offset

Base

WIN5785

35' 6" - 152W - NT

35' 6" - Base offset

25' 2" - Lowest Power

21' 10" - Proposed Metronet

20' 8" - Highest Tel Cable

Base

34' 10" - 153W - NT

25' 3" - Lowest Power

20' 10" - Proposed Metronet

18' 10" - Highest Tel Cable

4' - Base offset

Base

34' 1" - 154W - NT

27' - Lowest Power

22' 11" - Proposed Metronet

20' 11" - Highest Tel Drop

20' 10" - Highest Tel Cable

4' - Base offset

Base

33' 8" - 155W - NT

24' 4" - Lowest Power

21' - Proposed Metronet

20' 5" - Highest Tel Drop

20' 1" - Highest Tel Cable

6' - Base offset

Base

33' 8" - 156W - NT

26' - Lowest Power

22' 8" - Proposed Metronet

21' 5" - Highest Tel Drop

21' 2" - Highest Tel Cable

4' - Base offset

Base

34' 9" - 157W - NT

23' 4" - Lowest Power

20' 8" - Highest Tel Drop

20' 6" - Highest Tel Cable

20' - Proposed Metronet

6' - Base offset

Base

33' 11" - 158W - NT

27' 5" - Lowest Power

20' 4" - Proposed Metronet

19' 5" - Highest Tel Drop

18' 7" - Highest Tel Cable

6' - Base offset

Base

33' - 159W - NT

33' - Base offset

23' 11" - Lowest Power

19' 7" - Proposed Metronet

17' 2" - Highest Tel Drop

17' - Highest Tel Cable

Base

33' 10" - 160W - NT

25' 4" - Lowest Power

21' 4" - Proposed Metronet

19' - Highest Tel Drop

18' 10" - Highest Tel Cable

4' - Base offset

Base

34' 2" - 161W - NT

21' 3" - Lowest Power

20' 2" - Proposed Metronet

17' - Highest Tel Drop

16' 11" - Highest Tel Cable

4' - Base offset

Base

36' 7" - 162W - NT

26' 2" - Lowest Power

21' 6" - Proposed Metronet

18' 11" - Highest Tel Drop

18' 6" - Highest Tel Cable

6' - Base offset

Base

33' 2" - 163W - NT

26' 3" - Lowest Power

21' 8" - Proposed Metronet

19' 7" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 1:34 PM
To: Windstream Jointuse
Cc: Permits; Hays, Sarah K
Subject: LX135-05W
Attachments: LX135-05 POLE MAP.PDF; LX135-05W - WINDSTREAM POLE INVENTORY REPORT.PDF; LX135-05W - METRONET POLE INVENTORY REPORT.XLSX; Pole Photos.pdf; O-Calcs.pdf; Map Key.pdf

Good Morning,

Please see attached for proposal titled LX135-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur

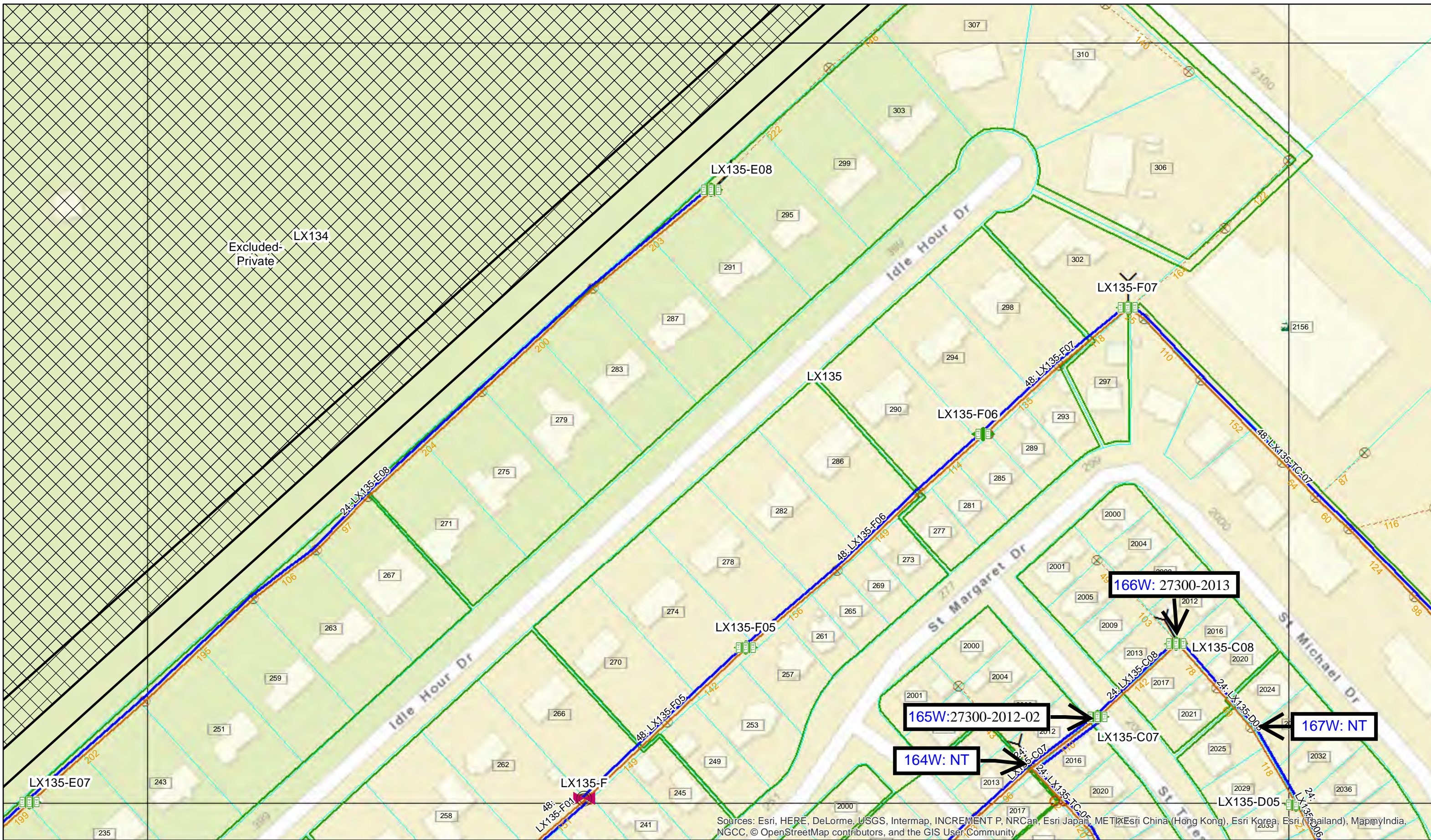
Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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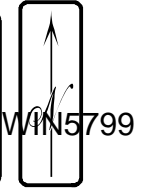
LXAX34
 PROJECT NUMBER:
 LTXNXY.00437.CB
 DATE 12/12/2017
 USER NAME: argjis
 DESIGN ENG

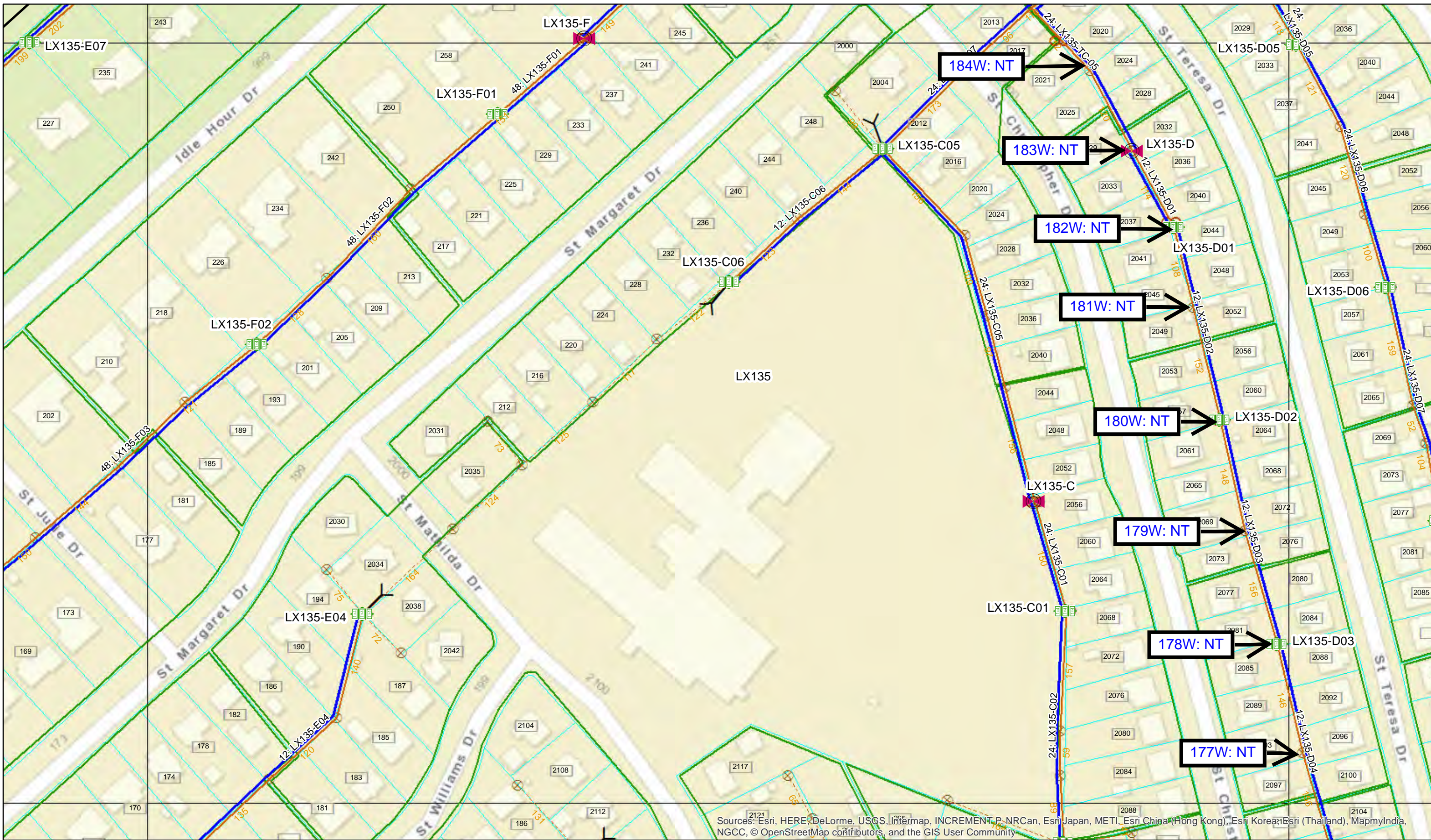
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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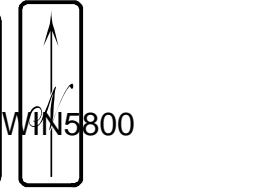
LXAW34
 PROJECT NUMBER:
 LXTNXY00457.CB

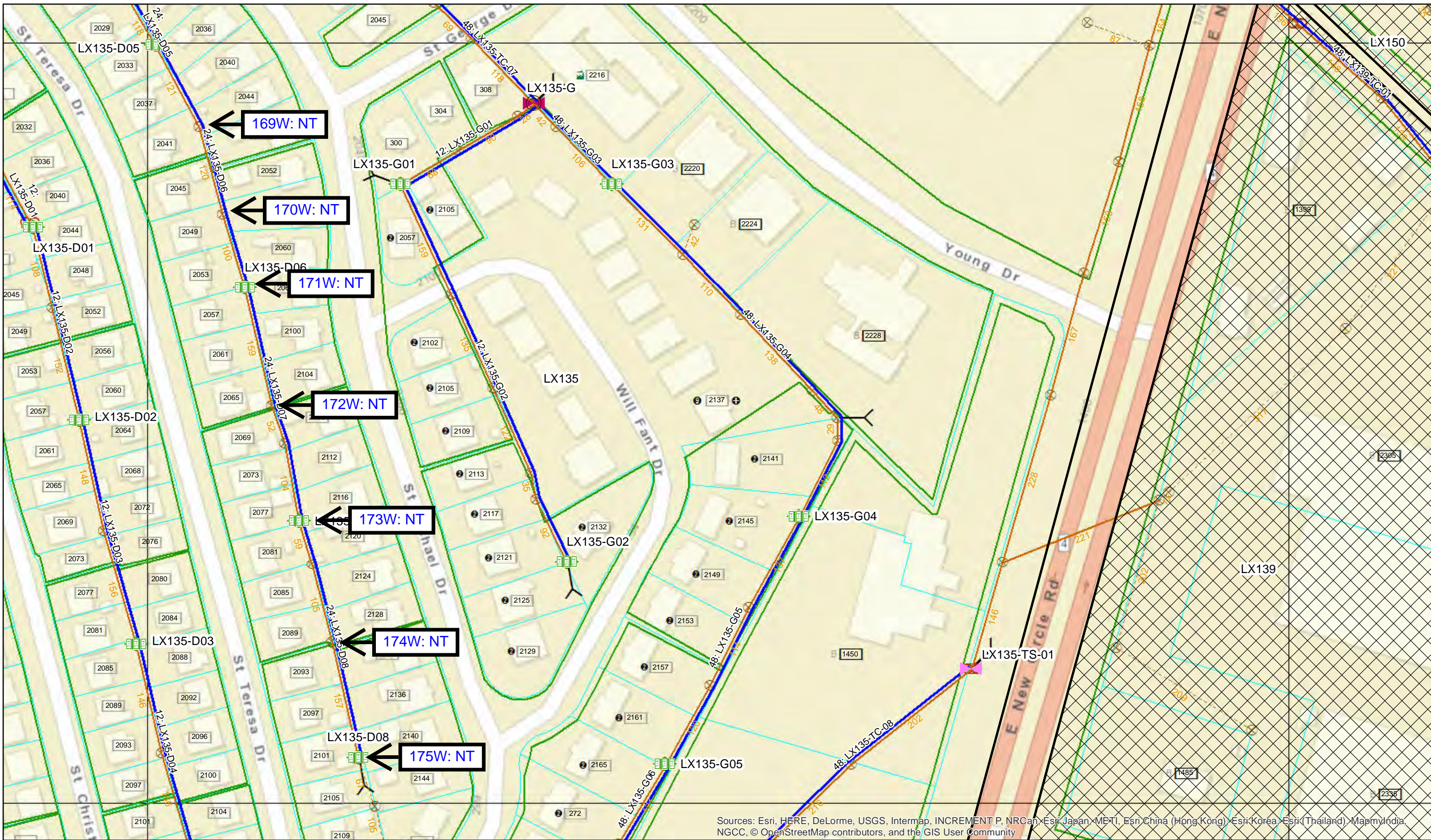
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAW35
 PROJECT NUMBER:
 LXTNXY.00457.CB
 DATE: 12/12/2017
 USER NAME: argis
 DESIGN ENG

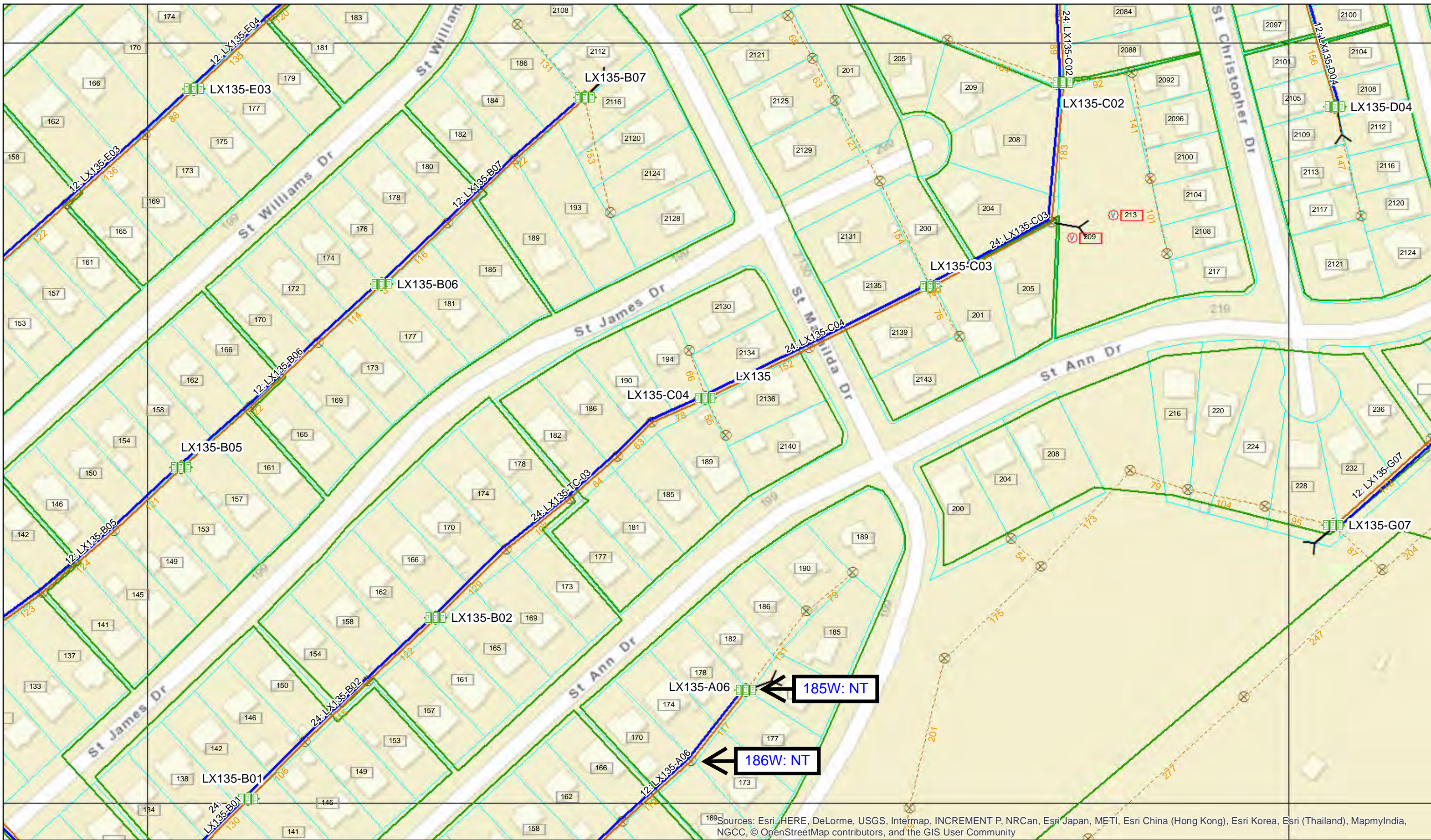
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAV/34
 PROJECT NUMBER:
 LXTNXY00437.CB

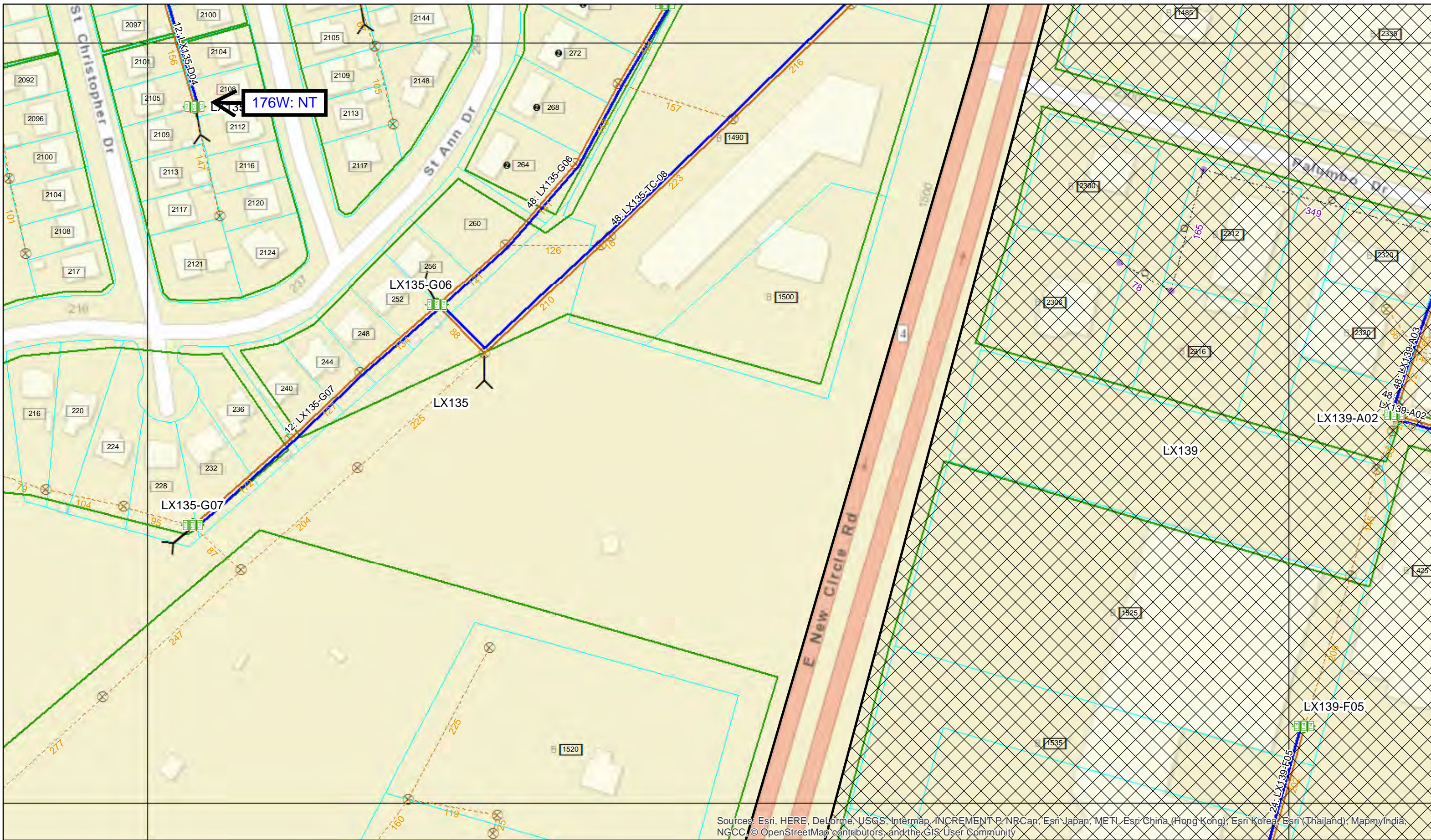
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

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LXAV/35
 PROJECT NUMBER:
 LXTNXY.00437.CB
 DATE 12/12/2017
 USER NAME: argis
 DESIGN ENG

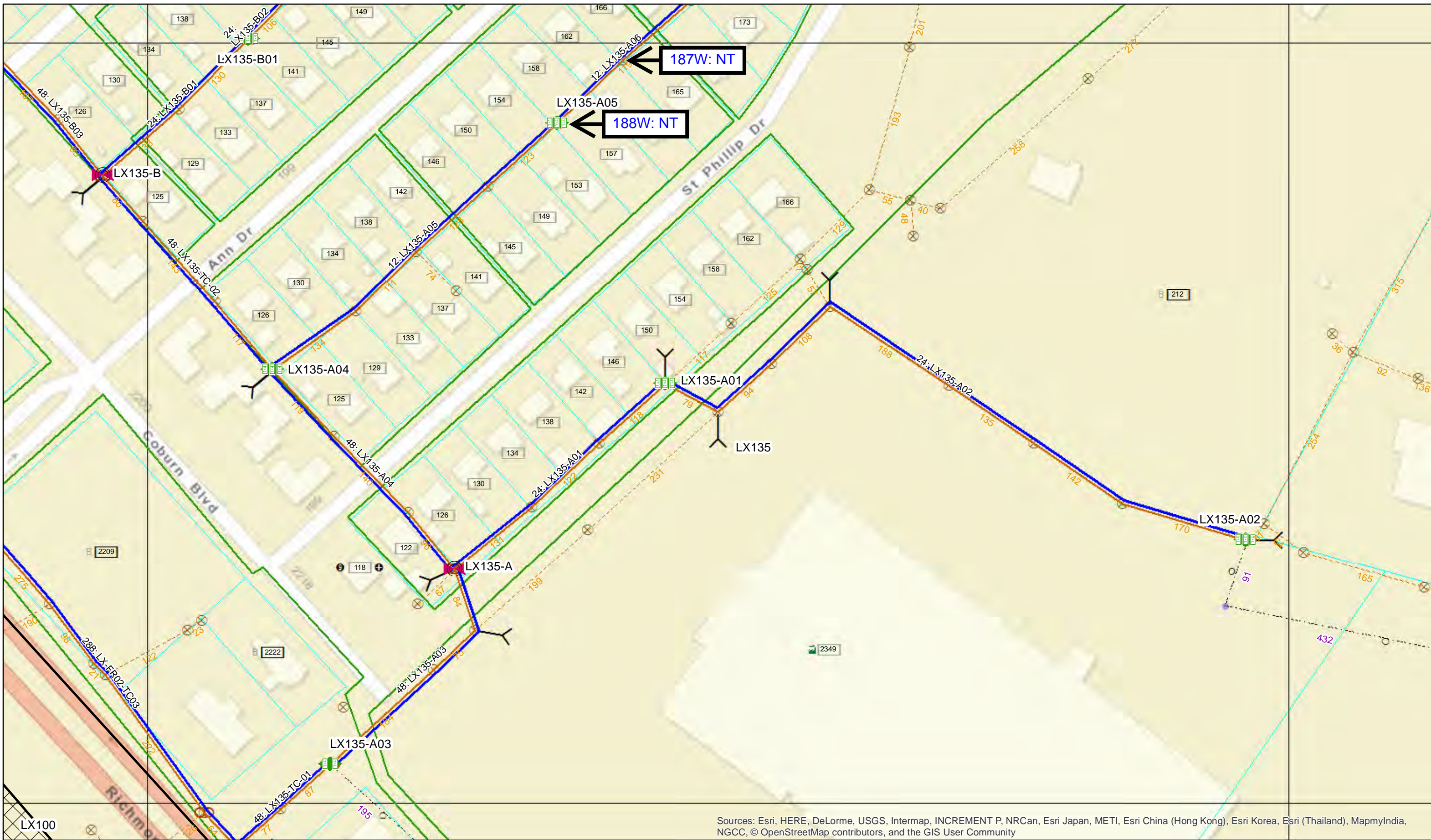
STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

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LXAU34

DESIGN ENG
 USER NAME: arqjls
 DATE: 12/12/2017
 PROJECT NUMBER:
 LXTNXY.00437.CB

STAKING GRID DRAWING

ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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WIN5804

LX135-05W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		164W NT	40/3	WS	2=Comms	
KU	0	164W NT		WS		
Windstream	25	164W NT		WS		
Total Pole Count	25	164W NT		WS		
Total Needing Make Ready	12	164W NT		WS		
		164W NT		WS		
		164W NT		WS		
		164W NT		WS		
		164W NT		WS		
		164W NT		WS		
		165W 27300-2012-02	45/3	WS	2=Comms	
		165W 27300-2012-02		WS		
		165W 27300-2012-02		WS		
		165W 27300-2012-02		WS		
		165W 27300-2012-02		WS		
		165W 27300-2012-02		WS		
		165W 27300-2012-02		WS		
		166W 27300-2013	40/3	WS	1=None	
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		166W 27300-2013		WS		
		167W NT	40/3	WS	1=None	
		167W NT		WS		
		167W NT		WS		
		167W NT		WS		
		167W NT		WS		
		167W NT		WS		

167W NT		WS	
167W NT		WS	
168W NT	40/3	WS	1=None
168W NT		WS	
168W NT		WS	
168W NT		WS	
168W NT		WS	
168W NT		WS	
168W NT		WS	
168W NT		WS	
169W NT	40/3	WS	1=None
169W NT		WS	
169W NT		WS	
169W NT		WS	
169W NT		WS	
169W NT		WS	
169W NT		WS	
169W NT		WS	
170W NT	40/3	WS	1=None
170W NT		WS	
170W NT		WS	
170W NT		WS	
170W NT		WS	
170W NT		WS	
170W NT		WS	
170W NT		WS	
171W NT	40/3	WS	1=None
171W NT		WS	
171W NT		WS	
171W NT		WS	
171W NT		WS	
171W NT		WS	
171W NT		WS	
171W NT		WS	
171W NT		WS	
172W NT	40/3	WS	2=Comms
172W NT		WS	
172W NT		WS	
172W NT		WS	
172W NT		WS	
172W NT		WS	
172W NT		WS	
172W NT		WS	

178W NT	40/3	WS	1=None
178W NT		WS	
178W NT		WS	
178W NT		WS	
178W NT		WS	
178W NT		WS	
178W NT		WS	
178W NT		WS	
178W NT		WS	
178W NT		WS	
179W NT	40/3	WS	2=Comms
179W NT		WS	
179W NT		WS	
179W NT		WS	
179W NT		WS	
179W NT		WS	
179W NT		WS	
179W NT		WS	
179W NT		WS	
180W NT	40/3	WS	2=Comms
180W NT		WS	
180W NT		WS	
180W NT		WS	
180W NT		WS	
180W NT		WS	
180W NT		WS	
180W NT		WS	
180W NT		WS	
181W NT	40/3	WS	1=None
181W NT		WS	
181W NT		WS	
181W NT		WS	
181W NT		WS	
181W NT		WS	
181W NT		WS	
181W NT		WS	
182W NT	40/3	WS	2=Comms
182W NT		WS	
182W NT		WS	
182W NT		WS	
182W NT		WS	
182W NT		WS	
182W NT		WS	
182W NT		WS	
183W NT	40/3	WS	2=Comms
183W NT		WS	

183W NT		WS	
183W NT		WS	
183W NT		WS	
183W NT		WS	
183W NT		WS	
183W NT		WS	
184W NT	40/3	WS	2=Comms
184W NT		WS	
184W NT		WS	
184W NT		WS	
184W NT		WS	
184W NT		WS	
184W NT		WS	
184W NT		WS	
184W NT		WS	
184W NT		WS	
185W NT	35/4	WS	1=None
185W NT		WS	
185W NT		WS	
185W NT		WS	
185W NT		WS	
185W NT		WS	
185W NT		WS	
185W NT		WS	
185W NT		WS	
185W NT		WS	
186W NT	35/4	WS	2=Comms
186W NT		WS	
186W NT		WS	
186W NT		WS	
186W NT		WS	
186W NT		WS	
186W NT		WS	
186W NT		WS	
186W NT		WS	
186W NT		WS	
186W NT		WS	
187W NT	40/3	WS	1=None
187W NT		WS	
187W NT		WS	
187W NT		WS	
187W NT		WS	
187W NT		WS	
187W NT		WS	
187W NT		WS	
187W NT		WS	
187W NT		WS	

Owner	1=None	2=Comms					
by:	4=Comms&Elec	5=Simple PCO					
	6=Complex PCO						
			Make Ready Remedies				
				Pole Capacity Utilization %			
					Nearest Street Name		
						Latitude	
							Longitude
							Existing

	2013 ST CHRISTOPHEF	38.02568	-84.45975	KU
		38.02568	-84.45975	KU
		38.02568	-84.45975	KU
		38.02568	-84.45975	KU
		38.02568	-84.45975	KU
		38.02568	-84.45975	KU
		38.02568	-84.45975	Metronet
Lower Charter		38.02568	-84.45975	Charter
Lower Charter		38.02568	-84.45975	Charter
Lower Windstream		38.02568	-84.45975	Windstream
	2012 ST TERESA DR	38.02586	-84.45944	KU
		38.02586	-84.45944	KU
		38.02586	-84.45944	KU
		38.02586	-84.45944	KU
		38.02586	-84.45944	Metronet
Lower Charter		38.02586	-84.45944	Charter
Lower Windstream		38.02586	-84.45944	Windstream
	64.90 2016 ST MICHAEL DR	38.02614	-84.45907	KU
		38.02614	-84.45907	KU
		38.02614	-84.45907	KU
		38.02614	-84.45907	KU
		38.02614	-84.45907	KU
		38.02614	-84.45907	KU
		38.02614	-84.45907	Metronet
		38.02614	-84.45907	Metronet
		38.02614	-84.45907	Charter
Attach to new pole		38.02614	-84.45907	Windstream
	2024 ST MICHAEL DR	38.02580	-84.45870	KU
		38.02580	-84.45870	KU
		38.02580	-84.45870	KU
		38.02580	-84.45870	KU
		38.02580	-84.45870	KU
		38.02580	-84.45870	Metronet

		38.02580	-84.45870	Charter
		38.02580	-84.45870	Windstream
	2033 ST TERESA DR	38.02559	-84.45855	KU
		38.02559	-84.45855	KU
		38.02559	-84.45855	KU
		38.02559	-84.45855	KU
		38.02559	-84.45855	KU
		38.02559	-84.45855	Metronet
		38.02559	-84.45855	Charter
		38.02559	-84.45855	Windstream
Trees blocking midspan	2041 ST TERESA DR	38.02524	-84.45831	KU
		38.02524	-84.45831	KU
		38.02524	-84.45831	KU
		38.02524	-84.45831	KU
		38.02524	-84.45831	KU
		38.02524	-84.45831	Metronet
		38.02524	-84.45831	Charter
		38.02524	-84.45831	Windstream
	2049 ST TERESA DR	38.02492	-84.45822	KU
		38.02492	-84.45822	KU
		38.02492	-84.45822	KU
		38.02492	-84.45822	KU
		38.02492	-84.45822	KU
		38.02492	-84.45822	Metronet
		38.02492	-84.45822	Charter
		38.02492	-84.45822	Windstream
	2057 ST TERESA DR	38.02468	-84.45812	KU
		38.02468	-84.45812	KU
		38.02468	-84.45812	KU
		38.02468	-84.45812	KU
		38.02468	-84.45812	KU
		38.02468	-84.45812	KU
		38.02468	-84.45812	Metronet
		38.02468	-84.45812	Charter
		38.02468	-84.45812	Windstream
	2065 ST TERESA DR	38.02421	-84.45799	KU
		38.02421	-84.45799	KU
		38.02421	-84.45799	KU
		38.02421	-84.45799	KU
		38.02421	-84.45799	KU
		38.02421	-84.45799	Metronet
Lower Charter		38.02421	-84.45799	Charter
Lower Windstream		38.02421	-84.45799	Windstream

Trees blocking midspan	2077 ST TERESA DR	38.02382	-84.45786	KU
		38.02382	-84.45786	KU
		38.02382	-84.45786	KU
		38.02382	-84.45786	KU
		38.02382	-84.45786	KU
		38.02382	-84.45786	KU
		38.02382	-84.45786	Metronet
		38.02382	-84.45786	Charter
		38.02382	-84.45786	Windstream
	2089 ST TERESA DR	38.02338	-84.45772	KU
		38.02338	-84.45772	KU
		38.02338	-84.45772	KU
		38.02338	-84.45772	KU
		38.02338	-84.45772	KU
		38.02338	-84.45772	Metronet
Lower Charter		38.02338	-84.45772	Charter
Lower Windstream		38.02338	-84.45772	Windstream
	2101 ST TERESA DR	38.02300	-84.45760	KU
		38.02300	-84.45760	KU
		38.02300	-84.45760	KU
		38.02300	-84.45760	KU
		38.02300	-84.45760	Metronet
		38.02300	-84.45760	Charter
		38.02300	-84.45760	Windstream
	2108 ST TERESA DR	38.02257	-84.45837	KU
		38.02257	-84.45837	KU
		38.02257	-84.45837	KU
		38.02257	-84.45837	KU
		38.02257	-84.45837	KU
		38.02257	-84.45837	KU
		38.02257	-84.45837	Metronet
Lower Charter		38.02257	-84.45837	Charter
Lower Windstream		38.02257	-84.45837	Windstream
	2093 ST CHRISTOPHEF	38.02296	-84.45849	KU
		38.02296	-84.45849	KU
		38.02296	-84.45849	KU
		38.02296	-84.45849	KU
		38.02296	-84.45849	KU
		38.02296	-84.45849	KU
		38.02296	-84.45849	Metronet
Lower Charter		38.02296	-84.45849	Charter
Lower Charter		38.02296	-84.45849	Charter
Lower Windstream		38.02296	-84.45849	Windstream

	2081 ST CHRISTOPHEF	38.02338	-84.45863	KU
		38.02338	-84.45863	KU
		38.02338	-84.45863	KU
		38.02338	-84.45863	KU
		38.02338	-84.45863	KU
		38.02338	-84.45863	KU
		38.02338	-84.45863	Metronet
		38.02338	-84.45863	Charter
		38.02338	-84.45863	Windstream
	2069 ST CHRISTOPHEF	38.02375	-84.45876	KU
		38.02375	-84.45876	KU
		38.02375	-84.45876	KU
		38.02375	-84.45876	KU
		38.02375	-84.45876	KU
		38.02375	-84.45876	Metronet
Lower Charter		38.02375	-84.45876	Charter
Lower Windstream		38.02375	-84.45876	Windstream
	2061 ST CHRISTOPHEF	38.02417	-84.45889	KU
		38.02417	-84.45889	KU
		38.02417	-84.45889	KU
		38.02417	-84.45889	KU
		38.02417	-84.45889	KU
		38.02417	-84.45889	Metronet
Lower Charter		38.02417	-84.45889	Charter
Lower Windstream		38.02417	-84.45889	Windstream
Trees blocking midspan	2052 ST TERESA DR	38.02459	-84.45901	KU
		38.02459	-84.45901	KU
		38.02459	-84.45901	KU
		38.02459	-84.45901	KU
		38.02459	-84.45901	Metronet
Attach to pole		38.02459	-84.45901	Charter
Attach to pole		38.02459	-84.45901	Windstream
	2044 ST TERESA DR	38.02487	-84.45912	KU
		38.02487	-84.45912	KU
		38.02487	-84.45912	KU
		38.02487	-84.45912	KU
		38.02487	-84.45912	Metronet
Lower Charter		38.02487	-84.45912	Charter
Lower Windstream		38.02487	-84.45912	Windstream
	2029 ST CHRISTOPHEF	38.02515	-84.45927	KU
		38.02515	-84.45927	KU

	38.02515	-84.45927	KU
	38.02515	-84.45927	KU
	38.02515	-84.45927	KU
	38.02515	-84.45927	Metronet
Lower Charter	38.02515	-84.45927	Charter
Lower Windstream	38.02515	-84.45927	Windstream
2024 ST TERESA DR	38.02544	-84.45948	KU
	38.02544	-84.45948	KU
	38.02544	-84.45948	KU
	38.02544	-84.45948	KU
	38.02544	-84.45948	KU
	38.02544	-84.45948	KU
	38.02544	-84.45948	Metronet
Lower Charter	38.02544	-84.45948	Charter
Lower Windstream	38.02544	-84.45948	Windstream
181 ST PHILLIP DR	38.02052	-84.46103	KU
	38.02052	-84.46103	KU
	38.02052	-84.46103	KU
	38.02052	-84.46103	KU
	38.02052	-84.46103	KU
	38.02052	-84.46103	KU
	38.02052	-84.46103	Metronet
	38.02052	-84.46103	Charter
	38.02052	-84.46103	Windstream
173 ST PHILLIP DR	38.02022	-84.46133	KU
	38.02022	-84.46133	KU
	38.02022	-84.46133	KU
	38.02022	-84.46133	KU
	38.02022	-84.46133	KU
	38.02022	-84.46133	KU
	38.02022	-84.46133	KU
	38.02022	-84.46133	Metronet
Lower Charter	38.02022	-84.46133	Charter
Lower Windstream	38.02022	-84.46133	Windstream
166 ST ANN DR	38.02000	-84.46159	KU
	38.02000	-84.46159	KU
	38.02000	-84.46159	KU
	38.02000	-84.46159	KU
	38.02000	-84.46159	KU
	38.02000	-84.46159	KU
	38.02000	-84.46159	KU
	38.02000	-84.46159	Metronet
	38.02000	-84.46159	Charter

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped	A: DOT Tr	Y/N	Y/N
--------------------------------	---------	----------------------------	----------------------------	-----------------------------	------------------------------	-----------------------------------	--	------------------	-------------------------------------	--------------------------------	-----------	-----	-----

Primary	32'9"			N	N							D: Pedestrian Only 9.5'
Primary	31'7"			N	N							
Neutral	26'11"			N	N							
Neutral	26'3"			N	N							
Secondary	25'8"			N	N							
Secondary	24'11"			N	N							
Communication		21'7"		N	N							
Communication	21'7"	20'7"	63	N	N							
Communication	20'7"	19'7"		N	N							
Communication	19'10"	18'7"	18'0"	N	N							
Primary	34'8"			N	N							B: Residential/Over Driveways
Neutral	27'9"			N	N							
Secondary	26'6"			N	N							
Secondary Riser	25'5"			N	N							
Communication		22'1"		N	N							
Communication	22'1"	21'1"	52	N	N							
Communication	20'11"	20'1"	18'3"	N	N							
Primary	33'4"			N	N							D: Pedestrian Only 9.5'
Primary	31'7"			N	N							
Neutral	26'4"			N	N							
Secondary	25'10"			N	N							
Secondary	24'10"			N	N							
Secondary	24'5"			N	N							
Communication		21'1"		N	N							
Communication		20'9"		N	N							
Communication	20'2"		44	N	N							
Communication		19'2"	16'4"	N	N							
Primary	32'6"			N	N							D: Pedestrian Only 9.5'
Transformer	25'6"			N	N							
Neutral	24'11"			N	N							
Secondary	24'3"			N	N							
Secondary	23'5"			N	N							
Communication		19'9"		N	N							

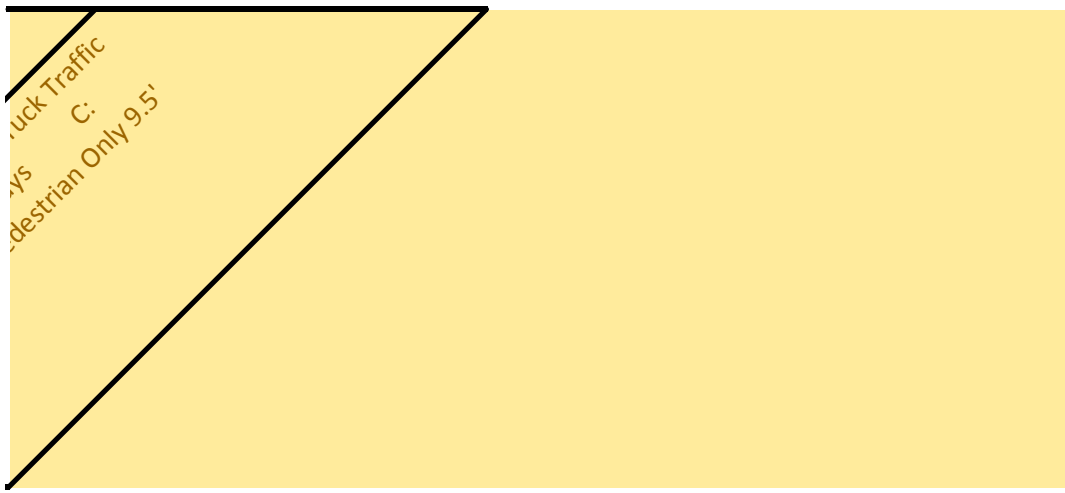
Communication	18'9"		68	N	N
Communication	17'2"	15'5"		N	N
Primary	33'0"			N	N D: Pedestrian Only 9.5'
Secondary	30'2"			N	N
Neutral	29'6"			N	N
Secondary	28'9"			N	N
Secondary	28'1"			N	N
Communication		20'0"		N	N
Communication	19'0"		97	N	N
Communication	17'10"	15'6"		N	N
Primary	32'6"			N	N D: Pedestrian Only 9.5'
Secondary	29'10"			N	N
Neutral	29'5"			N	N
Secondary	28'8"			N	N
Secondary	28'1"			N	N
Communication		21'7"		N	N
Communication	20'7"		UNK	N	N
Communication	19'6"	UNK		N	N
Primary	33'3"			N	N D: Pedestrian Only 9.5'
Transformer	27'4"			N	N
Neutral	26'1"			N	N
Secondary	25'3"			N	N
Secondary	24'6"			N	N
Communication		20'0"		N	N
Communication	19'0"		70	N	N
Communication	17'9"	16'1"		N	N
Primary	32'0"			N	N D: Pedestrian Only 9.5'
Secondary Riser	29'10"			N	N
Secondary	29'0"			N	N
Neutral	28'1"			N	N
Secondary	27'4"			N	N
Secondary	26'7"			N	N
Communication		20'3"		N	N
Communication	19'3"		76	N	N
Communication	17'10"	14'10"		N	N
Primary	32'7"			Y	N D: Pedestrian Only 9.5'
Neutral	29'6"			Y	N
Neutral	28'10"			Y	N
Secondary	28'1"			Y	N
Transformer	22'6"			Y	N
Communication		19'2"		Y	N
Communication	20'1"	18'2"	78	Y	N
Communication	19'2"	17'2"	16'5"	Y	N

Primary	32'7"			N	N	D: Pedestrian Only 9.5'
Transformer	26'1"			N	N	
Neutral	25'7"			N	N	
Secondary	24'10"			N	N	
Secondary	24'1"			N	N	
Secondary Riser	23'9"			N	N	
Communication		19'9"		N	N	
Communication	18'9"		UNK	N	N	
Communication	17'7"		UNK	N	N	
Primary	31'6"			N	N	D: Pedestrian Only 9.5'
Transformer	25'11"			N	N	
Neutral	24'9"			N	N	
Secondary	24'1"			N	N	
Secondary	23'4"			N	N	
Communication		20'0"		N	N	
Communication	19'4"	19'0"	35	N	N	
Communication	18'5"	18'0"	17'8"	N	N	
Transformer	33'10"			N	N	D: Pedestrian Only 9.5'
Neutral	28'0"			N	N	
Secondary	27'4"			N	N	
Secondary	26'8"			N	N	
Communication		20'6"		N	N	
Communication	19'6"		65	N	N	
Communication	18'4"		17'9"	N	N	
Primary	33'9"			N	N	D: Pedestrian Only 9.5'
OH Guy	33'1"			N	N	
Transformer	26'11"			N	N	
Neutral	26'0"			N	N	
Secondary	25'2"			N	N	
Secondary	24'5"			N	N	
Communication		21'1"		N	N	
Communication	20'10"	20'1"	31	N	N	
Communication	19'5"	19'1"	17'0"	N	N	
Primary	33'11"			Y	N	D: Pedestrian Only 9.5'
Transformer	27'9"			Y	N	
Secondary	26'11"			Y	N	
Neutral	25'11"			Y	N	
Secondary	25'3"			Y	N	
Secondary	24'7"			Y	N	
Communication		21'1"		Y	N	
Communication	21'1"	20'1"	42	Y	N	
Communication	20'1"	19'1"		Y	N	
Communication	19'7"	18'1"	17'3"	Y	N	

Primary	32'5"			N	N	D: Pedestrian Only 9.5'
Secondary	29'8"			N	N	
Neutral	29'3"			N	N	
Secondary	28'8"			N	N	
Secondary Riser	28'0"			N	N	
Secondary	27'8"			N	N	
Communication		21'4"		N	N	
Communication	20'4"		75	N	N	
Communication	19'3"		16'6"	N	N	
Primary	34'4"			N	N	D: Pedestrian Only 9.5'
Transformer	28'3"			N	N	
Neutral	26'0"			N	N	
Secondary	25'3"			N	N	
Secondary	24'6"			N	N	
Communication		21'0"		N	N	
Communication	21'0"	20'0"	52	N	N	
Communication	20'0"	19'0"	16'7"	N	N	
Primary	32'9"			Y	N	D: Pedestrian Only 9.5'
Neutral	29'9"			Y	N	
Secondary	29'0"			Y	N	
Secondary	28'4"			Y	N	
Transformer	22'3"			Y	N	
Communication		18'11"		Y	N	
Communication	20'5"	17'11"	92	Y	N	
Communication	19'5"	16'11"	16'10"	Y	N	
Primary	35'0"			N	N	D: Pedestrian Only 9.5'
Neutral	30'8"			N	N	
Secondary	29'10"			N	N	
Secondary	29'0"			N	N	
Communication		22'5"		N	N	
Communication		21'5"	UNK	N	N	
Communication		20'2"	UNK	N	N	
Primary	32'7"			N	N	D: Pedestrian Only 9.5'
Neutral	25'10"			N	N	
Secondary	25'1"			N	N	
Secondary	24'4"			N	N	
Communication		21'0"		N	N	
Communication	20'7"	20'0"	40	N	N	
Communication	19'7"	19'0"	16'4"	N	N	
Primary	34'3"			Y	N	D: Pedestrian Only 9.5'
Transformer	28'0"			Y	N	

Neutral	26'2"			Y	N	
Secondary	25'5"			Y	N	
Secondary	24'9"			Y	N	
Communication		21'5"		Y	N	
Communication	21'10"	20'5"	55	Y	N	
Communication	20'1"	19'5"	18'3"	Y	N	
Primary	33'7"			Y	N	D: Pedestrian Only 9.5'
Secondary	29'6"			Y	N	
Neutral	28'10"			Y	N	
Secondary	28'0"			Y	N	
Secondary	27'6"			Y	N	
Transformer	21'10"			Y	N	
Communication		18'6"		Y	N	
Communication	19'0"	17'6"	82	Y	N	
Communication	17'10"	16'6"	17'11"	Y	N	
Primary	28'4"			N	N	D: Pedestrian Only 9.5'
Neutral	24'3"			N	N	
Secondary	23'5"			N	N	
Secondary	22'10"			N	N	
Secondary Riser	22'8"			N	N	
OH Guy	22'0"			N	N	
Communication		19'2"		N	N	
Communication	18'2"		43	N	N	
Communication	17'4"		16'2"	N	N	
Primary	30'0"			Y	N	D: Pedestrian Only 9.5'
Down Guy	27'8"			Y	N	
Secondary	26'1"			Y	N	
Neutral	25'1"			Y	N	
Secondary	24'5"			Y	N	
Transformer	21'0"			Y	N	
Down Guy	19'8"			Y	N	
Communication		17'8"		Y	N	
Communication	18'8"	16'8"	55	Y	N	
Communication	17'4"	15'8"	13'11"	Y	N	
Primary	33'8"			N	N	D: Pedestrian Only 9.5'
Transformer	26'11"			N	N	
Secondary	26'1"			N	N	
Neutral	25'5"			N	N	
Secondary	24'10"			N	N	
Secondary	24'0"			N	N	
Secondary Riser	22'4"			N	N	
Communication		18'4"		N	N	
Communication	17'4"		51	N	N	

Communication	15'10"	14'5"	N	N	
Primary	33'6"		N	N	D: Pedestrian Only 9.5'
Neutral	25'3"		N	N	
Secondary	24'6"		N	N	
Secondary	23'9"		N	N	
Communication		19'8"	N	N	
Communication	18'8"		34	N	N
Communication	17'3"	16'5"	N	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX135-05W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: LAUREN SANDEFUR 812-213-1328
EMAIL ADDRESS: LAUREN.SANDEFUR@METRONETINC.COM

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Lauren Sandefur 3/18/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & makeredy MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	NT	164W	2013 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	19'10"	20'2"	24'11"	(1)Fiber/Strand			
2	27300-2012-02	165W	2012 ST TERESA DR, Lexington, KY 40502	45, 3, WXM	20'11"	N/A	25'5"	(1)Fiber/Strand			
3	27300-2013	166W	2016 ST MICHAEL DR, Lexington, KY 40502	40, 3, WXM	N/A	N/A	24'5"	(2)Fiber/Strand			
4	NT	167W	2024 ST MICHAEL DR, Lexington, KY 40502	40, 3, WXM	17'2"	17'7"	23'5"	(1)Fiber/Strand			
5	NT	168W	2033 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	17'10"	18'6"	28'1"	(1)Fiber/Strand			
6	NT	169W	2041 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	19'6"	19'9"	28'1"	(1)Fiber/Strand			
7	NT	170W	2049 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	17'9"	18'0"	24'6"	(1)Fiber/Strand			
8	NT	171W	2057 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	17'10"	18'2"	26'7"	(1)Fiber/Strand			
9	NT	172W	2065 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	19'2"	19'6"	22'6"	(1)Fiber/Strand			
10	NT	173W	2077 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	17'7"	16'4"	23'9"	(1)Fiber/Strand			
11	NT	174W	2089 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	18'5"	18'2"	23'4"	(1)Fiber/Strand			
12	NT	175W	2101 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	18'4"	18'8"	26'8"	(1)Fiber/Strand			
13	NT	176W	2108 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	19'5"	19'6"	24'5"	(1)Fiber/Strand			
14	NT	177W	2093 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	19'7"	20'1"	24'7"	(1)Fiber/Strand			
15	NT	178W	2081 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	19'3"	19'5"	27'8"	(1)Fiber/Strand			
16	NT	179W	2069 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'0"	20'0"	24'6"	(1)Fiber/Strand			
17	NT	180W	2061 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	19'5"	19'7"	22'3"	(1)Fiber/Strand			
18	NT	181W	2052 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	N/A	N/A	29'0"	(1)Fiber/Strand			
19	NT	182W	2044 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	19'7"	N/A	24'2"	(1)Fiber/Strand			

20	NT	183W	2029 ST CHRISTOPHER DR, Lexington, KY 40502	40, 3, WXM	20'1"	20'1"	24'9"		(1)Fiber/Strand			
21	NT	184W	2024 ST TERESA DR, Lexington, KY 40502	40, 3, WXM	17'10"	18'2"	21'10"		(1)Fiber/Strand			
22	NT	185W	181 ST PHILLIP DR, Lexington, KY 40502	35, 4, WXM	17'4"	17'6"	22'8"		(1)Fiber/Strand			
23	NT	186W	173 ST PHILLIP DR, Lexington, KY 40502	35, 4, WXM	17'4"	17'1"	21'0"		(1)Fiber/Strand			
24	NT	187W	166 ST ANN DR, Lexington, KY 40502	40, 3, WXM	15'10"	N/A	22'4"		(1)Fiber/Strand			
25	NT	188W	157 ST PHILLIP DR, Lexington, KY 40502	40, 3, WXM	17'3"	N/A	23'9"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

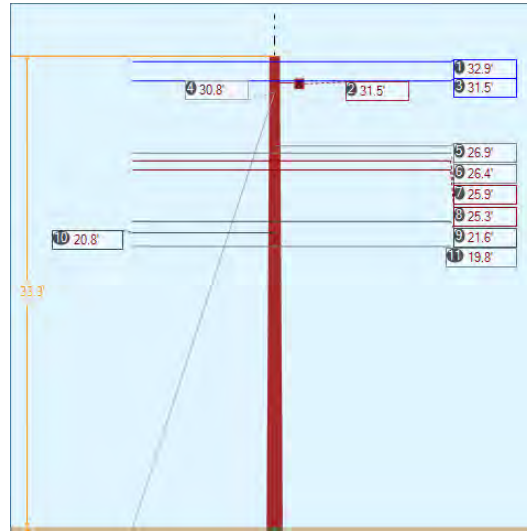
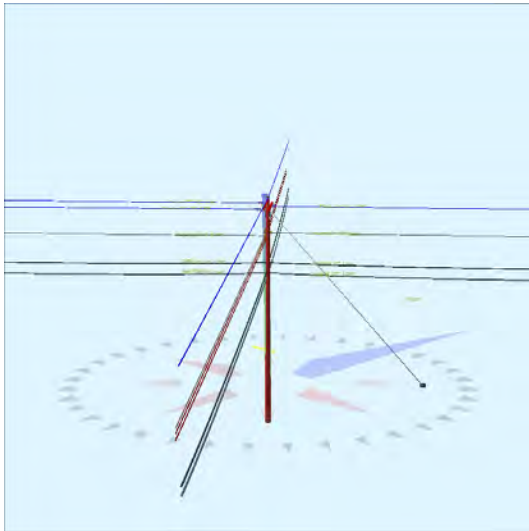
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
Footage AERIAL (TENSION SPAN)	ROADS
Footage AERIAL (SLACK SPAN)	WORK POINTS
Footage NEW / PROPOSED TRENCH	RAILROADS
Footage EXISTING INHERITED TRENCH	

Pole Num:	164W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025676 Deg	Longitude:	-84.459749 Deg	Elevation:	897.573134956142		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.9	312.7
Groundline	25.9	312.7
Vertical	6.0	226.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,226	312.7
Groundline	20,226	312.7
GL Allowable	81,863	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	27.0	46.0		21.8	312.7	24.6	230.0
? EHS 3/8 (Down)			30.8	31.4	312.7	39.1	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 304.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	917	111.8	26,848	132.7	32.8	2,330	448	4	2,334	34.3
Comms	264	32.2	6,355	31.4	7.8	551	911	9	560	8.2
GuyBraces	-560	-68.2	-16,468	-81.4	-20.1	-1,429	4,947	49	-1,380	-20.3
Pole	180	21.9	2,920	14.4	3.6	253	1,838	18	271	4.0
Crossarms	4	0.5	131	0.7	0.2	11	190	2	13	0.2
Insulators	15	1.8	441	2.2	0.5	38	85	1	39	0.6
Pole Load	820	100.0	20,226	100.0	24.7	1,755	8,419	83	1,838	27.0
Pole Reserve Capacity			61,637		75.3	5,045			4,962	73.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 304.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	372	45.3	10,821	53.5	13.2	939	5,442	54	993	14.6
Unknown, COMMUNICATION	264	32.2	6,355	31.4	7.8	551	949	9	561	8.2
Pole	180	21.9	2,920	14.4	3.6	253	1,838	18	271	4.0
<Undefined>	4	0.5	131	0.7	0.2	11	190	2	13	0.2
Totals:	820	100.0	20,226	100.0	24.7	1,755	8,419	83	1,838	27.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.90	16.44	0.3980	0.12	0.145	93.4	317.9	93.4	2,128	88,523	9	17	88,549
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.90	16.44	0.3980	0.17	0.145	108.8	139.3	108.8	2,128	-87,978	-11	28	-87,961
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.54	18.27	0.3980	0.22	0.145	107.7	49.3	107.7	2,128	-22,297	-3	854	-21,446
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.54	51.55	0.3980	0.24	0.145	112.3	229.3	112.3	2,128	22,297	11	890	23,199
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.54	51.55	0.3980	0.24	0.145	112.3	229.3	112.3	2,128	22,297	-8	890	23,179
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.95	6.55	0.3980	0.22	0.145	107.7	49.3	107.7	2,128	-19,051	-5	730	-18,326

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.44	6.58	0.3980	0.17	0.145	108.8	139.3	108.8	2,128	-70,703	5	22	-70,676
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.44	6.58	0.3980	0.24	0.145	112.3	229.3	112.3	2,128	18,691	5	746	19,442
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.44	6.58	0.3980	0.12	0.145	93.4	317.9	93.4	2,128	71,139	4	14	71,157
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.89	6.61	0.3980	0.17	0.145	108.8	139.3	108.8	2,128	-69,237	5	22	-69,210
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.89	6.61	0.3980	0.12	0.145	93.4	317.9	93.4	2,128	69,663	4	13	69,681
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.25	6.65	0.3980	0.17	0.145	108.8	139.3	108.8	2,128	-67,536	5	21	-67,510
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.25	6.65	0.3980	0.12	0.145	93.4	317.9	93.4	2,128	67,952	4	13	67,970
Totals:											23,760	27	4,261	28,048	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.62	6.87	1.3300	1.44	0.337	107.7	49.3	107.7	925	-6,644	47	1,193	-5,404
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.62	6.87	1.3300	1.51	0.337	112.3	229.3	112.3	925	6,644	49	1,244	7,936
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.62	6.87	1.3300	1.21	0.337	93.4	317.9	93.4	925	25,287	41	23	25,350
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.82	6.92	1.3300	1.44	0.337	108.8	139.3	108.8	925	-24,203	-48	36	-24,215
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.85	6.98	1.5000	1.67	0.900	107.7	49.3	107.7	2,000	-13,190	83	1,197	-11,910
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.85	6.98	1.5000	1.76	0.900	112.3	229.3	112.3	2,000	13,190	87	1,248	14,525
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.85	6.98	1.5000	1.40	0.900	93.4	317.9	93.4	2,000	50,201	72	23	50,296
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.85	6.98	1.5000	1.68	0.900	108.8	139.3	108.8	2,000	-49,894	-84	37	-49,941
		COMMUNICATION													
Totals:											1,391	247	5,001	6,639	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	31.54	5.52	229.3	229.3	50.00	4.50	3.50	96.00	0	136	136	
Totals:											0	136	136

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.90	0.00	317.9	317.9	3.00	3.80	12.75	8	77	84
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.90	0.00	139.3	139.3	3.00	3.80	12.75	-8	77	69
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.54	0.00	49.3	180.0	3.00	3.80	12.75	-2	74	71
Deadend	Deadend 19.63	KU, UTILITY	31.54	45.00	312.3	0.0	4.00	3.00	19.63	32	89	121
Deadend	Deadend 19.63	KU, UTILITY	31.54	-45.00	146.3	0.0	4.00	3.00	19.63	-23	89	66
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.95	0.00	49.1	49.1	2.00	3.00	3.19	-1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.44	0.00	229.3	139.3	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.89	0.00	229.3	139.3	2.00	3.00	3.19	1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.25	0.00	229.3	139.3	2.00	3.00	3.19	1	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.62	0.00	319.2	229.2	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	20.82	0.00	139.3	229.3	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.85	0.00	319.2	229.2	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	19.85	0.00	139.3	229.3	5.00	3.00	0.00	-5	0	-5
Totals:										7	454	461

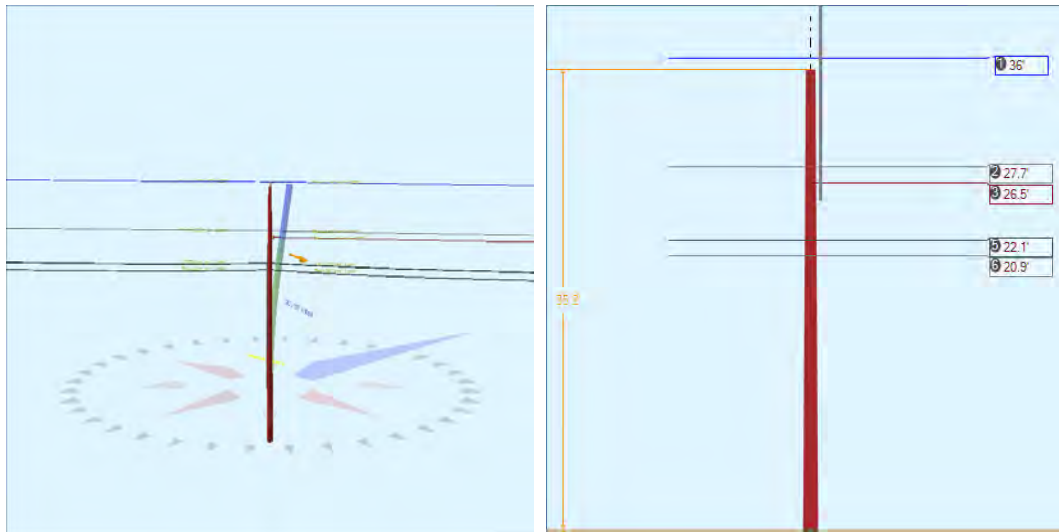
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Down	KU, UTILITY	30.75	0.00	27.00	0.375	75.00	46.0	48.6	0.273	39.21	1.08

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	5,417	4,924	4,355	3,264	2,883	-575	-17,204
Totals:									3,264	2,883	-575	-17,204

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	27.00	46.0	20,000	1.00	20,000	4,924	4,355	24.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.80	34.30	10.26	14.16	7.32	11.38	1.60e+6	60.00	57.00	33.30	140,915	1403.18	16.67

Pole Num:	165W - 27300-2012-02	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025862 Deg	Longitude:	-84.459443 Deg	Elevation:	891.138953091424		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.8	0.0
Groundline	45.8	0.0
Vertical	6.1	18.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	38,226	76.0
Groundline	38,226	76.0
GL Allowable	84,215	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 76.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,183	78.9	31,898	83.5	37.9	2,568	197	2	2,569	37.8
Comms	129	8.6	2,925	7.7	3.5	236	544	5	241	3.5
Pole	156	10.4	2,801	7.3	3.3	226	1,964	19	244	3.6
Risers	27	1.8	440	1.2	0.5	35	48	0	36	0.5
Insulators	5	0.3	161	0.4	0.2	13	51	0	13	0.2
Pole Load	1,499	100.0	38,226	100.0	45.4	3,077	2,804	27	3,104	45.6
Pole Reserve Capacity			45,989		54.6	3,723			3,696	54.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 76.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,214	81.0	32,495	85.0	38.6	2,616	277	3	2,618	38.5
Unknown, COMMUNICATION	129	8.6	2,930	7.7	3.5	236	563	5	241	3.5
Pole	156	10.4	2,801	7.3	3.3	226	1,964	19	244	3.6
Totals:	1,499	100.0	38,226	100.0	45.4	3,077	2,804	27	3,104	45.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.03	0.00	0.3980	0.35	0.145	144.4	49.9	144.4	2,128	68,897	0	530	69,427
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.03	0.00	0.3980	0.20	0.145	107.7	229.1	107.7	2,128	-68,419	0	409	-68,010
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.73	6.60	0.3980	0.35	0.145	144.4	49.9	144.4	2,128	53,003	12	407	53,422
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.73	6.60	0.3980	0.20	0.145	107.7	229.1	107.7	2,128	-52,635	9	315	-52,312
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	26.49	6.67	0.2570	0.28	0.067	144.4	49.9	144.4	1,216	28,928	15	328	29,271
										Totals:	29,773	36	1,989	31,798	

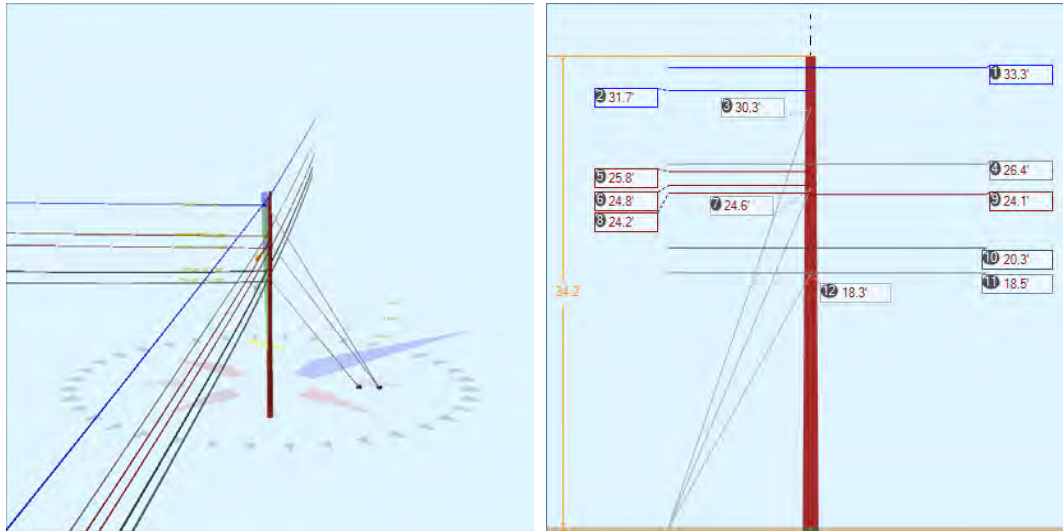
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.10	6.93	1.3300	2.04	0.337	144.4	49.9	144.4	925	18,362	29	662	19,053
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.10	6.93	1.3300	1.44	0.337	107.7	229.1	107.7	925	-18,235	22	511	-17,702
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.00	1.5000	2.40	0.900	144.4	49.9	144.4	2,000	37,591	52	685	38,327
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.93	7.00	1.5000	1.67	0.900	107.7	229.1	107.7	2,000	-37,330	38	529	-36,762
		COMMUNICATION													
Totals:											388	141	2,387	2,916	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 230.0°	Riser	KU, UTILITY	25.44	6.09	230.0	230.0	25.44	305.31	2.50	2.50	305.31	-11	450	439
Totals:											-11	450	439	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.16	0.00	0.0	0.0	13.00	9.00	10.50	0	132	132
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.73	0.00	139.5	49.5	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.49	0.00	49.9	49.9	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	22.10	0.00	139.5	49.5	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	20.93	0.00	139.5	49.5	5.00	3.00	0.00	2	0	2
Totals:										8	153	161

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.35	32.84	10.77	12.04	7.32	11.49	1.60e+6	60.00	57.00	35.16	45,666	459.71	16.39

Pole Num:	166W - 27300-2013	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.82	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.026141 Deg	Longitude:	-84.459073 Deg	Elevation:	883.270303020164		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.4	0.0
Groundline	41.4	0.0
Vertical	19.6	25.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,889	169.8
Groundline	30,889	169.8
GL Allowable	84,193	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single - 14" - Soil Class 4	19.0	49.9		63.1	143.4	65.5	230.0
? EHS 3/8 (Down)			30.3	64.8	143.4	73.8	230.0
? EHS 3/8 (Down)			24.6	76.4	143.4	87.6	230.0
? Single - 8" - Soil Class 4	15.5	50.0		35.2	143.4	37.3	230.0
? EHS 1/4 (Down)			18.3	76.5	143.4	89.2	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 169.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,254	402.1	140,466	454.7	166.8	13,708	543	5	13,713	201.7
Comms	2,096	134.8	33,289	107.8	39.5	3,249	971	9	3,258	47.9
GuyBraces	-6,971	-448.2	-145,506	-471.1	-172.8	-14,200	29,448	284	-13,916	-204.6
Pole	168	10.8	2,416	7.8	2.9	236	1,909	18	254	3.7
Insulators	8	0.5	225	0.7	0.3	22	55	1	22	0.3
Pole Load	1,555	100.0	30,889	100.0	36.7	3,015	32,926	318	3,333	49.0
Pole Reserve Capacity			53,304		63.3	3,786			3,467	51.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 169.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	6,262	402.7	140,686	455.5	167.1	13,730	579	6	13,735	202.0
Unknown, COMMUNICATION	2,096	134.8	33,293	107.8	39.5	3,249	990	10	3,259	47.9
<Undefined>	-6,971	-448.2	-145,506	-471.1	-172.8	-14,200	29,448	284	-13,916	-204.6
Pole	168	10.8	2,416	7.8	2.9	236	1,909	18	254	3.7
Totals:	1,555	100.0	30,889	100.0	36.7	3,015	32,926	318	3,333	49.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.34	16.46	0.3980	0.31	0.145	148.8	319.7	148.8	2,128	-79,781	-13	42	-79,753
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.34	16.46	0.3980	0.34	0.145	156.6	141.3	156.6	2,128	81,034	14	23	81,071
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.67	16.56	0.3980	0.39	0.145	144.4	229.9	144.4	2,128	43,691	8	1,036	44,734
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.35	6.64	0.3980	0.34	0.145	156.6	141.3	156.6	2,128	64,055	14	19	64,088
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.35	6.64	0.3980	0.39	0.145	144.4	229.9	144.4	2,128	36,358	13	862	37,233
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.35	6.64	0.3980	0.31	0.145	148.8	319.7	148.8	2,128	-63,058	13	33	-63,012

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.35	6.64	0.3980	0.39	0.145	144.4	229.9	144.4	2,128	36,358	13	862	37,233
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.67	0.3980	1.90	0.145	156.6	141.3	156.6	450	13,264	25	18	13,307
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.79	6.73	0.3980	1.90	0.145	156.6	141.3	156.6	450	12,744	8	17	12,770
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.15	6.77	0.3980	1.77	0.145	148.8	319.7	148.8	450	-12,218	-24	30	-12,212
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.25	6.76	0.3980	0.39	0.145	144.4	229.9	144.4	2,128	33,458	13	793	34,265
Totals:											165,904	84	3,735	169,724	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.27	7.01	1.3300	2.10	0.337	148.8	319.7	148.8	925	-21,087	34	52	-21,001
CATV	CATV 1.0	Unknown, COMMUNICATION	20.27	7.01	1.3300	2.05	0.337	144.4	229.9	144.4	925	12,158	33	1,351	13,543
CATV	CATV 1.0	Unknown, COMMUNICATION	20.27	7.01	1.3300	2.24	0.337	156.6	141.3	156.6	925	21,420	36	29	21,485
Telco	TELE 1.5	Unknown, COMMUNICATION	18.46	7.12	1.5000	2.48	0.900	148.8	319.7	148.8	2,000	-41,506	61	51	-41,394
Telco	TELE 1.5	Unknown, COMMUNICATION	18.46	7.12	1.5000	2.40	0.900	144.4	229.9	144.4	2,000	23,931	59	1,345	25,335
Telco	TELE 1.5	Unknown, COMMUNICATION	18.46	7.12	1.5000	2.65	0.900	156.6	141.3	156.7	2,000	42,162	64	29	42,254
Totals:											37,079	287	2,857	40,223	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.34	0.00	319.7	319.7	3.00	3.80	12.75	-7	70	64
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.34	0.00	141.3	141.3	3.00	3.80	12.75	7	70	77
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.67	0.00	229.9	229.9	3.00	3.80	12.75	4	67	71
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.35	0.00	230.3	140.3	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	141.3	141.3	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.79	0.00	95.6	95.6	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.15	0.00	319.7	319.7	2.00	3.00	3.19	-2	10	8

Bolt	Single Bolt	Unknown, COMMUNICATION	20.27	0.00	229.7	229.7	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	18.46	0.00	229.7	229.7	5.00	3.00	0.00	3	0	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.25	0.00	229.7	319.7	2.00	3.00	3.19	1	10	11
Totals:										12	260	272

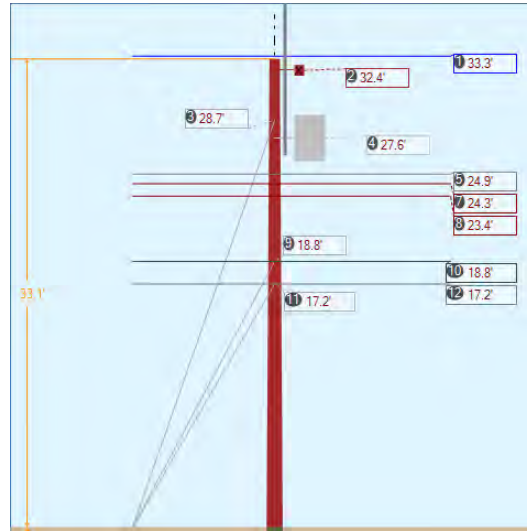
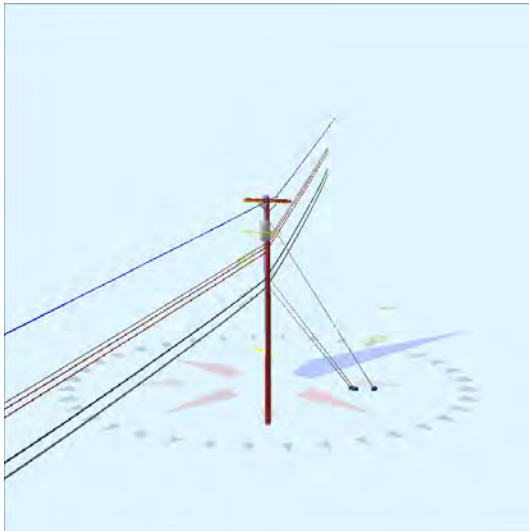
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down		30.33	0.00	19.00	0.375	75.00	49.9	57.7	0.273	35.62	2.02
EHS 3/8	Down		24.58	0.00	19.00	0.375	75.00	49.9	52.1	0.273	30.86	2.06
EHS 1/4	Down		18.33	0.00	15.52	0.25	75.00	50.0	49.6	0.121	23.77	1.54

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,235	9,305	8,986	7,598	4,798	-2,393	-71,049
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,141	11,037	10,586	8,355	6,500	-3,242	-78,280
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,336	4,851	4,576	3,484	2,967	-1,475	-26,485
Totals:										19,437	14,265	-7,110	-175,814

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single - 14" - Soil Class 4			0.00	19.00	49.9	31,000	1.00	31,000	20,317	19,548	65.5
Single - 8" - Soil Class 4			0.00	15.52	50.0	13,000	1.00	13,000	4,851	4,576	37.3

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.39	34.04	10.43	27.07	7.32	11.49	1.60e+6	60.00	57.00	34.18	167,986	1679.89	5.10

Pole Num:	167W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.64	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025804 Deg	Longitude:	-84.458700 Deg	Elevation:	885.74377369478		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	13.2	0.0
Groundline	13.2	0.0
Vertical	4.4	23.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,666	312.6
Groundline	9,666	312.6
GL Allowable	81,212	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.5	52.3		11.4	316.3	14.0	230.0
? EHS 3/8 (Down)			28.7	16.5	316.3	22.1	230.0
? Single Helix Anchor	15.2	54.4		5.2	316.3	6.2	250.0
? EHS 1/4 (Down)			18.8	17.3	316.3	22.8	250.0
? Single Helix Anchor	14.6	53.0		4.3	316.3	5.7	230.0
? EHS 1/4 (Down)			17.2	14.2	316.3	20.8	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 312.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	442	89.0	10,756	111.3	13.2	979	351	3	983	14.5
Comms	160	32.2	2,679	27.7	3.3	244	576	6	250	3.7
GuyBraces	-417	-83.8	-8,869	-91.8	-10.9	-808	5,119	51	-757	-11.1
PowerEquipments	42	8.4	-10	-0.1	0.0	-1	694	7	6	0.1
Pole	180	36.1	2,783	28.8	3.4	253	1,818	18	271	4.0
Crossarms	62	12.5	1,849	19.1	2.3	168	190	2	170	2.5
Risers	25	4.9	377	3.9	0.5	34	47	0	35	0.5
Insulators	4	0.8	102	1.1	0.1	9	53	1	10	0.1
Pole Load	497	100.0	9,666	100.0	11.9	880	8,847	88	968	14.2
Pole Reserve Capacity			71,546		88.1	5,920			5,832	85.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 312.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	315	63.4	6,008	62.2	7.4	547	4,032	40	587	8.6
Unknown, COMMUNICATION	-60	-12.0	-973	-10.1	-1.2	-89	2,807	28	-61	-0.9
Pole	180	36.1	2,783	28.8	3.4	253	1,818	18	271	4.0
<Undefined>	62	12.5	1,849	19.1	2.3	168	190	2	170	2.5
Totals:	497	100.0	9,666	100.0	11.9	880	8,847	88	968	14.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	18.00	0.3980	0.17	0.145	110.1	150.9	110.1	2,128	-87,413	-17	76	-87,355
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	18.00	0.3980	0.34	0.145	156.6	321.3	156.6	2,128	91,000	-24	18	90,993
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.93	6.65	0.3980	0.17	0.145	110.1	150.9	110.1	2,128	-65,502	5	57	-65,440
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.93	6.65	0.3980	0.34	0.145	156.6	321.3	156.6	2,128	68,189	7	13	68,209
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.25	6.70	0.3980	0.17	0.145	110.1	150.9	110.1	2,128	-63,717	5	55	-63,658
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.25	6.70	0.3980	0.34	0.145	156.6	321.3	156.6	2,128	66,331	7	13	66,351
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.38	6.75	0.3980	0.17	0.145	110.1	150.9	110.1	2,128	-61,412	5	53	-61,354
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.38	6.75	0.3980	0.34	0.145	156.6	321.3	156.6	2,128	63,932	7	13	63,951
Totals:											11,407	-7	297	11,697	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.77	7.03	1.3300	1.46	0.337	110.1	150.9	110.2	925	-21,438	12	87	-21,339
CATV	CATV 1.0	Unknown, COMMUNICATION	18.77	7.03	1.3300	2.24	0.337	156.6	321.3	156.6	925	22,317	17	20	22,355
Telco	TELE 1.5	Unknown, COMMUNICATION	17.17	7.13	1.5000	1.70	0.900	110.1	150.9	110.2	2,000	-42,392	21	87	-42,284

Telco	TELE 1.5	Unknown,	17.17	7.13	1.5000	2.65	0.900	156.6	321.3	156.7	2,000	44,131	30	20	44,181	
		COMMUNICATION														
												Totals:	2,619	79	215	2,913

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Transformer	1PH-25KVA	KU, UTILITY	27.57	20.99	150.0	150.0	365.00	39.00	--	22.00	--	-1,158	1,147	-11	
												Totals:	-1,158	1,147	-11

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Normal	Crossarm		32.45	5.45	150.9	150.9	50.00	4.50	3.50	96.00	0	2,011	2,011		
												Totals:	0	2,011	2,011

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Riser 360.0°	Riser	KU, UTILITY	24.49	5.85	360.0	360.0	24.49	293.89	2.50	2.50	293.89	8	402	410	
												Totals:	8	402	410

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)				
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.63	-18.00	77.7	0.0	6.00	3.50	7.50	-11	83	73			
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.93	0.00	236.1	146.1	2.00	3.00	3.19	0	12	12			
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.25	0.00	236.1	146.1	2.00	3.00	3.19	0	11	12			
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.38	0.00	236.1	146.1	2.00	3.00	3.19	0	11	11			
Bolt	Three Bolt	Unknown, COMMUNICATION	18.77	0.00	236.1	146.1	5.00	3.00	0.00	1	0	1			
Bolt	Three Bolt	Unknown, COMMUNICATION	17.17	0.00	236.1	146.1	5.00	3.00	0.00	1	0	1			
												Totals:	-7	117	111

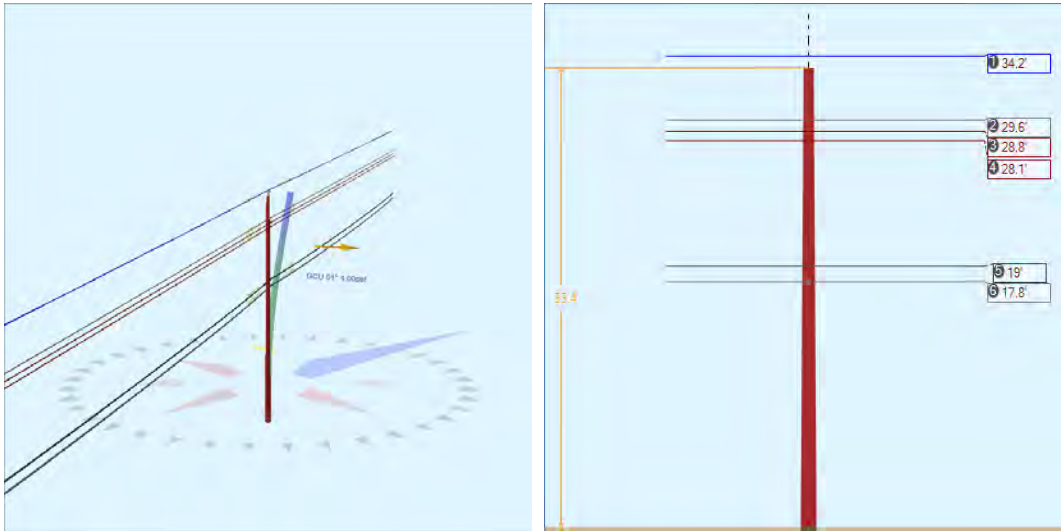
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	28.74	0.00	18.49	0.375	75.00	52.3	57.0	0.273	32.50	0.47
EHS 1/4	Down	Unknown, COMMUNICATION	18.77	0.00	15.24	0.25	75.00	54.4	50.8	0.121	22.44	0.33
EHS 1/4	Down	Unknown, COMMUNICATION	17.17	0.00	14.59	0.25	75.00	53.0	49.5	0.121	20.78	0.25

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,068	2,789	2,284	1,916	1,243	-209	-5,671
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,366	1,242	1,036	802	656	-134	-2,381
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,242	1,129	852	648	554	-99	-1,593
Totals:										3,367	2,452	-443	-9,645

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	18.49	52.3	20,000	1.00	20,000	2,789	2,284	13.9
Single Helix Anchor			18.00	15.24	54.4	20,000	1.00	20,000	1,242	1,036	6.2
Single Helix Anchor			18.00	14.59	53.0	20,000	1.00	20,000	1,129	852	5.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.05	33.71	10.40	13.49	7.32	11.35	1.60e+6	60.00	57.00	33.05	201,412	2010.75	22.73

Pole Num:	168W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.65	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.75	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025585 Deg	Longitude:	-84.458548 Deg	Elevation:	888.833737413182		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.3	60.7
Groundline	25.3	60.7
Vertical	5.9	60.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,389	60.7
Groundline	20,389	60.7
GL Allowable	82,001	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 60.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	365	42.6	11,180	54.8	13.6	923	309	3	926	13.6
Comms	303	35.4	5,888	28.9	7.2	486	507	5	491	7.2
Pole	182	21.3	3,107	15.2	3.8	256	1,842	18	275	4.0
Insulators	6	0.7	214	1.1	0.3	18	55	1	18	0.3
Pole Load	856	100.0	20,389	100.0	24.9	1,683	2,713	27	1,709	25.1
Pole Reserve Capacity			61,612		75.1	5,117			5,091	74.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 60.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	371	43.3	11,383	55.8	13.9	939	345	3	943	13.9
Unknown, COMMUNICATION	303	35.4	5,899	28.9	7.2	487	526	5	492	7.2
Pole	182	21.3	3,107	15.2	3.8	256	1,842	18	275	4.0
Totals:	856	100.0	20,389	100.0	24.9	1,683	2,713	27	1,709	25.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.23	0.00	0.3980	0.29	0.145	124.6	150.1	124.6	2,128	532	0	1,117	1,649
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.23	0.00	0.3980	0.23	0.145	110.1	330.9	110.1	2,128	486	0	988	1,473
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	29.58	6.39	0.3980	0.29	0.145	124.6	150.1	124.6	2,128	459	22	965	1,446
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	29.58	6.39	0.3980	0.23	0.145	110.1	330.9	110.1	2,128	419	19	853	1,292
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.77	6.44	0.3980	0.29	0.145	124.6	150.1	124.6	2,128	447	22	938	1,407
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.77	6.44	0.3980	0.23	0.145	110.1	330.9	110.1	2,128	408	19	830	1,257
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.07	6.48	0.3980	0.29	0.145	124.6	150.1	124.6	2,128	436	22	916	1,374
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.07	6.48	0.3980	0.23	0.145	110.1	330.9	110.1	2,128	398	20	810	1,227
Totals:										3,585	124	7,417	11,126	

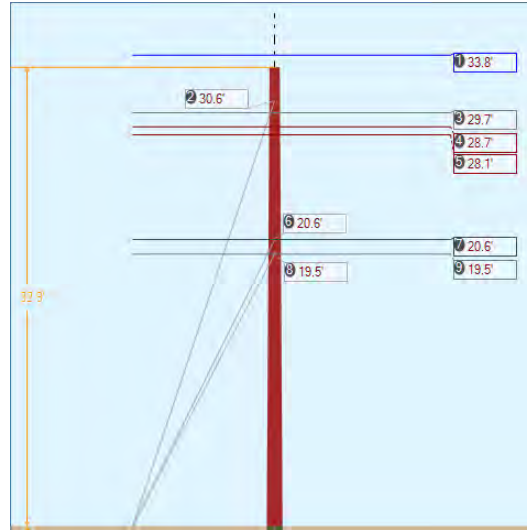
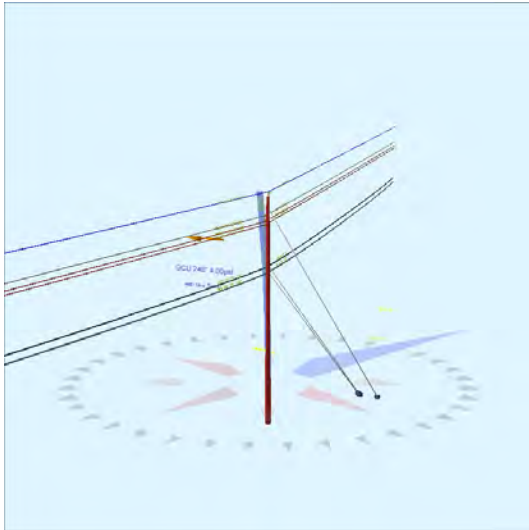
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	18.97	7.04	1.3300	1.71	0.337	124.6	150.1	124.6	925	128	57	1,261	1,447
CATV	CATV 1.0 Unknown, COMMUNICATION	18.97	7.04	1.3300	1.48	0.337	110.1	330.9	110.2	925	117	51	1,115	1,283
Telco	TELE 1.5 Unknown, COMMUNICATION	17.83	7.11	1.5000	2.00	0.900	124.6	150.1	124.6	2,000	260	101	1,296	1,657

Telco	TELE 1.5	Unknown,	17.83	7.11	1.5000	1.72	0.900	110.1	330.9	110.2	2,000	238	89	1,146	1,473	
COMMUNICATION												Totals:	743	299	4,818	5,859

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.35	0.00	0.0	0.0	13.00	9.00	10.50	0	155	155
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.58	0.00	60.5	330.5	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.77	0.00	60.5	330.5	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.07	0.00	60.5	330.5	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	18.97	0.00	60.5	330.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.83	0.00	60.5	330.5	5.00	3.00	0.00	6	0	6
Totals:										17	195	213

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.94	32.88	10.66	11.65	7.32	11.39	1.60e+6	60.00	57.00	33.35	45,966	459.78	16.95

Pole Num:	169W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.06	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.60	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025245 Deg	Longitude:	-84.458311 Deg	Elevation:	888.005003862979		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	13.4	30.7
Groundline	5.7	0.0
Vertical	8.0	25.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	2,675	248.1
Groundline	2,420	256.1
GL Allowable	80,920	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	20.2	68.4	30.6	24.7 35.6	247.9 247.9	24.7 39.2	250.0 250.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.0	68.4	20.6	7.6 25.4	247.9 247.9	7.6 28.0	256.9 256.9
? Single Helix Anchor ? EHS 1/4 (Down)	16.4	65.1	19.5	7.1 23.6	247.9 247.9	7.1 26.1	230.0 230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 256.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,301	1077.3	22,043	910.9	27.2	8,351	325	3	8,354	122.9
Comms	1,316	429.4	5,875	242.8	7.3	2,226	533	5	2,231	32.8
GuyBraces	-4,493	-1466.5	-26,211	-1083.1	-32.4	-9,930	9,645	96	-9,834	-144.6
Pole	177	57.9	667	27.6	0.8	253	1,809	18	271	4.0
Insulators	6	1.9	46	1.9	0.1	18	55	1	18	0.3
Pole Load	306	100.0	2,420	100.0	3.0	917	12,367	123	1,039	15.3
Pole Reserve Capacity			78,500		97.0	5,883			5,761	84.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 256.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	641	209.2	4,015	165.9	5.0	1,521	6,585	65	1,586	23.3
Unknown, COMMUNICATION	-512	-167.1	-2,262	-93.5	-2.8	-857	3,974	39	-817	-12.0
Pole	177	57.9	667	27.6	0.8	253	1,809	18	271	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	306	100.0	2,420	100.0	3.0	917	12,367	123	1,039	15.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.82	0.00	0.3980	0.28	0.145	122.2	166.1	122.2	2,128	-59	0	1,072	1,013
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.82	0.00	0.3980	0.29	0.145	124.6	330.1	124.6	2,128	25,856	0	1,051	26,907
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.67	6.36	0.3980	0.28	0.145	122.2	166.1	122.2	2,128	-52	21	940	909
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.67	6.36	0.3980	0.29	0.145	124.6	330.1	124.6	2,128	22,673	22	922	23,617
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.66	6.42	0.3980	0.28	0.145	122.2	166.1	122.2	2,128	-50	21	908	879
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.66	6.42	0.3980	0.29	0.145	124.6	330.1	124.6	2,128	21,903	22	891	22,816
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.11	6.45	0.3980	0.28	0.145	122.2	166.1	122.2	2,128	-49	21	891	863
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.11	6.45	0.3980	0.29	0.145	124.6	330.1	124.6	2,128	21,478	22	873	22,373
Totals:											91,700	129	7,548	99,377	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.59	6.91	1.3300	1.67	0.337	122.2	166.1	122.3	925	-16	55	1,329	1,369
CATV	CATV 1.0	Unknown, COMMUNICATION	20.59	6.91	1.3300	1.71	0.337	124.6	330.1	124.6	925	6,839	56	1,303	8,198
Telco	TELE 1.5	Unknown, COMMUNICATION	19.53	6.98	1.5000	1.95	0.900	122.2	166.1	122.3	2,000	-32	97	1,378	1,443
Telco	TELE 1.5	Unknown, COMMUNICATION	19.53	6.98	1.5000	1.99	0.900	124.6	330.1	124.6	2,000	14,028	98	1,352	15,478
Totals:											20,819	306	5,363	26,488	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.94	0.00	0.0	0.0	13.00	9.00	10.50	0	152	152
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.67	0.00	248.1	158.1	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.66	0.00	248.1	158.1	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.11	0.00	248.1	158.1	2.00	3.00	3.19	2	13	15

Bolt	Three Bolt	Unknown, COMMUNICATION	20.59	0.00	248.1	158.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.53	0.00	248.1	158.1	5.00	3.00	0.00	5	0	5
Totals:										17	192	208

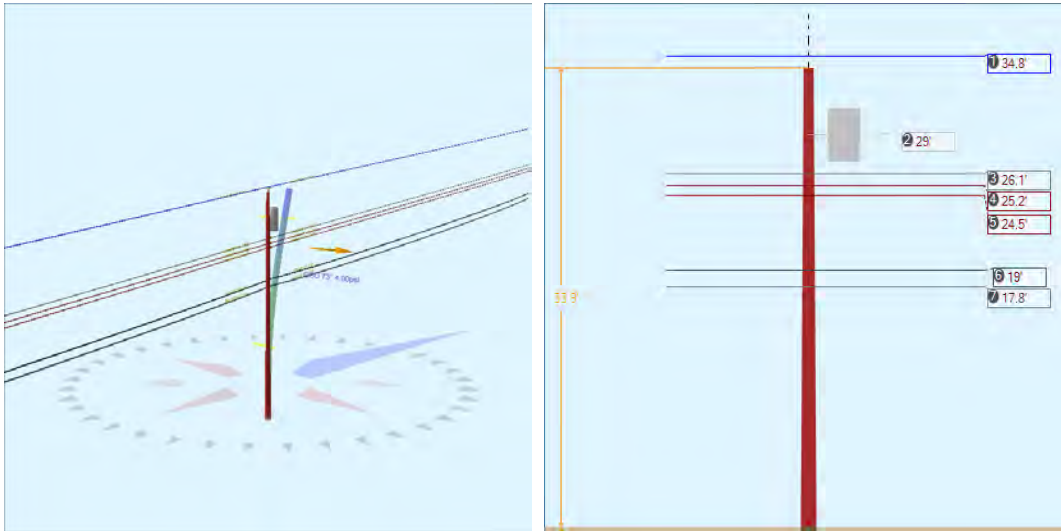
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	30.56	0.00	20.16	0.375	75.00	68.4	56.4	0.273	34.94	1.09
EHS 1/4	Down	Unknown, COMMUNICATION	20.59	0.00	17.03	0.25	75.00	68.4	50.2	0.121	24.99	0.54
EHS 1/4	Down	Unknown, COMMUNICATION	19.53	0.00	16.35	0.25	75.00	65.1	49.9	0.121	23.73	0.48

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,432	4,938	4,938	4,112	2,734	-2,709	-81,473
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,673	1,521	1,519	1,168	972	-963	-19,518
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,562	1,420	1,413	1,081	910	-894	-17,178
Totals:										6,361	4,616	-4,566	-118,169

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	20.16	68.4	20,000	1.00	20,000	4,938	4,938	24.7
Single Helix Anchor		18.00	17.03	68.4	20,000	1.00	20,000	1,521	1,519	7.6
Single Helix Anchor		18.00	16.35	65.1	20,000	1.00	20,000	1,420	1,413	7.1

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.60	34.13	10.27	16.73	7.32	11.34	1.60e+6	60.00	57.00	32.94	155,112	1545.90	12.50

Pole Num:	170W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.06	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.98	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024919 Deg	Longitude:	-84.458219 Deg	Elevation:	893.566658856611		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.1	73.4
Groundline	24.1	73.4
Vertical	12.9	73.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,666	73.4
Groundline	19,666	73.4
GL Allowable	83,549	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 68.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	328	38.6	9,245	47.0	11.1	749	285	3	752	11.1
Comms	276	32.4	5,350	27.2	6.4	434	468	5	438	6.4
PowerEquipments	55	6.4	1,644	8.4	2.0	133	1,216	12	145	2.1
Pole	185	21.8	3,215	16.4	3.9	261	1,889	18	279	4.1
Insulators	6	0.7	211	1.1	0.3	17	55	1	18	0.3
Pole Load	850	100.0	19,666	100.0	23.5	1,593	3,914	38	1,631	24.0
Pole Reserve Capacity			63,883		76.5	5,207			5,169	76.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 68.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	389	45.8	11,090	56.4	13.3	899	1,538	15	913	13.4
Unknown, COMMUNICATION	276	32.4	5,362	27.3	6.4	434	487	5	439	6.5
Pole	185	21.8	3,215	16.4	3.9	261	1,889	18	279	4.1
Totals:	850	100.0	19,666	100.0	23.5	1,593	3,914	38	1,631	24.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.81	0.00	0.3980	0.17	0.145	94.5	165.4	94.5	2,128	-8,665	0	856	-7,809
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.81	0.00	0.3980	0.28	0.145	122.2	346.1	122.2	2,128	9,563	0	1,105	10,668
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.11	6.64	0.3980	0.17	0.145	94.5	165.4	94.5	2,128	-6,496	17	641	-5,837
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.11	6.64	0.3980	0.28	0.145	122.2	346.1	122.2	2,128	7,170	22	828	8,020
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.23	6.69	0.3980	0.17	0.145	94.5	165.4	94.5	2,128	-6,277	17	620	-5,640
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.23	6.69	0.3980	0.28	0.145	122.2	346.1	122.2	2,128	6,928	22	800	7,750
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.51	6.73	0.3980	0.17	0.145	94.5	165.4	94.5	2,128	-6,097	17	602	-5,477

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.51	6.73	0.3980	0.28	0.145	122.2	346.1	122.2	2,128	6,729	22	777	7,529	
												Totals:	2,856	118	6,229	9,203

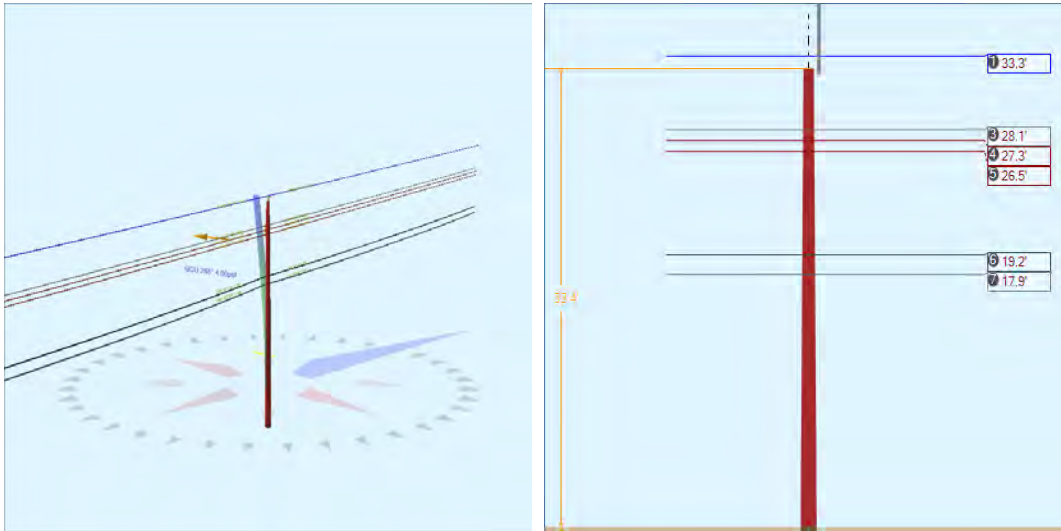
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
CATV	CATV 1.0	Unknown, COMMUNICATION	18.99	7.07	1.3300	1.24	0.337	94.5	165.4	94.5	925	-2,054	43	951	-1,060	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.99	7.07	1.3300	1.67	0.337	122.2	346.1	122.3	925	2,267	56	1,228	3,551	
Telco	TELE 1.5	Unknown, COMMUNICATION	17.78	7.14	1.5000	1.43	0.900	94.5	165.4	94.5	2,000	-4,156	77	973	-3,107	
Telco	TELE 1.5	Unknown, COMMUNICATION	17.78	7.14	1.5000	1.95	0.900	122.2	346.1	122.3	2,000	4,587	99	1,256	5,942	
												Totals:	644	275	4,407	5,326

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Transformer	1PH-50KVA	KU, UTILITY	29.02	21.96	340.0	340.0	640.00	47.00	--	24.00	--	51	1,586	1,637	
												Totals:	51	1,586	1,637

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.94	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157		
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.11	0.00	75.7	345.7	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.23	0.00	75.7	345.7	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.51	0.00	75.7	345.7	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.99	0.00	75.7	345.7	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.78	0.00	75.7	345.7	5.00	3.00	0.00	6	0	6		
											Totals:	17	193	210

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.71	33.46	10.57	14.96	7.32	11.46	1.60e+6	60.00	57.00	33.94	30,275	303.38	7.75

Pole Num:	171W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.59	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.39	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024677 Deg	Longitude:	-84.458119 Deg	Elevation:	897.922115816686		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.9	0.0
Groundline	31.9	0.0
Vertical	6.3	17.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,065	256.5
Groundline	25,065	256.5
GL Allowable	79,533	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 256.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	460	42.7	13,410	53.5	16.9	1,145	336	3	1,148	16.9
Comms	351	32.6	6,817	27.2	8.6	582	550	6	588	8.6
Pole	176	16.3	2,935	11.7	3.7	251	1,766	18	268	3.9
Risers	85	7.9	1,696	6.8	2.1	145	113	1	146	2.1
Insulators	6	0.6	206	0.8	0.3	18	55	1	18	0.3
Pole Load	1,078	100.0	25,065	100.0	31.5	2,140	2,821	28	2,169	31.9
Pole Reserve Capacity			54,468		68.5	4,660			4,631	68.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 256.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	551	51.1	15,302	61.1	19.2	1,307	485	5	1,311	19.3
Unknown, COMMUNICATION	351	32.6	6,828	27.2	8.6	583	569	6	589	8.7
Pole	176	16.3	2,935	11.7	3.7	251	1,766	18	268	3.9
Totals:	1,078	100.0	25,065	100.0	31.5	2,140	2,821	28	2,169	31.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	33.28	0.00	0.3980	0.48	0.145	160.5	166.7	160.5	2,128	294	0	1,399	1,693
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	33.28	0.00	0.3980	0.17	0.145	94.5	345.4	94.5	2,128	1,314	0	823	2,137
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.09	6.42	0.3980	0.48	0.145	160.5	166.7	160.5	2,128	248	28	1,180	1,457
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.09	6.42	0.3980	0.17	0.145	94.5	345.4	94.5	2,128	1,108	17	695	1,819
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.32	6.47	0.3980	0.48	0.145	160.5	166.7	160.5	2,128	241	28	1,148	1,417
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.32	6.47	0.3980	0.17	0.145	94.5	345.4	94.5	2,128	1,078	17	675	1,770
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.55	6.52	0.3980	0.48	0.145	160.5	166.7	160.5	2,128	234	29	1,115	1,379

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.55	6.52	0.3980	0.17	0.145	94.5	345.4	94.5	2,128	1,047	17	656	1,720
											Totals:	5,564	136	7,692	13,392

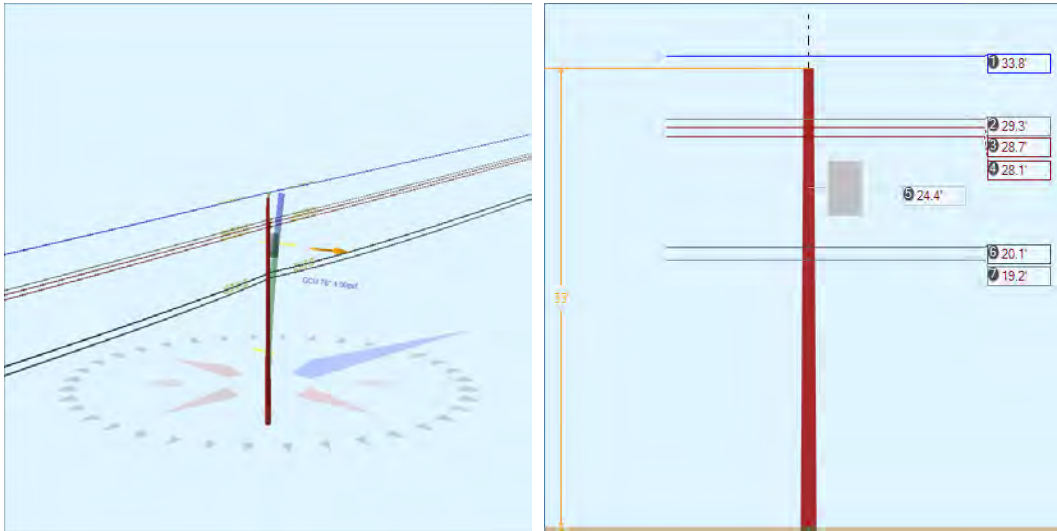
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.24	6.96	1.3300	2.34	0.337	160.5	166.7	160.5	925	74	73	1,648	1,795
CATV	CATV 1.0	Unknown, COMMUNICATION	19.24	6.96	1.3300	1.24	0.337	94.5	345.4	94.5	925	330	43	969	1,343
Telco	TELE 1.5	Unknown, COMMUNICATION	17.86	7.05	1.5000	2.76	0.900	160.5	166.7	160.5	2,000	148	129	1,672	1,949
Telco	TELE 1.5	Unknown, COMMUNICATION	17.86	7.05	1.5000	1.43	0.900	94.5	345.4	94.5	2,000	662	76	984	1,722
											Totals:	1,214	322	5,272	6,808

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 180.0°	Riser	KU, UTILITY	29.87	5.85	180.0	180.0	29.87	358.38	2.50	2.50	358.38	3	847	850
Riser 360.0°	Riser	KU, UTILITY	29.87	5.85	360.0	360.0	29.87	358.38	2.50	2.50	358.38	-3	847	844
											Totals:	0	1,694	1,694

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.41	0.00	0.0	0.0	13.00	9.00	10.50	0	151	151	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.09	0.00	256.0	166.0	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.32	0.00	256.0	166.0	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.55	0.00	256.0	166.0	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.24	0.00	256.0	166.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.86	0.00	256.0	166.0	5.00	3.00	0.00	6	0	6	
										Totals:	17	189	206

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.83	32.89	10.55	11.79	7.32	11.27	1.60e+6	60.00	57.00	32.41	44,586	447.78	15.87

Pole Num:	172W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.03	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.61	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024213 Deg	Longitude:	-84.457990 Deg	Elevation:	907.42092877208		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.7	0.0
Groundline	31.7	0.0
Vertical	12.7	20.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,217	71.2
Groundline	25,217	71.2
GL Allowable	81,001	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 71.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	419	40.2	12,755	50.6	15.8	1,068	416	4	1,072	15.8
Comms	382	36.7	7,915	31.4	9.8	663	683	7	669	9.8
PowerEquipments	55	5.3	1,294	5.1	1.6	108	1,216	12	120	1.8
Pole	179	17.2	3,043	12.1	3.8	255	1,811	18	273	4.0
Insulators	6	0.6	211	0.8	0.3	18	55	1	18	0.3
Pole Load	1,040	100.0	25,217	100.0	31.1	2,111	4,181	41	2,152	31.7
Pole Reserve Capacity			55,784		68.9	4,689			4,648	68.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 71.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	479	46.1	14,248	56.5	17.6	1,193	1,669	17	1,209	17.8
Unknown, COMMUNICATION	382	36.7	7,926	31.4	9.8	664	702	7	670	9.9
Pole	179	17.2	3,043	12.1	3.8	255	1,811	18	273	4.0
Totals:	1,040	100.0	25,217	100.0	31.1	2,111	4,181	41	2,152	31.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.85	0.00	0.3980	0.45	0.145	155.8	166.1	155.8	2,128	-6,183	0	1,376	-4,807
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.85	0.00	0.3980	0.48	0.145	160.5	346.7	160.5	2,128	6,935	0	1,416	8,351
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.30	6.38	0.3980	0.45	0.145	155.8	166.1	155.8	2,128	-5,350	27	1,191	-4,132
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.30	6.38	0.3980	0.48	0.145	160.5	346.7	160.5	2,128	6,000	28	1,225	7,254
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.71	6.42	0.3980	0.45	0.145	155.8	166.1	155.8	2,128	-5,242	27	1,167	-4,047
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.71	6.42	0.3980	0.48	0.145	160.5	346.7	160.5	2,128	5,879	28	1,201	7,107
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.06	6.46	0.3980	0.45	0.145	155.8	166.1	155.8	2,128	-5,123	27	1,140	-3,955

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.06	6.46	0.3980	0.48	0.145	160.5	346.7	160.5	2,128	5,746	28	1,174	6,948
											Totals:	2,661	166	9,891	12,719

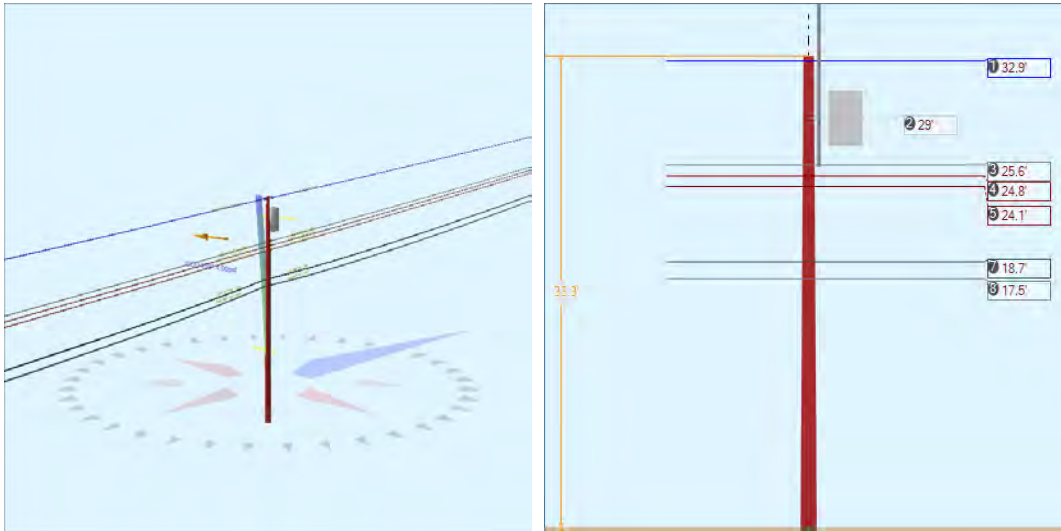
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.10	6.94	1.3300	2.25	0.337	155.8	166.1	155.8	925	-1,595	71	1,665	140
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.10	6.94	1.3300	2.34	0.337	160.5	346.7	160.5	925	1,789	73	1,713	3,575
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.19	7.00	1.5000	2.65	0.900	155.8	166.1	155.8	2,000	-3,293	124	1,737	-1,432
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.19	7.00	1.5000	2.76	0.900	160.5	346.7	160.5	2,000	3,694	128	1,788	5,609
		COMMUNICATION													
											Totals:	594	395	6,903	7,893

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	24.44	22.18	340.0	340.0	640.00	47.00	--	24.00	--	-46	1,336	1,290
											Totals:	-46	1,336	1,290

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.97	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153		
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.30	0.00	76.4	346.4	2.00	3.00	3.19	2	14	16		
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.71	0.00	76.4	346.4	2.00	3.00	3.19	2	13	15		
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.06	0.00	76.4	346.4	2.00	3.00	3.19	2	13	15		
Bolt	Three Bolt	Unknown, COMMUNICATION	20.10	0.00	76.4	346.4	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.19	0.00	76.4	346.4	5.00	3.00	0.00	6	0	6		
											Totals:	17	193	210

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.58	33.31	10.50	15.04	7.32	11.34	1.60e+6	60.00	57.00	32.97	32,830	329.24	7.87

Pole Num:	173W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.73	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.72	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023816 Deg	Longitude:	-84.457862 Deg	Elevation:	887.541115030076		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.6	0.0
Groundline	31.6	0.0
Vertical	14.1	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,330	262.0
Groundline	25,330	262.0
GL Allowable	81,775	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 262.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	462	40.8	12,178	48.1	14.9	1,016	415	4	1,020	15.0
Comms	396	35.0	7,540	29.8	9.2	629	680	7	635	9.3
PowerEquipments	55	4.8	1,854	7.3	2.3	155	1,216	12	167	2.4
Pole	181	16.0	3,061	12.1	3.7	255	1,835	18	273	4.0
Risers	32	2.8	505	2.0	0.6	42	45	0	43	0.6
Insulators	6	0.5	192	0.8	0.2	16	42	0	16	0.2
Pole Load	1,132	100.0	25,330	100.0	31.0	2,112	4,233	42	2,154	31.7
Pole Reserve Capacity			56,445		69.0	4,688			4,646	68.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 262.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	555	49.0	14,717	58.1	18.0	1,227	1,699	17	1,244	18.3
Unknown, COMMUNICATION	396	35.0	7,552	29.8	9.2	630	699	7	637	9.4
Pole	181	16.0	3,061	12.1	3.7	255	1,835	18	273	4.0
Totals:	1,132	100.0	25,330	100.0	31.0	2,112	4,233	42	2,154	31.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.92	16.43	0.3980	0.45	0.145	155.8	346.1	155.8	2,128	7,242	-2	1,335	8,574
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.92	16.43	0.3980	0.47	0.145	159.4	167.0	159.4	2,128	-6,145	-1	1,368	-4,779
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.57	6.63	0.3980	0.47	0.145	159.4	167.0	159.4	2,128	-4,774	-29	1,063	-3,740
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.57	6.63	0.3980	0.45	0.145	155.8	346.1	155.8	2,128	5,625	-28	1,037	6,633
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.80	6.68	0.3980	0.45	0.145	155.8	346.1	155.8	2,128	5,455	-28	1,005	6,432
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.80	6.68	0.3980	0.47	0.145	159.4	167.0	159.4	2,128	-4,630	-29	1,031	-3,628
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.07	6.72	0.3980	0.47	0.145	159.4	167.0	159.4	2,128	-4,494	-29	1,000	-3,523

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.07	6.72	0.3980	0.45	0.145	155.8	346.1	155.8	2,128	5,295	-29	976	6,242
Totals:												3,573	-176	8,815	12,212

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.73	7.05	1.3300	2.32	0.337	159.4	167.0	159.4	925	-1,520	73	1,586	140
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.73	7.05	1.3300	2.25	0.337	155.8	346.1	155.8	925	1,791	72	1,547	3,410
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.54	7.12	1.5000	2.73	0.900	159.4	167.0	159.4	2,000	-3,078	129	1,624	-1,325
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.54	7.12	1.5000	2.65	0.900	155.8	346.1	155.8	2,000	3,627	126	1,584	5,337
		COMMUNICATION													
Totals:												819	400	6,342	7,561

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.00	21.92	345.0	345.0	640.00	47.00	--	24.00	--	272	1,587	1,859
Totals:												272	1,587	1,859

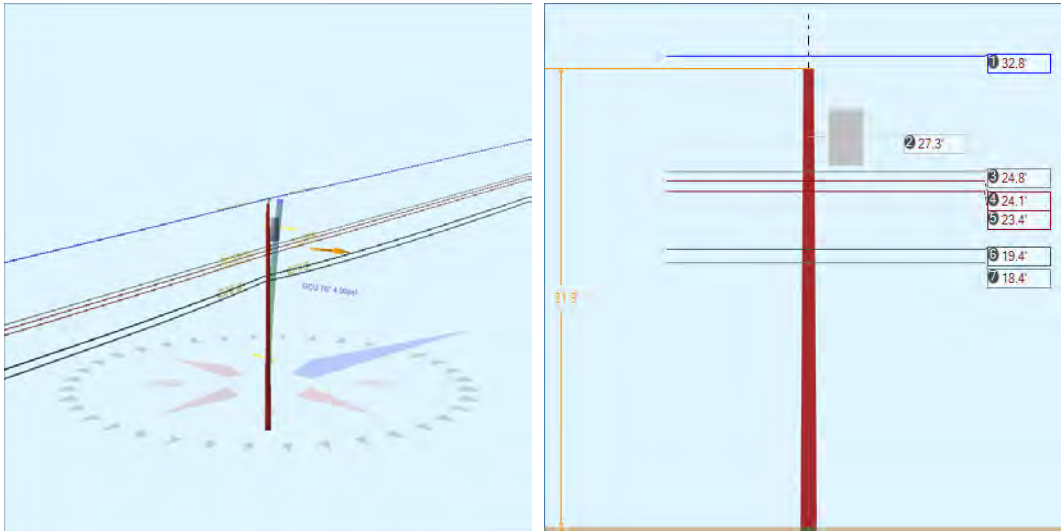
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 10.0°	Riser	KU, UTILITY	23.76	5.85	10.0	10.0	23.76	285.10	2.50	2.50	285.10	-3	510	507
Totals:												-3	510	507

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	32.92	0.00	0.0	0.0	3.00	3.80	12.75	-1	77	76
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.92	0.00	167.0	167.0	3.00	3.80	12.75	-1	77	77
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.57	0.00	76.5	166.5	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.80	0.00	76.1	346.1	2.00	3.00	3.19	-2	12	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.07	0.00	76.5	166.5	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	18.73	0.00	256.5	166.5	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	17.54	0.00	256.5	166.5	5.00	3.00	0.00	6	0	6
Totals:										3	189	192

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.50	33.45	10.49	15.42	7.32	11.38	1.60e+6	60.00	57.00	33.27	30,013	300.22	7.09

Pole Num:	174W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.08	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.21	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023384 Deg	Longitude:	-84.457722 Deg	Elevation:	898.549990476411		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.4	0.0
Groundline	31.4	0.0
Vertical	13.9	21.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,085	71.1
Groundline	24,085	71.1
GL Allowable	78,292	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 71.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	457	41.9	12,224	50.8	15.6	1,058	428	4	1,062	15.6
Comms	402	36.8	7,195	29.9	9.2	623	701	7	630	9.3
PowerEquipments	55	5.0	1,649	6.8	2.1	143	1,216	12	155	2.3
Pole	172	15.8	2,840	11.8	3.6	246	1,728	18	263	3.9
Insulators	6	0.5	178	0.7	0.2	15	55	1	16	0.2
Pole Load	1,091	100.0	24,085	100.0	30.8	2,084	4,128	42	2,126	31.3
Pole Reserve Capacity			54,207		69.2	4,716			4,674	68.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 71.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	518	47.4	14,061	58.4	18.0	1,217	1,680	17	1,234	18.1
Unknown, COMMUNICATION	402	36.8	7,184	29.8	9.2	622	720	7	629	9.2
Pole	172	15.8	2,840	11.8	3.6	246	1,728	18	263	3.9
Totals:	1,091	100.0	24,085	100.0	30.8	2,084	4,128	42	2,126	31.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.80	0.00	0.3980	0.51	0.145	165.5	166.2	165.5	2,128	-6,193	0	1,417	-4,776
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.80	0.00	0.3980	0.47	0.145	159.4	347.0	159.4	2,128	7,163	0	1,362	8,525
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.60	0.3980	0.51	0.145	165.5	166.2	165.5	2,128	-4,673	30	1,069	-3,574
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.76	6.60	0.3980	0.47	0.145	159.4	347.0	159.4	2,128	5,405	29	1,028	6,461
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.10	6.64	0.3980	0.51	0.145	165.5	166.2	165.5	2,128	-4,548	30	1,040	-3,478
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.10	6.64	0.3980	0.47	0.145	159.4	347.0	159.4	2,128	5,261	29	1,000	6,290
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.37	6.68	0.3980	0.51	0.145	165.5	166.2	165.5	2,128	-4,411	30	1,009	-3,372

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.37	6.68	0.3980	0.47	0.145	159.4	347.0	159.4	2,128	5,102	29	970	6,101
											Totals:	3,107	177	8,895	12,178

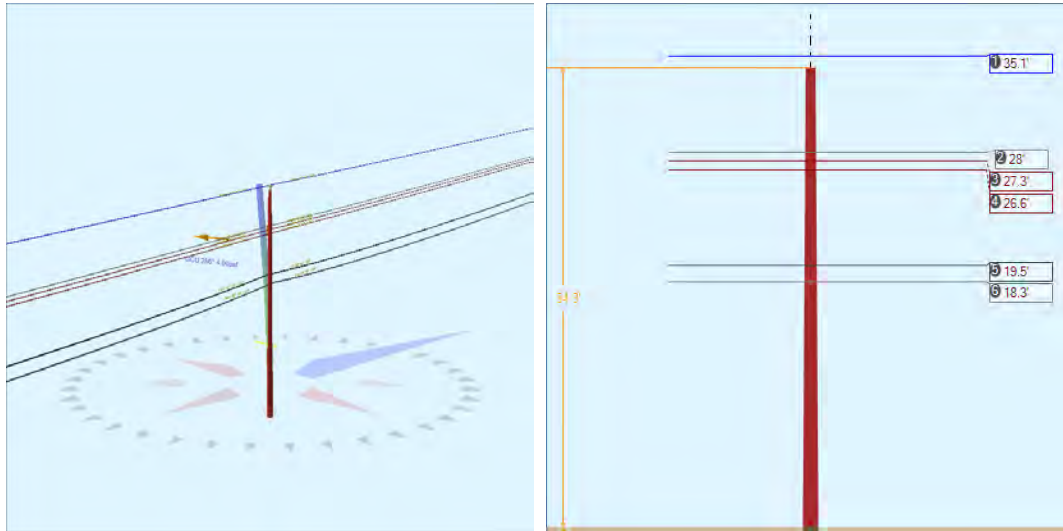
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.35	6.93	1.3300	2.43	0.337	165.5	166.2	165.5	925	-1,588	-75	1,702	40
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.35	6.93	1.3300	2.32	0.337	159.4	347.0	159.4	925	1,836	-72	1,637	3,401
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.41	6.98	1.5000	2.87	0.900	165.5	166.2	165.5	2,000	-3,266	-131	1,770	-1,627
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.41	6.98	1.5000	2.73	0.900	159.4	347.0	159.4	2,000	3,778	-127	1,702	5,354
		COMMUNICATION													
											Totals:	761	-405	6,812	7,168

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	27.29	21.94	345.0	345.0	640.00	47.00	--	24.00	--	151	1,492	1,642
											Totals:	151	1,492	1,642

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	31.92	0.00	0.0	0.0	13.00	9.00	10.50	0	148	148		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.76	0.00	76.6	346.6	2.00	3.00	3.19	2	11	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.10	0.00	76.2	166.2	2.00	3.00	3.19	2	11	13		
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.37	0.00	76.6	346.6	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.35	0.00	256.6	346.6	5.00	3.00	0.00	-5	0	-5		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.41	0.00	256.6	346.6	5.00	3.00	0.00	-6	0	-6		
											Totals:	-5	182	177

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.00	33.42	10.35	15.04	7.32	11.21	1.60e+6	60.00	57.00	31.92	29,800	297.01	7.19

Pole Num:	175W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.74	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023002 Deg	Longitude:	-84.457603 Deg	Elevation:	912.293182193218		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.5	0.0
Groundline	27.5	0.0
Vertical	7.1	18.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,838	256.4
Groundline	22,838	256.4
GL Allowable	84,400	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 256.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	405	41.0	12,086	52.9	14.3	969	434	4	974	14.3
Comms	389	39.4	7,256	31.8	8.6	582	712	7	589	8.7
Pole	188	19.0	3,291	14.4	3.9	264	1,915	18	282	4.2
Insulators	6	0.6	205	0.9	0.2	16	55	1	17	0.2
Pole Load	988	100.0	22,838	100.0	27.1	1,832	3,117	30	1,862	27.4
Pole Reserve Capacity			61,562		72.9	4,968			4,938	72.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 256.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	411	41.6	12,291	53.8	14.6	986	470	5	990	14.6
Unknown, COMMUNICATION	389	39.4	7,256	31.8	8.6	582	731	7	589	8.7
Pole	188	19.0	3,291	14.4	3.9	264	1,915	18	282	4.2
Totals:	988	100.0	22,838	100.0	27.1	1,832	3,117	30	1,862	27.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.13	0.00	0.3980	0.50	0.145	164.3	166.6	164.3	2,128	276	0	1,513	1,789
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.13	0.00	0.3980	0.51	0.145	165.5	346.2	165.5	2,128	246	0	1,523	1,769
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.97	6.54	0.3980	0.50	0.145	164.3	166.6	164.3	2,128	220	30	1,204	1,453
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.97	6.54	0.3980	0.51	0.145	165.5	346.2	165.5	2,128	196	30	1,212	1,437
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.33	6.58	0.3980	0.50	0.145	164.3	166.6	164.3	2,128	215	30	1,176	1,421
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.33	6.58	0.3980	0.51	0.145	165.5	346.2	165.5	2,128	191	30	1,184	1,405
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.64	6.62	0.3980	0.50	0.145	164.3	166.6	164.3	2,128	210	30	1,147	1,386
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.64	6.62	0.3980	0.51	0.145	165.5	346.2	165.5	2,128	186	30	1,155	1,371
Totals:											1,739	179	10,114	12,032

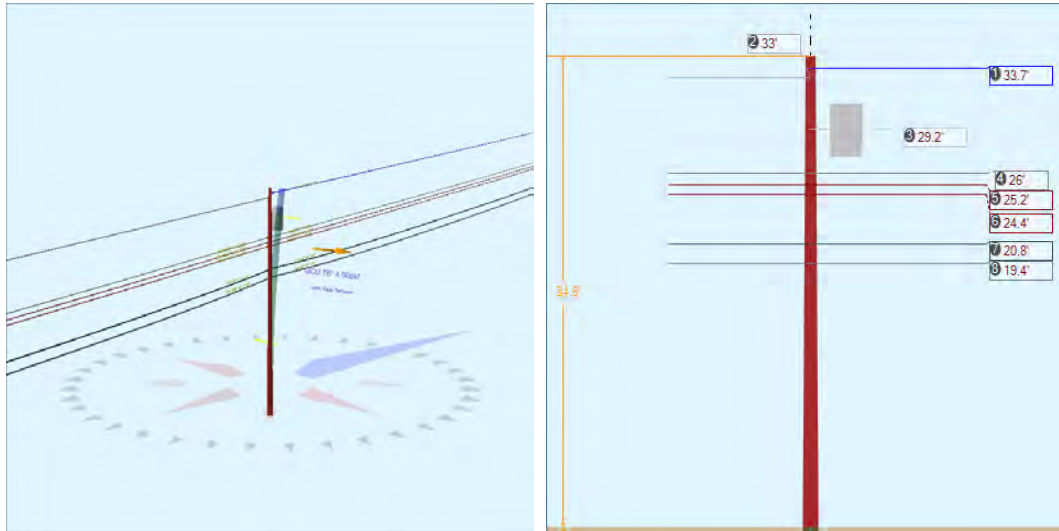
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	19.53	7.06	1.3300	2.41	0.337	164.3	166.6	164.4	925	67	76	1,713	1,856
CATV	CATV 1.0 Unknown, COMMUNICATION	19.53	7.06	1.3300	2.43	0.337	165.5	346.2	165.5	925	59	77	1,725	1,861
Telco	TELE 1.5 Unknown, COMMUNICATION	18.30	7.13	1.5000	2.85	0.900	164.3	166.6	164.4	2,000	135	-134	1,754	1,755

Telco	TELE 1.5	Unknown,	18.30	7.13	1.5000	2.87	0.900	165.5	346.2	165.5	2,000	120	-135	1,766	1,751	
												COMMUNICATION				
												Totals:	382	-116	6,958	7,223

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.26	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.97	0.00	256.4	166.4	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.33	0.00	256.4	166.4	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.64	0.00	256.4	166.4	2.00	3.00	3.19	2	12	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.53	0.00	256.4	166.4	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.30	0.00	76.4	166.4	5.00	3.00	0.00	-6	0	-6	
										Totals:	6	197	204

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.64	32.96	10.74	12.65	7.32	11.50	1.60e+6	60.00	57.00	34.26	43,837	438.97	14.08

Pole Num:	176W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.39	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.23	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022571 Deg	Longitude:	-84.458370 Deg	Elevation:	892.104136717854		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.5	0.0
Groundline	26.5	0.0
Vertical	1.7	21.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,130	72.9
Groundline	22,130	72.9
GL Allowable	85,340	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	148.0	165.7		14.3	75.6	14.8	350.0
? EHS 3/8 (Span/Head)			33.0	20.6	75.6	23.6	350.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 72.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	445	47.6	12,577	56.8	14.7	1,005	341	3	1,008	14.8
Comms	344	36.8	7,253	32.8	8.5	579	640	6	586	8.6
GuyBraces	-103	-11.1	-3,405	-15.4	-4.0	-272	35	0	-272	-4.0
PowerEquipments	55	5.9	2,250	10.2	2.6	180	1,216	12	191	2.8
Pole	190	20.4	3,337	15.1	3.9	267	1,944	19	285	4.2
Insulators	4	0.4	119	0.5	0.1	10	36	0	10	0.1
Pole Load	934	100.0	22,130	100.0	25.9	1,768	4,212	40	1,808	26.6
Pole Reserve Capacity			63,210		74.1	5,032			4,992	73.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 72.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	400	42.8	11,530	52.1	13.5	921	1,609	15	937	13.8
Unknown, COMMUNICATION	344	36.8	7,264	32.8	8.5	580	659	6	587	8.6
Pole	190	20.4	3,337	15.1	3.9	267	1,944	19	285	4.2
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	934	100.0	22,130	100.0	25.9	1,768	4,212	40	1,808	26.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.70	16.47	0.3980	0.41	0.145	148.3	345.9	148.3	2,128	4,878	1	1,307	6,186
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.01	6.68	0.3980	0.41	0.145	148.0	165.7	148.0	2,128	-3,514	-27	1,007	-2,534
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.01	6.68	0.3980	0.41	0.145	148.3	345.9	148.3	2,128	3,765	-27	1,009	4,746
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.15	6.74	0.3980	0.41	0.145	148.0	165.7	148.0	2,128	-3,398	-27	974	-2,452
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.15	6.74	0.3980	0.41	0.145	148.3	345.9	148.3	2,128	3,641	-27	975	4,589
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.44	6.78	0.3980	0.41	0.145	148.0	165.7	148.0	2,128	-3,303	-27	946	-2,384

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.44	6.78	0.3980	0.41	0.145	148.3	345.9	148.3	2,128	3,538	-28	948	4,459	
												Totals:	5,607	-163	7,166	12,610

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
CATV	CATV 1.0	Unknown, COMMUNICATION	20.81	7.00	1.3300	2.11	0.337	148.0	165.7	148.0	925	-1,222	68	1,642	487	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.81	7.00	1.3300	2.12	0.337	148.3	345.9	148.3	925	1,309	68	1,645	3,022	
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.09	1.5000	2.48	0.900	148.0	165.7	148.0	2,000	-2,462	120	1,672	-671	
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.09	1.5000	2.49	0.900	148.3	345.9	148.3	2,000	2,638	120	1,675	4,433	
												Totals:	263	376	6,633	7,272

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Transformer	1PH-50KVA	KU, UTILITY	29.23	21.99	360.0	360.0	640.00	47.00	--	24.00	--	655	1,601	2,256	
												Totals:	655	1,601	2,256

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)				
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.70	0.00	345.9	345.9	3.00	3.80	12.75	0	79	80			
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.01	0.00	255.8	345.8	2.00	3.00	3.19	-2	12	10			
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.15	0.00	255.8	345.8	2.00	3.00	3.19	-2	12	10			
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.44	0.00	255.8	345.8	2.00	3.00	3.19	-2	11	9			
Bolt	Three Bolt	Unknown, COMMUNICATION	20.81	0.00	75.8	345.8	5.00	3.00	0.00	6	0	6			
Bolt	Three Bolt	Unknown, COMMUNICATION	19.39	0.00	75.8	345.8	5.00	3.00	0.00	6	0	6			
												Totals:	5	114	120

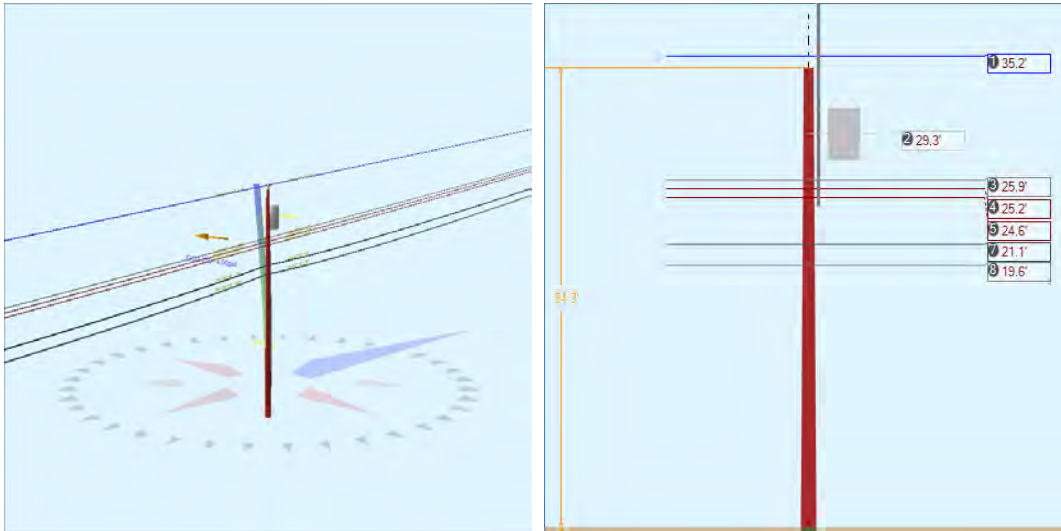
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	33.02	33.02	147.98	0.375	75.00	165.7	0.0	0.273	146.17	2.63

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	3,265	2,968	2,856	0	2,856	-141	-3,414
Totals:									0	2,856	-141	-3,414

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	147.98	165.7	20,000	1.00	20,000	2,968	2,856	14.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.88	33.46	10.64	9.26	7.32	11.54	1.60e+6	60.00	57.00	34.61	245,083	2477.44	58.82

Pole Num:	177W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.73	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.022964 Deg	Longitude:	-84.458492 Deg	Elevation:	896.605609330548		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.7	0.0
Groundline	32.7	0.0
Vertical	14.5	22.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,062	262.5
Groundline	27,062	262.5
GL Allowable	84,447	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 262.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	462	41.1	13,020	48.1	15.4	1,046	397	4	1,049	15.4
Comms	386	34.3	8,219	30.4	9.7	660	651	6	666	9.8
PowerEquipments	55	4.9	1,903	7.0	2.3	153	1,216	12	165	2.4
Pole	188	16.7	3,284	12.1	3.9	264	1,917	18	282	4.1
Risers	27	2.4	423	1.6	0.5	34	45	0	34	0.5
Insulators	6	0.5	212	0.8	0.3	17	55	1	18	0.3
Pole Load	1,124	100.0	27,062	100.0	32.1	2,173	4,280	41	2,214	32.6
Pole Reserve Capacity			57,385		68.0	4,627			4,586	67.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 262.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	550	49.0	15,548	57.5	18.4	1,249	1,694	16	1,265	18.6
Unknown, COMMUNICATION	386	34.3	8,230	30.4	9.8	661	670	6	667	9.8
Pole	188	16.7	3,284	12.1	3.9	264	1,917	18	282	4.1
Totals:	1,124	100.0	27,062	100.0	32.1	2,173	4,280	41	2,214	32.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.15	0.00	0.3980	0.41	0.145	148.3	167.9	148.3	2,128	-6,027	0	1,361	-4,666
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.15	0.00	0.3980	0.43	0.145	153.1	346.9	153.1	2,128	7,328	0	1,402	8,730
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.67	0.3980	0.41	0.145	148.3	167.9	148.3	2,128	-4,439	27	1,003	-3,410
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.90	6.67	0.3980	0.43	0.145	153.1	346.9	153.1	2,128	5,397	28	1,032	6,458
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.25	6.71	0.3980	0.41	0.145	148.3	167.9	148.3	2,128	-4,328	27	977	-3,323
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.25	6.71	0.3980	0.43	0.145	153.1	346.9	153.1	2,128	5,262	28	1,006	6,296
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.61	6.75	0.3980	0.41	0.145	148.3	167.9	148.3	2,128	-4,218	27	953	-3,238

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.61	6.75	0.3980	0.43	0.145	153.1	346.9	153.1	2,128	5,129	28	981	6,138	
												Totals:	4,103	166	8,715	12,984

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
CATV	CATV 1.0	Unknown,	21.10	6.96	1.3300	2.12	0.337	148.3	167.9	148.3	925	-1,572	67	1,664	160	
		COMMUNICATION														
CATV	CATV 1.0	Unknown,	21.10	6.96	1.3300	2.20	0.337	153.1	346.9	153.1	925	1,911	70	1,714	3,694	
		COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.55	7.06	1.5000	2.49	0.900	148.3	167.9	148.3	2,000	-3,149	119	1,685	-1,345	
		COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.55	7.06	1.5000	2.59	0.900	153.1	346.9	153.1	2,000	3,829	123	1,735	5,687	
		COMMUNICATION														
												Totals:	1,019	379	6,799	8,197

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Transformer	1PH-50KVA	KU, UTILITY	29.35	21.96	345.0	345.0	640.00	47.00	--	24.00	--	291	1,607	1,898	
												Totals:	291	1,607	1,898

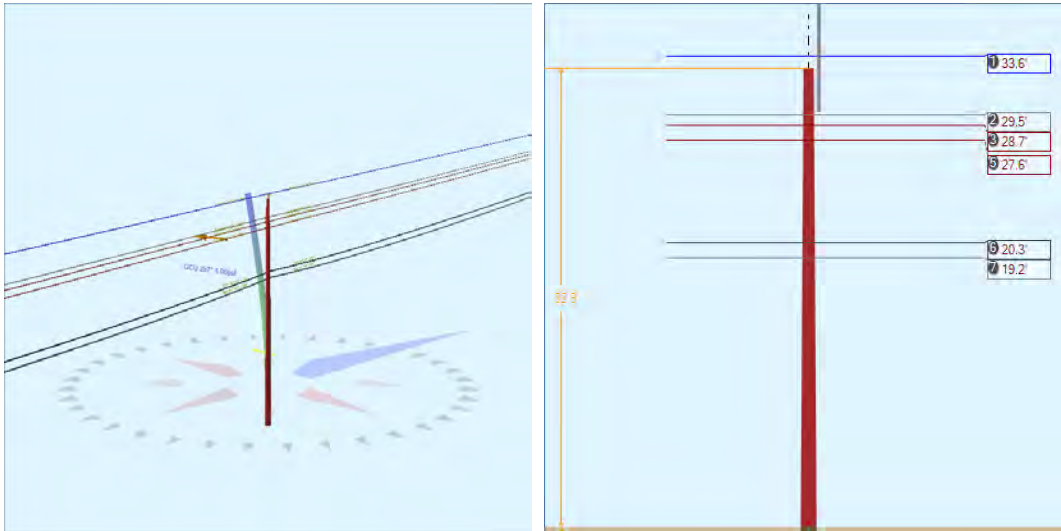
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Riser 27.0°	Riser	KU, UTILITY	23.62	5.85	27.0	27.0	23.62	283.38	2.50	2.50	283.38	-6	428	422	
												Totals:	-6	428	422

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.28	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.90	0.00	257.4	167.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.25	0.00	257.4	167.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.61	0.00	257.4	167.4	2.00	3.00	3.19	2	11	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.10	0.00	257.4	167.4	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	19.55	0.00	257.4	167.4	5.00	3.00	0.00	6	0	6
Totals:										17	194	212

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.10	33.51	10.59	15.74	7.32	11.50	1.60e+6	60.00	57.00	34.28	29,467	295.18	6.90

Pole Num:	178W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.23	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023385 Deg	Longitude:	-84.458632 Deg	Elevation:	905.345880430827		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.1	0.0 257.0
Groundline	27.1	0.0 257.0
Vertical	7.2	18.6 257.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,470	256.8 257.0
Groundline	21,470	256.8 257.0
GL Allowable	80,480	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 256.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	359	38.5	10,936	50.9	13.6	920	396	4	924	13.6
Comms	351	37.6	6,586	30.7	8.2	554	648	6	560	8.2
Pole	178	19.1	3,018	14.1	3.8	254	1,795	18	272	4.0
Risers	40	4.3	742	3.5	0.9	62	53	1	63	0.9
Insulators	6	0.6	188	0.9	0.2	16	55	1	16	0.2
Pole Load	934	100.0	21,470	100.0	26.7	1,806	2,947	29	1,835	27.0
Pole Reserve Capacity			59,010		73.3	4,994			4,965	73.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 256.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	405	43.4	11,878	55.3	14.8	999	485	5	1,004	14.8
Unknown, COMMUNICATION	351	37.6	6,575	30.6	8.2	553	667	7	560	8.2
Pole	178	19.1	3,018	14.1	3.8	254	1,795	18	272	4.0
Totals:	934	100.0	21,470	100.0	26.7	1,806	2,947	29	1,835	27.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.65	0.00	0.3980	0.43	0.145	153.1	166.9	153.1	2,128	76	0	1,349	1,425
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.65	0.00	0.3980	0.40	0.145	147.3	346.6	147.3	2,128	299	0	1,299	1,598
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.45	6.36	0.3980	0.43	0.145	153.1	166.9	153.1	2,128	66	27	1,181	1,274
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.45	6.36	0.3980	0.40	0.145	147.3	346.6	147.3	2,128	262	26	1,136	1,424
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.69	6.41	0.3980	0.43	0.145	153.1	166.9	153.1	2,128	65	27	1,150	1,242
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.69	6.41	0.3980	0.40	0.145	147.3	346.6	147.3	2,128	255	26	1,107	1,388
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.64	6.47	0.3980	0.43	0.145	153.1	166.9	153.1	2,128	62	27	1,108	1,197

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.64	6.47	0.3980	0.40	0.145	147.3	346.6	147.3	2,128	246	26	1,066	1,338
											Totals:	1,331	159	9,396	10,886

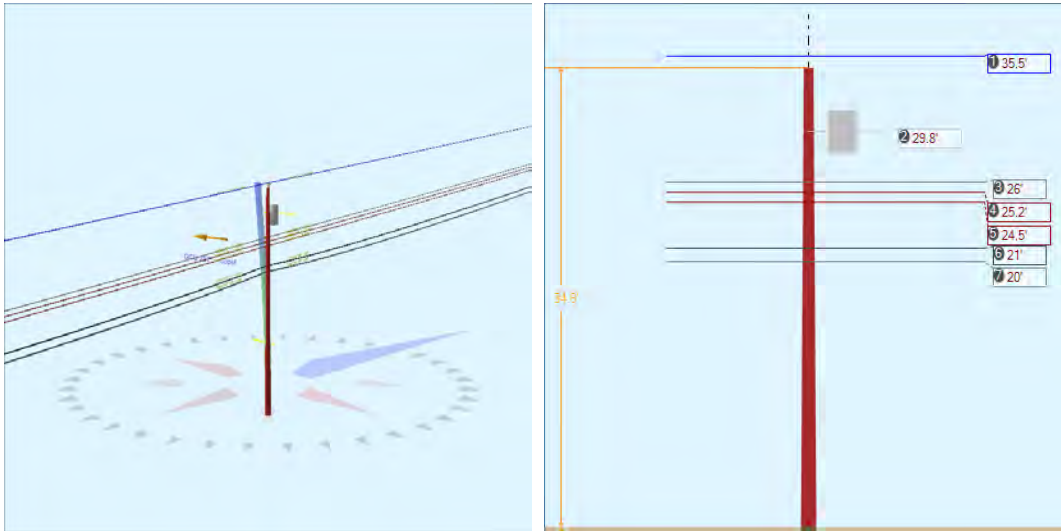
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.33	6.92	1.3300	2.20	0.337	153.1	166.9	153.1	925	20	-69	1,661	1,611
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.33	6.92	1.3300	2.10	0.337	147.3	346.6	147.3	925	79	-67	1,598	1,610
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.25	6.98	1.5000	2.59	0.900	153.1	166.9	153.1	2,000	41	-122	1,718	1,637
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.25	6.98	1.5000	2.47	0.900	147.3	346.6	147.3	2,000	161	-118	1,654	1,697
		COMMUNICATION													
											Totals:	300	-376	6,631	6,555

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	27.98	5.85	360.0	360.0	27.98	335.76	2.50	2.50	335.76	-3	742	739
											Totals:	-3	742	739

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.77	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153		
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.45	0.00	256.7	166.7	2.00	3.00	3.19	2	14	16		
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.69	0.00	256.7	166.7	2.00	3.00	3.19	2	13	15		
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.64	0.00	256.7	166.7	2.00	3.00	3.19	2	13	15		
Bolt	Three Bolt	Unknown, COMMUNICATION	20.33	0.00	76.7	166.7	5.00	3.00	0.00	-5	0	-5		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.25	0.00	76.7	166.7	5.00	3.00	0.00	-6	0	-6		
											Totals:	-5	192	188

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.64	33.01	10.56	12.26	7.32	11.32	1.60e+6	60.00	57.00	32.77	40,972	409.36	13.89

Pole Num:	179W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.24	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.023752 Deg	Longitude:	-84.458759 Deg	Elevation:	888.700109304908		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.9	0.0
Groundline	27.9	0.0
Vertical	11.3	21.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,384	259.5
Groundline	23,384	259.5
GL Allowable	85,405	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 259.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	377	38.7	10,694	45.7	12.5	848	400	4	852	12.5
Comms	359	36.9	7,767	33.2	9.1	616	655	6	622	9.1
PowerEquipments	42	4.3	1,343	5.7	1.6	106	694	7	113	1.7
Pole	190	19.5	3,366	14.4	3.9	267	1,946	19	285	4.2
Insulators	6	0.6	215	0.9	0.3	17	55	1	18	0.3
Pole Load	974	100.0	23,384	100.0	27.4	1,854	3,749	36	1,890	27.8
Pole Reserve Capacity			62,021		72.6	4,946			4,910	72.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 259.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	424	43.6	12,240	52.3	14.3	970	1,129	11	981	14.4
Unknown, COMMUNICATION	359	36.9	7,778	33.3	9.1	617	674	6	623	9.2
Pole	190	19.5	3,366	14.4	3.9	267	1,946	19	285	4.2
Totals:	974	100.0	23,384	100.0	27.4	1,854	3,749	36	1,890	27.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.51	0.00	0.3980	0.40	0.145	147.3	166.6	147.3	2,128	-3,818	0	1,369	-2,450
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.51	0.00	0.3980	0.45	0.145	156.2	346.2	156.2	2,128	4,345	0	1,451	5,796
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.00	6.69	0.3980	0.40	0.145	147.3	166.6	147.3	2,128	-2,795	27	1,002	-1,766
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.00	6.69	0.3980	0.45	0.145	156.2	346.2	156.2	2,128	3,181	29	1,062	4,271
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.24	6.73	0.3980	0.40	0.145	147.3	166.6	147.3	2,128	-2,713	27	972	-1,713
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.24	6.73	0.3980	0.45	0.145	156.2	346.2	156.2	2,128	3,087	29	1,031	4,147
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.49	6.78	0.3980	0.40	0.145	147.3	166.6	147.3	2,128	-2,633	27	944	-1,662

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.49	6.78	0.3980	0.45	0.145	156.2	346.2	156.2	2,128	2,996	29	1,000	4,026
Totals:												1,650	168	8,830	10,648

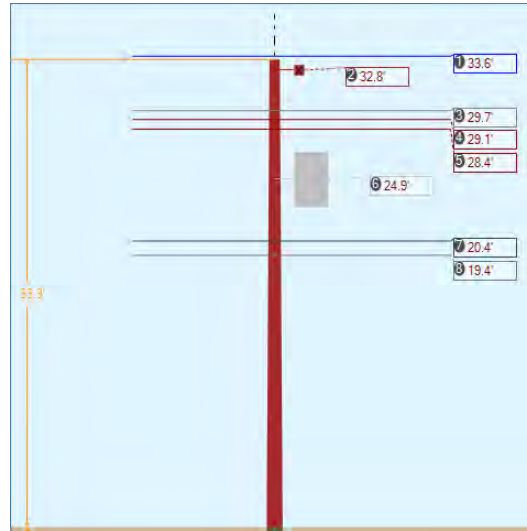
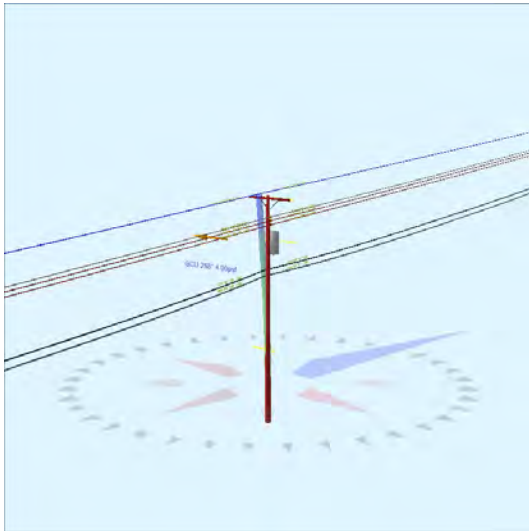
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.02	6.99	1.3300	2.10	0.337	147.3	166.6	147.3	925	-982	67	1,651	736
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.02	6.99	1.3300	2.26	0.337	156.2	346.2	156.2	925	1,118	71	1,750	2,939
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.01	7.05	1.5000	2.47	0.900	147.3	166.6	147.3	2,000	-2,021	119	1,717	-186
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.01	7.05	1.5000	2.66	0.900	156.2	346.2	156.2	2,000	2,300	126	1,819	4,245
		COMMUNICATION													
Totals:												414	383	6,936	7,734

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.81	20.95	345.0	345.0	365.00	39.00	--	22.00	--	95	1,242	1,337
Totals:												95	1,242	1,337

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.63	0.00	0.0	0.0	13.00	9.00	10.50	0	161	161
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.00	0.00	256.4	166.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.24	0.00	256.4	166.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.49	0.00	256.4	166.4	2.00	3.00	3.19	2	11	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.02	0.00	256.4	166.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.01	0.00	256.4	166.4	5.00	3.00	0.00	6	0	6
Totals:										17	196	214

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.14	33.35	10.68	14.53	7.32	11.54	1.60e+6	60.00	57.00	34.63	33,266	331.80	8.85

Pole Num:	180W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.66	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.75	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024175 Deg		Longitude:	-84.458887 Deg		Elevation:	900.357471756358 Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.7	0.0 257.9
Groundline	27.7	0.0 257.9
Vertical	13.5	21.1 257.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,229	262.6 257.9
Groundline	22,229	262.6 257.9
GL Allowable	81,961	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 262.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	335	36.4	10,089	45.4	12.3	839	406	4	843	12.4
Comms	347	37.6	7,258	32.7	8.9	603	665	7	610	9.0
PowerEquipments	55	5.9	1,656	7.5	2.0	138	1,216	12	150	2.2
Pole	181	19.7	3,072	13.8	3.8	255	1,841	18	274	4.0
Crossarms	1	0.1	49	0.2	0.1	4	95	1	5	0.1
Insulators	3	0.3	105	0.5	0.1	9	42	0	9	0.1
Pole Load	922	100.0	22,229	100.0	27.1	1,848	4,264	42	1,890	27.8
Pole Reserve Capacity			59,732		72.9	4,952			4,910	72.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 262.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	393	42.6	11,839	53.3	14.4	984	1,644	16	1,001	14.7
Unknown, COMMUNICATION	347	37.6	7,269	32.7	8.9	604	684	7	611	9.0
Pole	181	19.7	3,072	13.8	3.8	255	1,841	18	274	4.0
<Undefined>	1	0.1	49	0.2	0.1	4	95	1	5	0.1
Totals:	922	100.0	22,229	100.0	27.1	1,848	4,264	42	1,890	27.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.58	18.81	0.3980	0.45	0.145	156.2	166.2	156.2	2,128	-8,015	79	1,365	-6,571
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.58	18.81	0.3980	0.43	0.145	151.8	346.1	151.8	2,128	8,139	77	1,326	9,543
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.69	6.38	0.3980	0.45	0.145	156.2	166.2	156.2	2,128	-7,083	-27	1,206	-5,904
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.69	6.38	0.3980	0.43	0.145	151.8	346.1	151.8	2,128	7,193	-26	1,172	8,339
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.06	6.42	0.3980	0.45	0.145	156.2	166.2	156.2	2,128	-6,932	-27	1,181	-5,779
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.06	6.42	0.3980	0.43	0.145	151.8	346.1	151.8	2,128	7,040	-27	1,147	8,160

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.36	6.46	0.3980	0.45	0.145	156.2	166.2	156.2	2,128	-6,767	-28	1,152	-5,642
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.36	6.46	0.3980	0.43	0.145	151.8	346.1	151.8	2,128	6,871	-27	1,120	7,964
											Totals:	445	-5	9,670	10,110

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.40	6.95	1.3300	2.26	0.337	156.2	166.2	156.2	925	-2,115	71	1,689	-356
CATV	CATV 1.0	Unknown, COMMUNICATION	20.40	6.95	1.3300	2.18	0.337	151.8	346.1	151.8	925	2,148	69	1,641	3,858
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.01	1.5000	2.66	0.900	156.2	166.2	156.2	2,000	-4,347	124	1,754	-2,468
Telco	TELE 1.5	Unknown, COMMUNICATION	19.39	7.01	1.5000	2.56	0.900	151.8	346.1	151.8	2,000	4,414	121	1,705	6,239
											Totals:	100	385	6,789	7,273

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	24.91	22.17	345.0	345.0	640.00	47.00	--	24.00	--	299	1,361	1,660
											Totals:	299	1,361	1,660

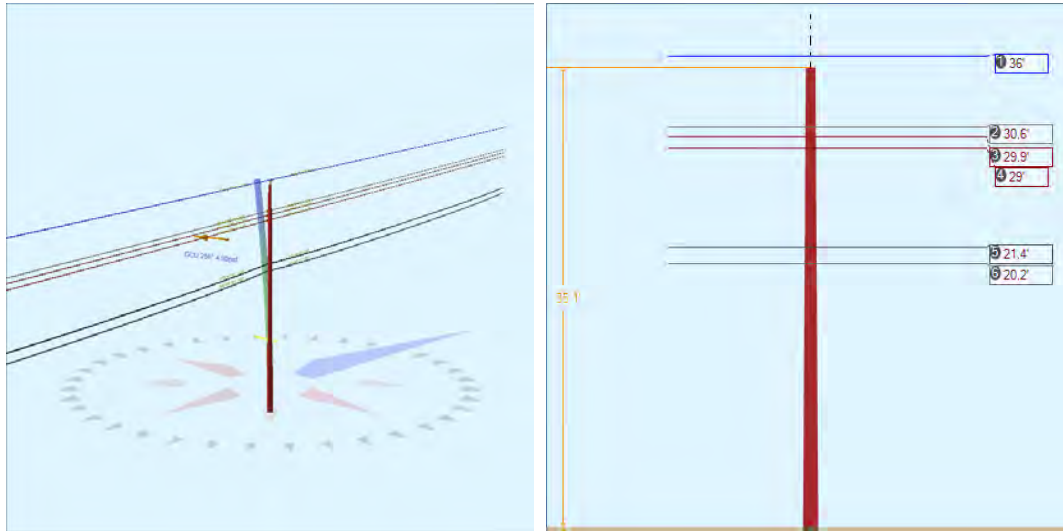
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm		32.77	5.45	346.1	346.1	50.00	4.50	3.50	96.00	5	44	49	
											Totals:	5	44	49

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.96	-18.00	273.0	0.0	6.00	3.50	7.50	18	42	60
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.69	0.00	76.2	166.2	2.00	3.00	3.19	-2	14	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.06	0.00	76.2	166.2	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.36	0.00	76.2	166.2	2.00	3.00	3.19	-2	13	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.40	0.00	256.2	166.2	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	19.39	0.00	256.2	166.2	5.00	3.00	0.00	6	0	6
Totals:										22	82	105

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.07	33.38	10.52	15.34	7.32	11.38	1.60e+6	60.00	57.00	33.34	31,590	315.84	7.41

Pole Num:	181W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.44	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024591 Deg	Longitude:	-84.459007 Deg	Elevation:	888.471183515466		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.9	0.0
Groundline	28.9	0.0
Vertical	6.9	19.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,756	255.6
Groundline	24,756	255.6
GL Allowable	86,810	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 255.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	425	43.8	13,527	54.6	15.6	1,055	347	3	1,059	15.6
Comms	346	35.6	7,528	30.4	8.7	587	569	5	593	8.7
Pole	194	20.0	3,478	14.1	4.0	271	1,989	19	290	4.3
Insulators	6	0.6	223	0.9	0.3	17	55	1	18	0.3
Pole Load	971	100.0	24,756	100.0	28.5	1,931	2,961	28	1,959	28.8
Pole Reserve Capacity			62,054		71.5	4,869			4,841	71.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 255.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	431	44.4	13,739	55.5	15.8	1,072	383	4	1,075	15.8
Unknown, COMMUNICATION	346	35.6	7,539	30.5	8.7	588	588	6	594	8.7
Pole	194	20.0	3,478	14.1	4.0	271	1,989	19	290	4.3
Totals:	971	100.0	24,756	100.0	28.5	1,931	2,961	28	1,959	28.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	36.02	0.00	0.3980	0.24	0.145	112.0	345.1	112.0	2,128	734	0	1,057	1,791
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	36.02	0.00	0.3980	0.43	0.145	151.8	166.1	151.8	2,128	604	0	1,433	2,037
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	30.61	6.44	0.3980	0.43	0.145	151.8	166.1	151.8	2,128	513	27	1,217	1,757
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	30.61	6.44	0.3980	0.24	0.145	112.0	345.1	112.0	2,128	624	20	898	1,541
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	29.86	6.48	0.3980	0.43	0.145	151.8	166.1	151.8	2,128	500	27	1,187	1,714
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	29.86	6.48	0.3980	0.24	0.145	112.0	345.1	112.0	2,128	608	20	876	1,504
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.99	6.54	0.3980	0.43	0.145	151.8	166.1	151.8	2,128	486	27	1,152	1,666
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	28.99	6.54	0.3980	0.24	0.145	112.0	345.1	112.0	2,128	591	20	850	1,461
Totals:										4,661	141	8,670	13,471	

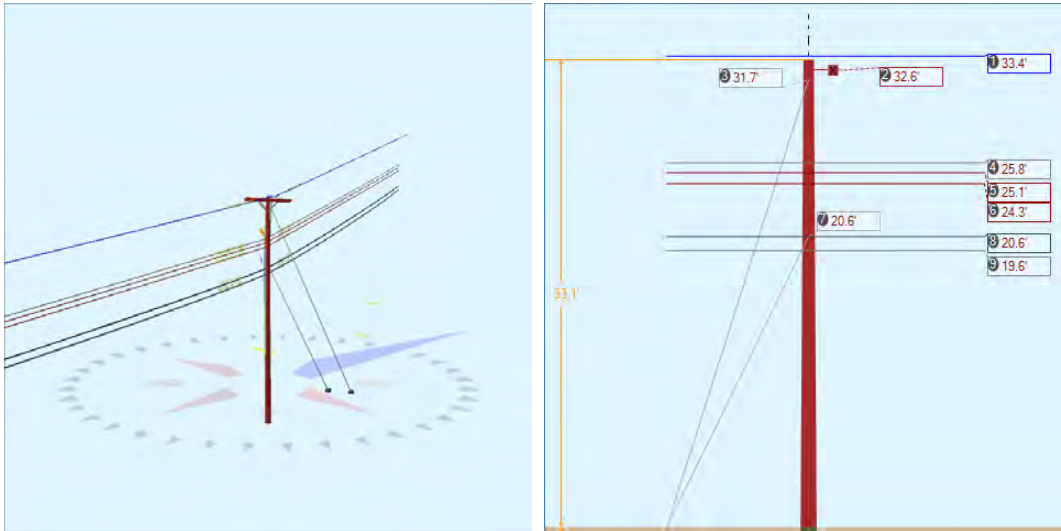
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.40	7.00	1.3300	2.18	0.337	151.8	166.1	151.8	925	156	70	1,733	1,959
CATV	CATV 1.0 Unknown, COMMUNICATION	21.40	7.00	1.3300	1.51	0.337	112.0	345.1	112.0	925	190	51	1,279	1,520
Telco	TELE 1.5 Unknown, COMMUNICATION	20.16	7.07	1.5000	2.56	0.900	151.8	166.1	151.8	2,000	318	123	1,785	2,225

Telco	TELE 1.5	Unknown,	20.16	7.07	1.5000	1.75	0.900	112.0	345.1	112.0	2,000	386	91	1,317	1,793
COMMUNICATION												Totals: 1,049 334 6,114 7,497			

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.15	0.00	0.0	0.0	13.00	9.00	10.50	0	163	163
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.61	0.00	255.6	165.6	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.86	0.00	255.6	165.6	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.99	0.00	255.6	165.6	2.00	3.00	3.19	2	13	16
Bolt	Three Bolt	Unknown, COMMUNICATION	21.40	0.00	255.6	165.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.16	0.00	255.6	165.6	5.00	3.00	0.00	6	0	6
Totals:										17	205	222

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.12	33.01	10.83	12.54	7.32	11.60	1.60e+6	60.00	57.00	35.15	43,079	429.12	14.49

Pole Num:	182W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.89	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.66	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024866 Deg	Longitude:	-84.459116 Deg	Elevation:	898.975958491037		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.0	0.0
Groundline	22.0	0.0
Vertical	7.4	25.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,546	298.3
Groundline	16,546	298.3
GL Allowable	81,371	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	15.0	63.1		18.0	310.0	19.3	250.0
? EHS 3/8 (Down)			31.7	25.9	310.0	30.6	250.0
? Single Helix Anchor	11.0	64.0		14.4	310.0	15.7	250.0
? EHS 1/4 (Down)			20.6	48.2	310.0	57.6	250.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 298.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,705	179.6	36,479	220.5	44.8	3,872	294	3	3,875	57.0
Comms	639	67.3	10,167	61.4	12.5	1,079	481	5	1,084	15.9
GuyBraces	-1,628	-171.4	-33,874	-204.7	-41.6	-3,595	8,749	86	-3,509	-51.6
Pole	177	18.6	2,347	14.2	2.9	249	1,823	18	267	3.9
Crossarms	52	5.5	1,341	8.1	1.7	142	190	2	144	2.1
Insulators	4	0.4	86	0.5	0.1	9	53	1	10	0.1
Pole Load	950	100.0	16,546	100.0	20.3	1,756	11,590	115	1,871	27.5
Pole Reserve Capacity			64,825		79.7	5,044			4,929	72.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 298.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,709	180.0	36,559	221.0	44.9	3,880	328	3	3,883	57.1
Unknown, COMMUNICATION	639	67.3	10,172	61.5	12.5	1,080	500	5	1,085	15.9
Unknown, UTILITY	-1,628	-171.4	-33,874	-204.7	-41.6	-3,595	8,749	86	-3,509	-51.6
Pole	177	18.6	2,347	14.2	2.9	249	1,823	18	267	3.9
<Undefined>	52	5.5	1,341	8.1	1.7	142	190	2	144	2.1
Totals:	950	100.0	16,546	100.0	20.3	1,756	11,590	115	1,871	27.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.37	18.00	0.3980	0.18	0.145	112.0	165.1	112.0	2,128	-63,193	-31	411	-62,814
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.37	18.00	0.3980	0.17	0.145	111.0	332.0	111.0	2,128	76,815	-30	202	76,986
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.61	0.3980	0.18	0.145	112.0	165.1	112.0	2,128	-48,840	13	317	-48,509
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.61	0.3980	0.17	0.145	111.0	332.0	111.0	2,128	59,367	13	156	59,536
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.11	6.65	0.3980	0.18	0.145	112.0	165.1	112.0	2,128	-47,521	13	309	-47,199

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.11	6.65	0.3980	0.17	0.145	111.0	332.0	111.0	2,128	57,764	13	152	57,929
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.33	6.70	0.3980	0.18	0.145	112.0	165.1	112.0	2,128	-46,051	13	299	-45,738
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.33	6.70	0.3980	0.17	0.145	111.0	332.0	111.0	2,128	55,977	13	147	56,138
Totals:												44,319	18	1,993	46,329

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, 20.58	6.92	1.3300	1.49	0.337	112.0	165.1	112.0	925	-16,929	33	516	-16,380	
CATV	CATV 1.0	Unknown, 20.58	6.92	1.3300	1.47	0.337	111.0	332.0	111.1	925	20,578	33	254	20,864	
Telco	TELE 1.5	Unknown, 19.59	6.98	1.5000	1.74	0.900	112.0	165.1	112.0	2,000	-34,852	58	537	-34,257	
Telco	TELE 1.5	Unknown, 19.59	6.98	1.5000	1.72	0.900	111.0	332.0	111.1	2,000	42,364	57	264	42,685	
Totals:												11,161	180	1,570	12,912

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.56	5.44	332.0	332.0	50.00	4.50	3.50	96.00	0	1,704	1,704	
Totals:											0	1,704	1,704

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	32.74	18.00	45.2	0.0	6.00	3.50	7.50	-19	82	63	
Spool	Spool Insulator - 25 kV	25.80	0.00	248.5	158.5	2.00	3.00	3.19	1	12	13	
Spool	Spool Insulator - 25 kV	25.11	0.00	248.5	158.5	2.00	3.00	3.19	1	11	13	
Spool	Spool Insulator - 25 kV	24.33	0.00	248.5	158.5	2.00	3.00	3.19	1	11	12	
Bolt	Three Bolt	20.58	0.00	248.5	158.5	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt	19.59	0.00	248.5	158.5	5.00	3.00	0.00	4	0	4	
Totals:										-8	116	109

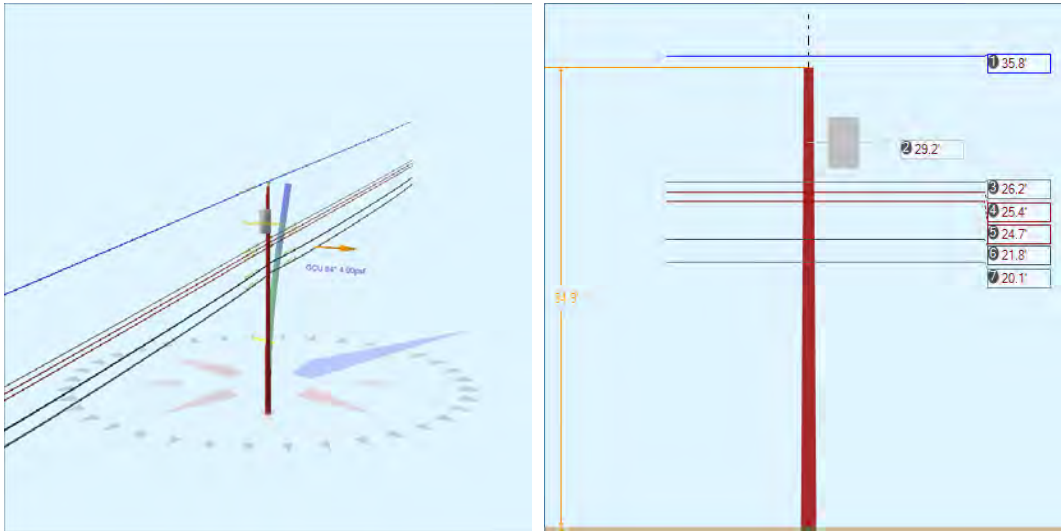
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	Unknown, UTILITY	31.70	0.00	15.00	0.375	75.00	63.1	64.4	0.273	33.44	0.76
EHS 1/4	Down	Unknown, UTILITY	20.58	0.00	11.00	0.25	75.00	64.0	61.6	0.121	21.66	0.89

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,241	3,856	3,590	3,239	1,549	-885	-27,156
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,446	3,133	2,888	2,541	1,371	-801	-15,865
Totals:										5,780	2,920	-1,686	-43,020

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	15.00	63.1	20,000	1.00	20,000	3,856	3,590	19.3
Single Helix Anchor			18.00	11.00	64.0	20,000	1.00	20,000	3,133	2,888	15.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.56	34.11	10.29	16.19	7.32	11.36	1.60e+6	60.00	57.00	33.11	157,023	1566.21	13.51

Pole Num:	183W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.12	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.34	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025149 Deg	Longitude:	-84.459271 Deg	Elevation:	890.213342177579		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.0	64.1
Groundline	24.0	64.1
Vertical	13.3	64.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,149	69.0
Groundline	20,149	69.0
GL Allowable	86,088	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 69.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	298	36.1	8,507	42.2	9.9	669	302	3	672	9.9
Comms	275	33.3	6,063	30.1	7.0	477	495	5	481	7.1
PowerEquipments	55	6.6	1,953	9.7	2.3	154	1,216	12	165	2.4
Pole	191	23.2	3,410	16.9	4.0	268	1,967	19	287	4.2
Insulators	6	0.7	215	1.1	0.3	17	55	1	17	0.3
Pole Load	824	100.0	20,149	100.0	23.4	1,584	4,036	38	1,623	23.9
Pole Reserve Capacity			65,939		76.6	5,216			5,177	76.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 69.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	358	43.5	10,665	52.9	12.4	839	1,554	15	853	12.5
Unknown, COMMUNICATION	275	33.3	6,074	30.2	7.1	478	514	5	482	7.1
Pole	191	23.2	3,410	16.9	4.0	268	1,967	19	287	4.2
Totals:	824	100.0	20,149	100.0	23.4	1,584	4,036	38	1,623	23.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.76	0.00	0.3980	0.23	0.145	111.0	152.0	111.0	2,128	9,340	0	1,032	10,372
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.76	0.00	0.3980	0.26	0.145	118.5	332.4	118.5	2,128	-8,812	0	1,102	-7,710
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.19	6.69	0.3980	0.23	0.145	111.0	152.0	111.0	2,128	6,838	20	755	7,613
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.19	6.69	0.3980	0.26	0.145	118.5	332.4	118.5	2,128	-6,451	22	807	-5,623
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.42	6.74	0.3980	0.23	0.145	111.0	152.0	111.0	2,128	6,637	20	733	7,391
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.42	6.74	0.3980	0.26	0.145	118.5	332.4	118.5	2,128	-6,262	22	783	-5,458
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.74	6.78	0.3980	0.23	0.145	111.0	152.0	111.0	2,128	6,459	21	714	7,193

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.74	6.78	0.3980	0.26	0.145	118.5	332.4	118.5	2,128	-6,094	22	762	-5,310
											Totals:	1,654	126	6,688	8,468

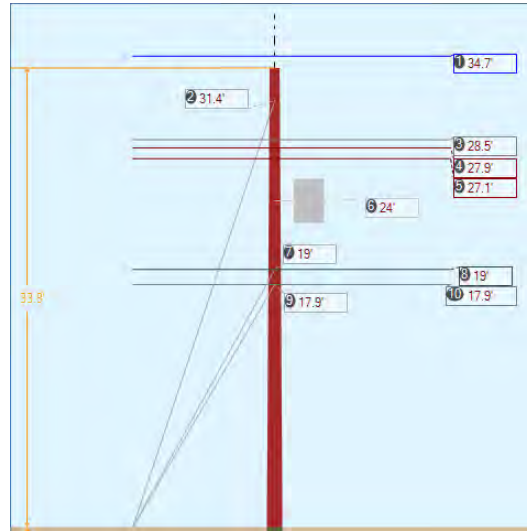
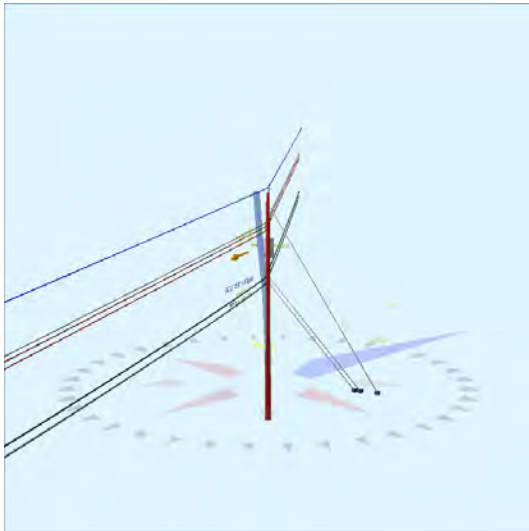
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.85	6.95	1.3300	1.49	0.337	111.0	152.0	111.1	925	2,479	50	1,284	3,814
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.85	6.95	1.3300	1.61	0.337	118.5	332.4	118.5	925	-2,339	54	1,371	-914
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.12	7.06	1.5000	1.73	0.900	111.0	152.0	111.1	2,000	4,937	89	1,293	6,319
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.12	7.06	1.5000	1.88	0.900	118.5	332.4	118.5	2,000	-4,658	95	1,380	-3,183
		COMMUNICATION													
											Totals:	419	288	5,329	6,035

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.17	22.01	150.0	150.0	640.00	47.00	--	24.00	--	351	1,593	1,944
											Totals:	351	1,593	1,944

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.88	0.00	0.0	0.0	13.00	9.00	10.50	0	162	162		
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.19	0.00	62.2	332.2	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.42	0.00	62.2	332.2	2.00	3.00	3.19	2	12	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.74	0.00	62.2	332.2	2.00	3.00	3.19	2	11	14		
Bolt	Three Bolt	Unknown, COMMUNICATION	21.85	0.00	62.2	332.2	5.00	3.00	0.00	5	0	5		
Bolt	Three Bolt	Unknown, COMMUNICATION	20.12	0.00	62.2	332.2	5.00	3.00	0.00	6	0	6		
											Totals:	17	197	214

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.11	33.49	10.67	15.34	7.32	11.57	1.60e+6	60.00	57.00	34.88	30,269	303.43	7.52

Pole Num:	184W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.21	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.92	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.025439 Deg	Longitude:	-84.459477 Deg	Elevation:	887.006401441388		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	13.4	0.0
Groundline	13.4	0.0
Vertical	6.2	25.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,897	158.4
Groundline	9,897	158.4
GL Allowable	83,153	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.4	60.0		17.6	157.9	19.6	240.0
? EHS 3/8 (Down)			31.4	25.4	157.9	31.1	240.0
? Single Helix Anchor	16.4	58.9		6.1	157.9	7.2	240.0
? EHS 1/4 (Down)			19.0	20.3	157.9	26.3	240.0
? Single Helix Anchor	15.3	58.0		5.9	157.9	6.8	230.0
? EHS 1/4 (Down)			17.9	19.6	157.9	25.1	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 158.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	561	115.8	15,184	153.4	18.3	1,358	299	3	1,361	20.0
Comms	202	41.8	3,425	34.6	4.1	306	491	5	311	4.6
GuyBraces	-512	-105.6	-11,654	-117.8	-14.0	-1,042	7,279	71	-971	-14.3
PowerEquipments	42	8.6	-149	-1.5	-0.2	-13	694	7	-7	-0.1
Pole	185	38.2	2,908	29.4	3.5	260	1,877	18	278	4.1
Insulators	6	1.2	183	1.9	0.2	16	55	1	17	0.2
Pole Load	484	100.0	9,897	100.0	11.9	885	10,694	104	989	14.5
Pole Reserve Capacity			73,256		88.1	5,915			5,811	85.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 158.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	352	72.6	7,841	79.2	9.4	701	5,556	54	755	11.1
Unknown, COMMUNICATION	-52	-10.8	-852	-8.6	-1.0	-76	3,261	32	-44	-0.7
Pole	185	38.2	2,908	29.4	3.5	260	1,877	18	278	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	484	100.0	9,897	100.0	11.9	885	10,694	104	989	14.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.67	0.00	0.3980	0.20	0.145	118.5	152.4	118.5	2,128	95,421	0	11	95,431
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.67	0.00	0.3980	0.17	0.145	108.8	319.3	108.8	2,128	-90,671	0	103	-90,568
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.52	6.48	0.3980	0.20	0.145	118.5	152.4	118.5	2,128	78,479	5	9	78,493
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.52	6.48	0.3980	0.17	0.145	108.8	319.3	108.8	2,128	-74,573	4	85	-74,484
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.91	6.52	0.3980	0.20	0.145	118.5	152.4	118.5	2,128	76,787	5	9	76,801
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.91	6.52	0.3980	0.17	0.145	108.8	319.3	108.8	2,128	-72,965	4	83	-72,878
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.12	6.57	0.3980	0.20	0.145	118.5	152.4	118.5	2,128	74,628	5	8	74,641
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.12	6.57	0.3980	0.17	0.145	108.8	319.3	108.8	2,128	-70,913	4	81	-70,828
Totals:											16,193	26	388	16,608	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.96	7.06	1.3300	1.59	0.337	118.5	152.4	118.5	925	22,680	12	12	22,704
CATV	CATV 1.0	Unknown, COMMUNICATION	18.96	7.06	1.3300	1.44	0.337	108.8	319.3	108.8	925	-21,551	11	115	-21,426
Telco	TELE 1.5	Unknown, COMMUNICATION	17.85	7.13	1.5000	1.86	0.900	118.5	152.4	118.5	2,000	46,157	21	12	46,190
Telco	TELE 1.5	Unknown, COMMUNICATION	17.85	7.13	1.5000	1.68	0.900	108.8	319.3	108.8	2,000	-43,860	19	118	-43,722
Totals:											3,427	63	257	3,747	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	24.05	21.25	320.0	320.0	365.00	39.00	--	22.00	--	-1,166	1,003	-163
Totals:												-1,166	1,003	-163

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	33.79	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.52	0.00	235.9	145.9	2.00	3.00	3.19	0	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.91	0.00	235.9	145.9	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.12	0.00	235.9	145.9	2.00	3.00	3.19	0	13	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.96	0.00	235.9	145.9	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	17.85	0.00	235.9	145.9	5.00	3.00	0.00	1	0	1
Totals:										4	196	200

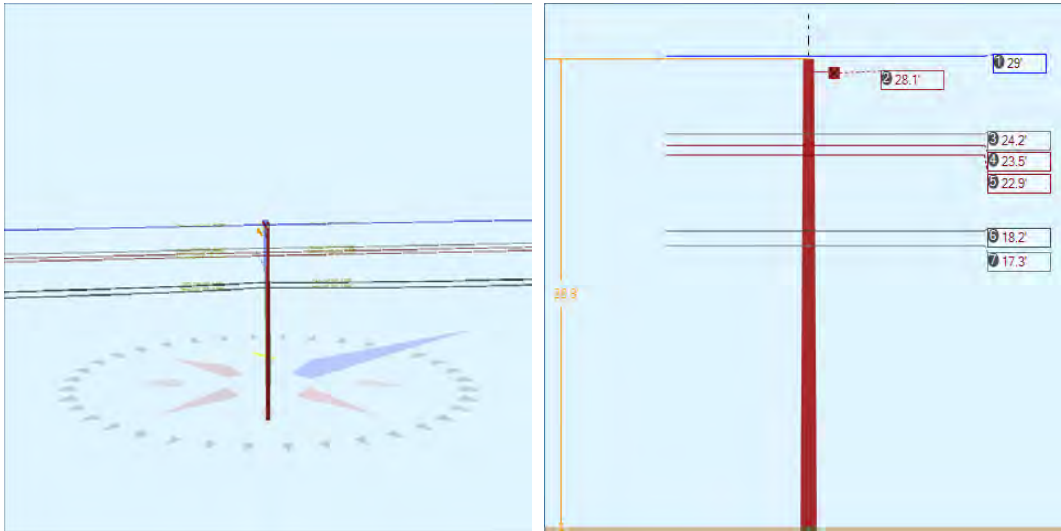
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	31.38	0.00	19.41	0.375	75.00	60.0	58.1	0.273	35.23	0.78
EHS 1/4	Down	Unknown, COMMUNICATION	18.96	0.00	16.37	0.25	75.00	58.9	49.0	0.121	23.31	0.40
EHS 1/4	Down	Unknown, COMMUNICATION	17.85	0.00	15.29	0.25	75.00	58.0	49.3	0.121	21.75	0.36

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,305	3,913	3,524	2,990	1,864	-271	-8,066
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,576	1,433	1,216	918	797	-132	-2,357
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,499	1,363	1,171	887	765	-137	-2,324
Totals:										4,795	3,426	-540	-12,747

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	19.41	60.0	20,000	1.00	20,000	3,913	3,524	19.6
Single Helix Anchor			18.00	16.37	58.9	20,000	1.00	20,000	1,433	1,216	7.2
Single Helix Anchor			18.00	15.29	58.0	20,000	1.00	20,000	1,363	1,171	6.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.95	33.98	10.40	15.39	7.32	11.44	1.60e+6	60.00	57.00	33.79	172,060	1724.85	16.13

Pole Num:	185W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.23	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.42	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020521 Deg	Longitude:	-84.461026 Deg	Elevation:	936.844225283245		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.5	0.0 307.9
Groundline	23.5	0.0 307.9
Vertical	6.9	16.8 307.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,832	307.8 307.9
Groundline	12,832	307.8 307.9
GL Allowable	55,635	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 307.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	236	36.6	5,701	44.4	10.3	698	252	3	702	10.3
Comms	265	41.1	4,954	38.6	8.9	607	502	6	613	9.0
Pole	140	21.7	2,101	16.4	3.8	257	1,261	16	273	4.0
Crossarms	1	0.2	35	0.3	0.1	4	95	1	5	0.1
Insulators	3	0.4	42	0.3	0.1	5	42	1	6	0.1
Pole Load	644	100.0	12,832	100.0	23.1	1,572	2,152	27	1,600	23.5
Pole Reserve Capacity			42,803		76.9	5,228			5,200	76.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 307.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	238	37.0	5,733	44.7	10.3	702	275	3	706	10.4
Unknown, COMMUNICATION	265	41.1	4,964	38.7	8.9	608	521	7	615	9.0
Pole	140	21.7	2,101	16.4	3.8	257	1,261	16	273	4.0
<Undefined>	1	0.2	35	0.3	0.1	4	95	1	5	0.1
Totals:	644	100.0	12,832	100.0	23.1	1,572	2,152	27	1,600	23.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.95	45.29	0.3250	0.22	0.107	114.0	38.1	114.0	1,684	-284	-116	795	394
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.95	45.29	0.3250	0.23	0.107	118.4	218.2	118.4	1,684	370	-120	825	1,075
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.16	6.11	0.3250	0.22	0.107	114.0	38.1	114.0	1,684	-237	16	663	441
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.16	6.11	0.3250	0.23	0.107	118.4	218.2	118.4	1,684	308	16	688	1,013
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.46	6.15	0.3250	0.22	0.107	114.0	38.1	114.0	1,684	-230	16	643	429
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.46	6.15	0.3250	0.23	0.107	118.4	218.2	118.4	1,684	299	16	668	984
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	22.86	6.18	0.3250	0.22	0.107	114.0	38.1	114.0	1,684	-224	16	627	419

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	22.86	6.18	0.3250	0.23	0.107	118.4	218.2	118.4	1,684	292	17	652	960
											Totals:	292	-139	5,561	5,714

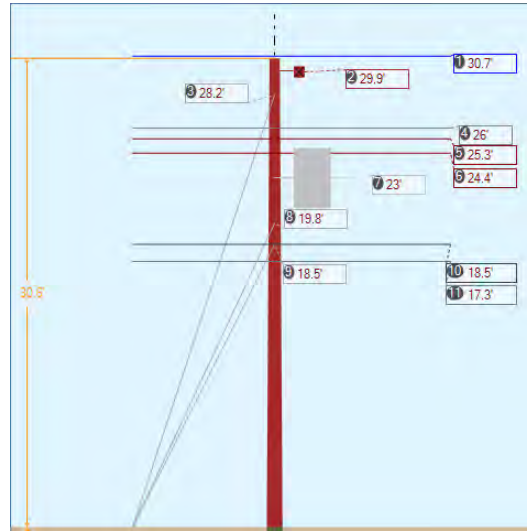
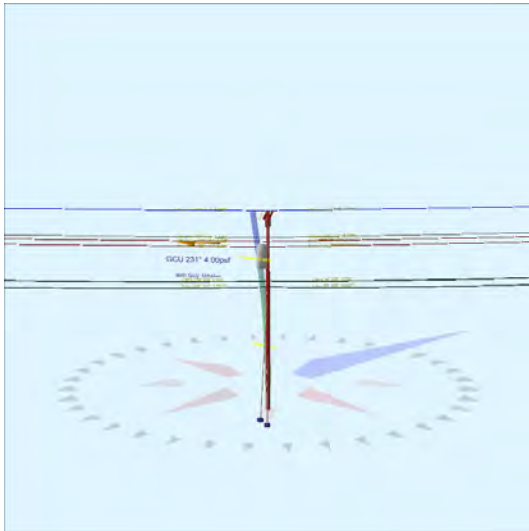
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.20	6.45	1.3300	1.54	0.337	114.0	38.1	114.0	925	-98	48	1,107	1,058
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.20	6.45	1.3300	1.61	0.337	118.4	218.2	118.4	925	128	50	1,151	1,328
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.31	6.50	1.5000	1.79	0.900	114.0	38.1	114.0	2,000	-202	85	1,151	1,034
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.31	6.50	1.5000	1.88	0.900	118.4	218.2	118.4	2,000	262	88	1,196	1,546
		COMMUNICATION													
											Totals:	90	271	4,605	4,966

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	28.14	5.13	218.1	218.1	50.00	4.50	3.50	96.00	0	34	35	
										Totals:	0	34	35

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV	KU, UTILITY	28.33	-45.00	134.6	0.0	6.00	3.50	7.50	-43	36	-6	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.16	0.00	308.1	218.1	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.46	0.00	308.1	218.1	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.86	0.00	308.1	218.1	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.20	0.00	308.1	218.1	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.31	0.00	308.1	218.1	5.00	3.00	0.00	5	0	5	
										Totals:	-27	69	42

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.80	32.90	9.36	9.93	6.69	10.01	1.60e+6	60.00	57.00	28.77	31,153	311.86	14.49

Pole Num:	186W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.41	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020218 Deg	Longitude:	-84.461326 Deg	Elevation:	921.739952558809		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	17.5	0.0 231.2
Groundline	17.5	0.0 231.2
Vertical	5.0	22.2 316.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,593	233.3 231.2
Groundline	9,593	233.3 231.2
GL Allowable	59,205	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	23.3	135.3		14.7	231.2	17.0	305.0
? EHS 3/8 (Down)			28.2	11.0	231.2	14.1	310.0
? EHS 3/8 (Down)			19.8	10.3	231.2	13.1	300.0
? Single Helix Anchor	20.7	138.3		1.4	231.2	3.1	0.0
? EHS 1/4 (Down)			18.5	4.7	231.2	11.4	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 233.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	283	69.5	7,228	75.3	12.2	868	253	3	871	12.8
Comms	128	31.4	2,213	23.1	3.7	266	503	6	272	4.0
GuyBraces	-280	-68.8	-6,300	-65.7	-10.6	-757	3,473	42	-714	-10.5
PowerEquipments	55	13.4	2,156	22.5	3.6	259	1,216	15	274	4.0
Pole	151	37.0	2,271	23.7	3.8	273	1,377	17	290	4.3
Crossarms	67	16.4	1,915	20.0	3.2	230	190	2	232	3.4
Insulators	4	1.0	110	1.2	0.2	13	53	1	14	0.2
Pole Load	407	100.0	9,593	100.0	16.2	1,153	7,065	86	1,239	18.2
Pole Reserve Capacity			49,612		83.8	5,648			5,561	81.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 233.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	74	18.2	3,408	35.5	5.8	409	4,687	57	467	6.9
Unknown, COMMUNICATION	116	28.4	1,999	20.8	3.4	240	811	10	250	3.7
Pole	151	37.0	2,271	23.7	3.8	273	1,377	17	290	4.3
<Undefined>	67	16.4	1,915	20.0	3.2	230	190	2	232	3.4
Totals:	407	100.0	9,593	100.0	16.2	1,153	7,065	86	1,239	18.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	30.74	0.00	0.3250	0.16	0.107	114.5	228.9	114.5	1,684	67,128	0	3	67,131
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	30.74	0.00	0.3250	0.17	0.107	118.4	38.2	118.4	1,684	-65,005	0	52	-64,953
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.04	6.10	0.3250	0.17	0.107	118.4	38.2	118.4	1,684	-55,050	3	44	-55,004
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.04	6.10	0.3250	0.16	0.107	114.5	228.9	114.5	1,684	56,849	3	2	56,854
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.34	6.14	0.3250	0.17	0.107	118.4	38.2	118.4	1,684	-53,557	3	42	-53,512

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.34	6.14	0.3250	0.16	0.107	114.5	228.9	114.5	1,684	55,306	3	2	55,311
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.40	6.20	0.3250	0.17	0.107	118.4	38.2	118.4	1,684	-51,575	3	41	-51,531
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.40	6.20	0.3250	0.16	0.107	114.5	228.9	114.5	1,684	53,260	3	2	53,265
Totals:											7,356	16	188	7,560	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 18.46	6.54	1.3300	1.59	0.337	118.4	38.2	118.4	925	-21,429	9	69	-21,352
CATV	CATV 1.0	Unknown, 18.46	6.54	1.3300	1.53	0.337	114.5	228.9	114.5	925	22,129	8	4	22,141
Telco	TELE 1.5	Unknown, 17.34	6.61	1.5000	1.86	0.900	118.4	38.2	118.4	2,000	-43,540	15	70	-43,455
Telco	TELE 1.5	Unknown, 17.34	6.61	1.5000	1.79	0.900	114.5	228.9	114.5	2,000	44,963	15	4	44,981
Totals:											2,122	47	146	2,315

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	23.05	21.78	170.0	170.0	640.00	47.00	--	24.00	--	992	1,263	2,255
Totals:											992	1,263	2,255	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	29.93	5.13	228.9	228.9	50.00	4.50	3.50	96.00	0	2,004	2,004	
Totals:											0	2,004	2,004

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	30.12	0.00	228.9	0.0	6.00	3.50	7.50	0	77	77
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.04	0.00	313.5	223.5	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.34	0.00	313.5	223.5	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.40	0.00	313.5	223.5	2.00	3.00	3.19	0	11	12

Bolt	Three Bolt	Unknown, COMMUNICATION	18.46	0.00	313.5	223.5	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	17.34	0.00	313.5	223.5	5.00	3.00	0.00	1	0	1
Totals:										3	112	115

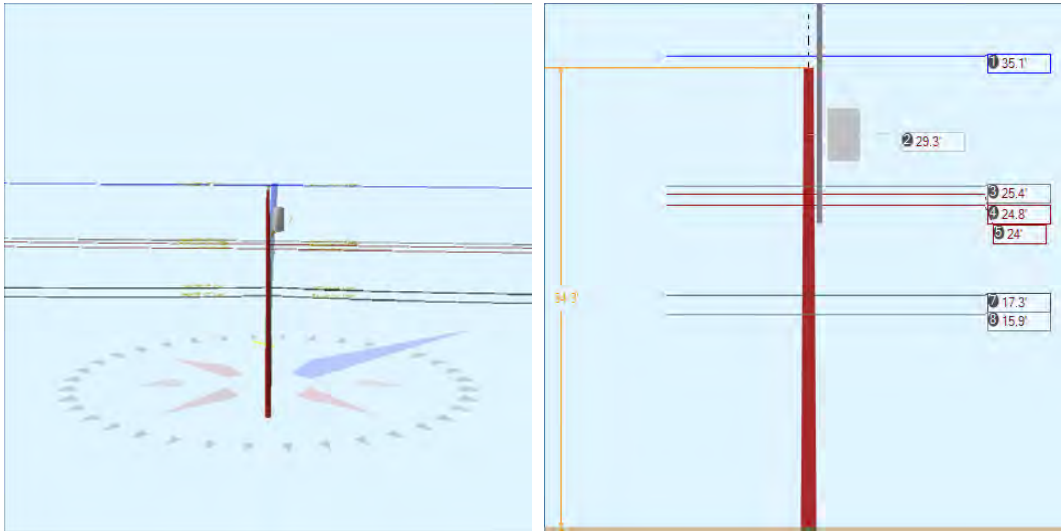
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	28.21	0.00	23.28	0.375	75.00	135.3	50.3	0.273	34.89	0.33
EHS 3/8	Down	KU, UTILITY	19.83	0.00	23.28	0.375	75.00	135.3	40.3	0.273	28.83	0.26
EHS 1/4	Down	Unknown, COMMUNICATION	18.46	0.00	20.70	0.25	75.00	138.3	41.6	0.121	25.98	0.10

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,948	1,771	1,522	1,171	972	-136	-3,534
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,809	1,645	1,421	919	1,084	-151	-2,830
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	684	622	282	187	211	-18	-226
Totals:										2,278	2,267	-305	-6,590

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	23.28	135.3	20,000	1.00	20,000	3,403	2,932	17.0
Single Helix Anchor		18.00	20.70	138.3	20,000	1.00	20,000	622	282	3.1

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.25	33.77	9.34	11.83	6.69	10.21	1.60e+6	60.00	57.00	30.59	140,908	1412.97	20.00

Pole Num:	187W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020001 Deg	Longitude:	-84.461595 Deg	Elevation:	916.714216019058		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	20.8	0.0
Groundline	20.8	0.0
Vertical	12.7	21.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,103	326.5
Groundline	17,103	326.5
GL Allowable	84,389	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 326.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	231	29.6	6,472	37.8	7.7	519	263	3	521	7.7
Comms	268	34.4	4,782	28.0	5.7	383	523	5	388	5.7
PowerEquipments	54	7.0	1,857	10.9	2.2	149	1,216	12	160	2.4
Pole	186	23.9	3,268	19.1	3.9	262	1,915	18	280	4.1
Risers	34	4.3	513	3.0	0.6	41	42	0	42	0.6
Insulators	6	0.8	211	1.2	0.3	17	55	1	17	0.3
Pole Load	780	100.0	17,103	100.0	20.3	1,370	4,014	39	1,409	20.7
Pole Reserve Capacity			67,286		79.7	5,430			5,391	79.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 326.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	325	41.7	9,041	52.9	10.7	724	1,557	15	739	10.9
Unknown, COMMUNICATION	268	34.4	4,794	28.0	5.7	384	542	5	389	5.7
Pole	186	23.9	3,268	19.1	3.9	262	1,915	18	280	4.1
Totals:	780	100.0	17,103	100.0	20.3	1,370	4,014	39	1,409	20.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.13	0.00	0.3250	0.27	0.107	127.9	228.9	127.9	1,684	-7,859	0	1,072	-6,787
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.13	0.00	0.3250	0.22	0.107	114.5	48.9	114.5	1,684	7,859	0	960	8,819
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.43	6.70	0.3250	0.22	0.107	114.5	48.9	114.5	1,684	5,688	17	695	6,400
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.43	6.70	0.3250	0.27	0.107	127.9	228.9	127.9	1,684	-5,688	19	775	-4,893
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.82	6.73	0.3250	0.22	0.107	114.5	48.9	114.5	1,684	5,551	17	678	6,247
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.82	6.73	0.3250	0.27	0.107	127.9	228.9	127.9	1,684	-5,551	19	757	-4,775
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.02	6.78	0.3250	0.22	0.107	114.5	48.9	114.5	1,684	5,372	17	656	6,045

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.02	6.78	0.3250	0.27	0.107	127.9	228.9	127.9	1,684	-5,372	19	732	-4,620
Totals:												0	110	6,325	6,435

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.30	7.19	1.3300	1.55	0.337	114.5	48.9	114.5	925	2,125	54	1,048	3,227
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.30	7.19	1.3300	1.76	0.337	127.9	228.9	127.9	925	-2,125	60	1,170	-895
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.87	7.28	1.5000	1.80	0.900	114.5	48.9	114.5	2,000	4,215	94	1,051	5,360
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.87	7.28	1.5000	2.06	0.900	127.9	228.9	127.9	2,000	-4,215	105	1,173	-2,936
		COMMUNICATION													
Totals:												0	313	4,442	4,755

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.28	21.96	50.0	50.0	640.00	47.00	--	24.00	--	253	1,593	1,846
Totals:												253	1,593	1,846

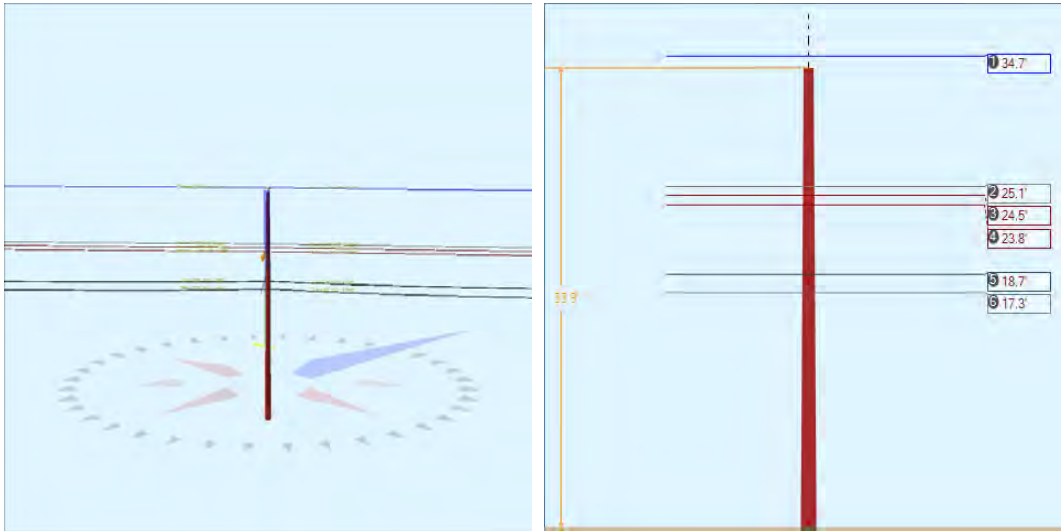
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	22.32	5.85	360.0	360.0	22.32	267.80	4.00	4.00	267.80	9	501	510
Totals:												9	501	510

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.25	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.43	0.00	318.9	48.9	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.82	0.00	318.9	48.9	2.00	3.00	3.19	2	11	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.02	0.00	318.9	48.9	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	17.30	0.00	318.9	48.9	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	15.87	0.00	318.9	48.9	5.00	3.00	0.00	6	0	6
Totals:										18	192	210

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.45	33.41	10.62	15.07	7.32	11.50	1.60e+6	60.00	57.00	34.25	31,602	316.10	7.87

Pole Num:	188W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.14	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.95	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019772 Deg	Longitude:	-84.461926 Deg	Elevation:	908.146498316775		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.3	0.0
Groundline	21.3	0.0
Vertical	5.3	17.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,391	138.6
Groundline	17,391	138.6
GL Allowable	83,330	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 138.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	298	37.6	8,198	47.1	9.8	665	269	3	668	9.8
Comms	303	38.2	5,771	33.2	6.9	468	535	5	473	7.0
Pole	185	23.4	3,212	18.5	3.9	261	1,883	18	279	4.1
Insulators	6	0.8	211	1.2	0.3	17	55	1	18	0.3
Pole Load	791	100.0	17,391	100.0	20.9	1,411	2,742	27	1,438	21.1
Pole Reserve Capacity			65,939		79.1	5,389			5,362	78.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 138.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	303	38.3	8,397	48.3	10.1	681	305	3	684	10.1
Unknown, COMMUNICATION	303	38.2	5,782	33.3	6.9	469	554	5	475	7.0
Pole	185	23.4	3,212	18.5	3.9	261	1,883	18	279	4.1
Totals:	791	100.0	17,391	100.0	20.9	1,411	2,742	27	1,438	21.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.73	0.00	0.3250	0.27	0.107	127.9	48.9	127.9	1,684	262	0	1,069	1,331
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.73	0.00	0.3250	0.24	0.107	120.1	228.4	120.1	1,684	249	0	1,004	1,253
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.12	6.69	0.3250	0.27	0.107	127.9	48.9	127.9	1,684	189	19	773	982
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.12	6.69	0.3250	0.24	0.107	120.1	228.4	120.1	1,684	180	18	726	924
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.47	6.73	0.3250	0.27	0.107	127.9	48.9	127.9	1,684	185	19	753	957
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.47	6.73	0.3250	0.24	0.107	120.1	228.4	120.1	1,684	175	18	707	901
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.76	6.77	0.3250	0.27	0.107	127.9	48.9	127.9	1,684	179	20	731	930
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.76	6.77	0.3250	0.24	0.107	120.1	228.4	120.1	1,684	170	18	687	875
Totals:										1,589	113	6,450	8,152	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	18.65	7.09	1.3300	1.76	0.337	127.9	48.9	127.9	925	77	59	1,273	1,409
CATV	CATV 1.0 Unknown, COMMUNICATION	18.65	7.09	1.3300	1.64	0.337	120.1	228.4	120.1	925	73	56	1,196	1,325
Telco	TELE 1.5 Unknown, COMMUNICATION	17.28	7.17	1.5000	2.06	0.900	127.9	48.9	127.9	2,000	155	105	1,289	1,548

Telco	TELE 1.5	Unknown,	17.28	7.17	1.5000	1.91	0.900	120.1	228.4	120.1	2,000	147	98	1,211	1,456
		COMMUNICATION													
											Totals:	452	318	4,968	5,738

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.86	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.12	0.00	138.6	48.6	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.47	0.00	138.6	48.6	2.00	3.00	3.19	2	11	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.76	0.00	138.6	48.6	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.65	0.00	138.6	48.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.28	0.00	138.6	48.6	5.00	3.00	0.00	6	0	6	
										Totals:	18	192	209

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.17	32.74	10.76	11.55	7.32	11.45	1.60e+6	60.00	57.00	33.86	51,955	517.32	18.87

33' 4" - 164W - NT

24' 11" - Lowest Power

21' 7" - Proposed Metronet

20' 2" - Highest Tel Drop

19' 10" - Highest Tel Cable

4' - Base offset

Base

35' 2" - 165W - 27300-2012-02

25' 5" - Lowest Power

22' 1" - Proposed Metronet

20' 11" - Highest Tel Cable

4' - Base offset

Base

34' 2" - 166W - 27300-2013

24' 5" - Lowest Power

21' 1" - Proposed Metronet

20' 9" - Proposed Metronet

4' - Base offset

Base

33' 1" - 167W - NT

23' 5" - Lowest Power

19' 9" - Proposed Metronet

17' 7" - Highest Tel Drop

17' 2" - Highest Tel Cable

4' - Base offset

Base

WIN5928

33' 4" - 168W - NT

28' 1" - Lowest Power

20' - Proposed Metronet

18' 6" - Highest Tel Drop

17' 10" - Highest Tel Cable

6' - Base offset

Base

32' 11" - 169W - NT

28' 1" - Lowest Power

21' 7" - Proposed Metronet

19' 9" - Highest Tel Drop

19' 6" - Highest Tel Cable

4' - Base offset

Base

33' 11" - 170W - NT

24' 6" - Lowest Power

20' - Proposed Metronet

18' - Highest Tel Drop

17' 9" - Highest Tel Cable

4' - Base offset

Base

32' 5" - 171W - NT

26' 7" - Lowest Power

20' 3" - Proposed Metronet

18' 2" - Highest Tel Drop

17' 10" - Highest Tel Cable

4' - Base offset

Base

33' - 172W - NT

22' 6" - Lowest Power

19' 6" - Highest Tel Drop

19' 2" - Highest Tel Cable

19' 2" - Proposed Metronet

4' - Base offset

Base

33' 3" - 173W - NT

23' 9" - Lowest Power

19' 9" - Proposed Metronet

17' 7" - Highest Tel Cable

16' 4" - Highest Tel Drop

4' - Base offset

Base

31' 11" - 174W - NT

23' 4" - Lowest Power

20' - Proposed Metronet

18' 5" - Highest Tel Cable

18' 2" - Highest Tel Drop

4' - Base offset

Base

34' 3" - 175W - NT

26' 8" - Lowest Power

20' 6" - Proposed Metronet

18' 8" - Highest Tel Drop

18' 4" - Highest Tel Cable

6' - Base offset

Base

34' 7" - 176W - NT

24' 5" - Lowest Power

21' 1" - Proposed Metronet

19' 6" - Highest Tel Drop

19' 5" - Highest Tel Cable

6' - Base offset

Base

34' 3" - 177W - NT

24' 7" - Lowest Power

21' 1" - Proposed Metronet

20' 1" - Highest Tel Drop

19' 7" - Highest Tel Cable

4' - Base offset

Base

32' 9" - 178W - NT

27' 8" - Lowest Power

21' 4" - Proposed Metronet

19' 5" - Highest Tel Drop

19' 3" - Highest Tel Cable

4' - Base offset

Base

34' 8" - 179W - NT

24' 6" - Lowest Power

21' - Proposed Metronet

20' - Highest Tel Cable

20' - Highest Tel Drop

6' - Base offset

Base

33' 4" - 180W - NT

22' 3" - Lowest Power

19' 7" - Highest Tel Drop

19' 5" - Highest Tel Cable

18' 11" - Proposed Metronet

4' - Base offset

Base



35' 2" - 181W - NT

29' - Lowest Power

22' 5" - Proposed Metronet

4' - Base offset

Base

33' 1" - 182W - NT

24' 2" - Lowest Power

21' - Proposed Metronet

19' 7" - Highest Tel Cable

6' - Base offset

Base

34' 11" - 183W - NT

24' 9" - Lowest Power

21' 5" - Proposed Metronet

20' 1" - Highest Tel Cable

20' 1" - Highest Tel Drop

6' - Base offset

Base

33' 9" - 184W - NT

21' 10" - Lowest Power

18' 6" - Proposed Metronet

18' 2" - Highest Tel Drop

17' 10" - Highest Tel Cable

4' - Base offset

Base

28' 9" - 185W - NT

22' 8" - Lowest Power

19' 2" - Proposed Metronet

17' 6"

17' 4"

4' - Base offset

Base

30' 7" - 186W - NT

21' - Lowest Power

17' 8" - Proposed Metronet

17' 4" - Highest Tel Cable

17' 1" - Highest Tel Drop

4' - Base offset

Base

34' 3" - 187W - NT

22' 4" - Lowest Power

18' 4" - Proposed Metronet

15' 10" - Highest Tel Cable

4' - Base offset

Base

33' 10" - 188W - NT

23' 9" - Lowest Power

19' 8" - Proposed Metronet

17' 3" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 1:37 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX135-06W
Attachments: LX135-06 Pole App Map.pdf; LX135-06W - WINDSTREAM INVENTORY REPORT.PDF; LX135-06W - METRONET POLE INVENTORY REPORT.XLSX; O-Calcs.pdf; Pole Photos.pdf; Map Key.pdf

Good Morning,

Please see attached for proposal titled LX135-06W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur

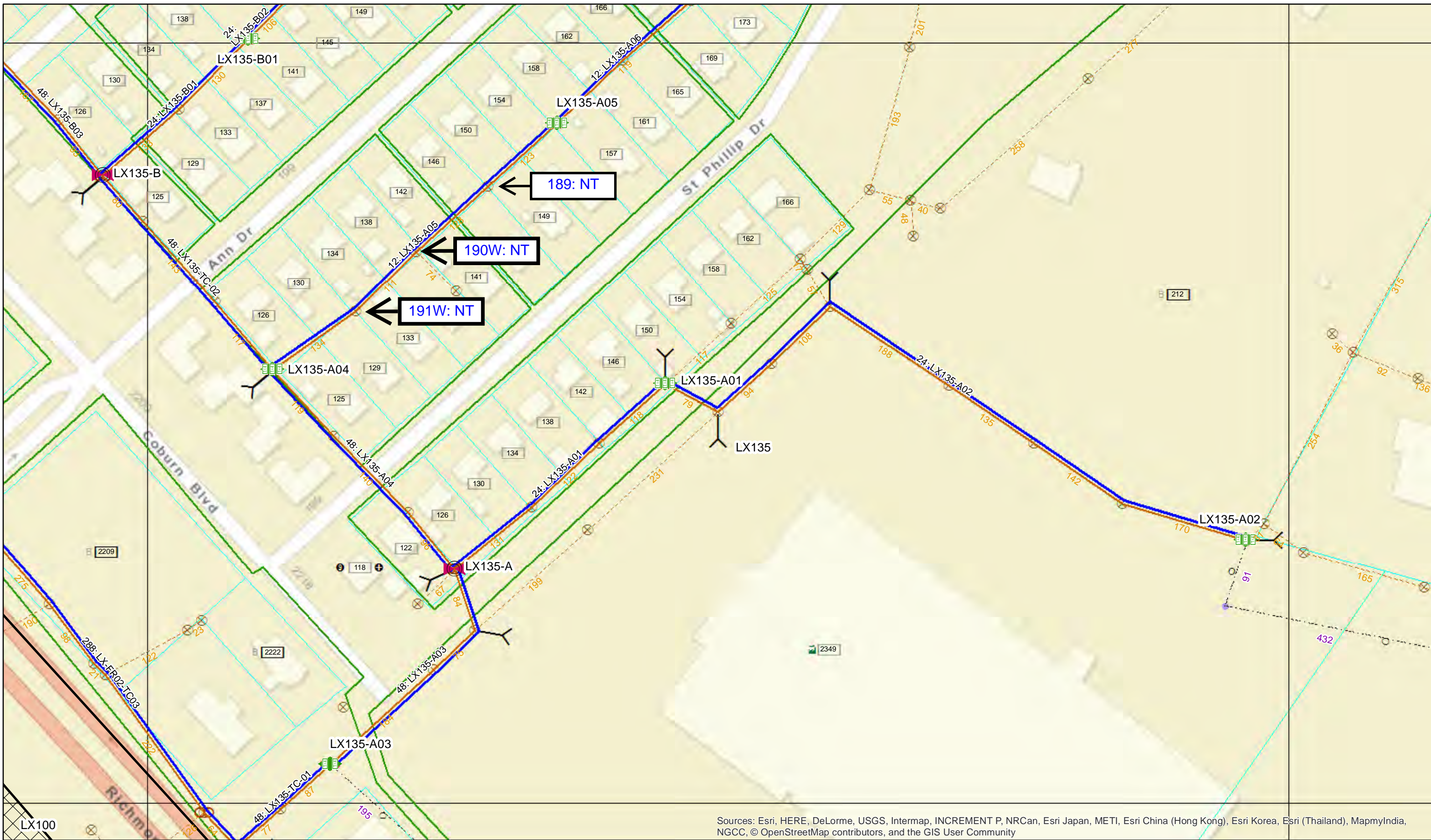
Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAU34
 PROJECT NUMBER:
 LXTNXY.00437.CB
 DATE 12/12/2017
 USER NAME: arcgis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX135(1:3100)
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KENTUCKY

REV	DATE	DESCRIPTION	ENG DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715

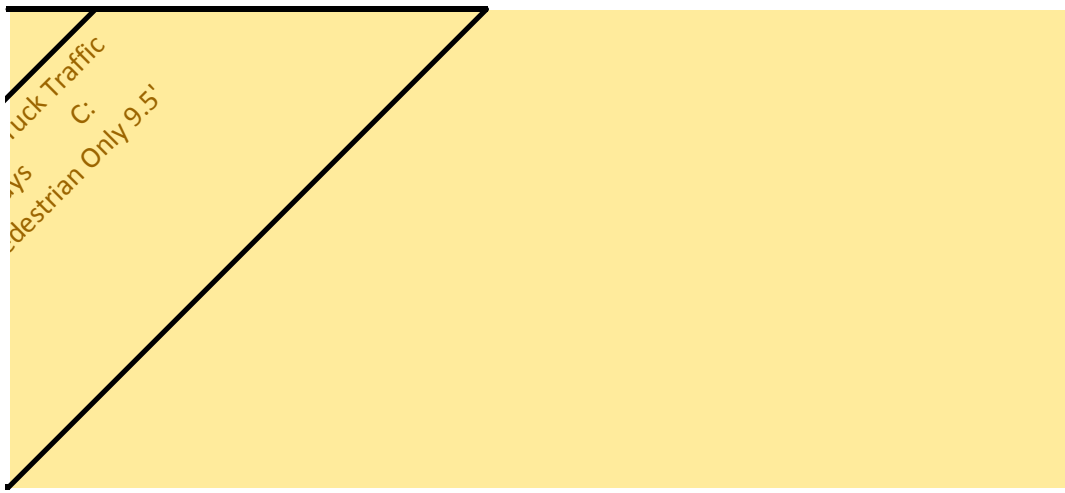


Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
-------	---------------------	-----------------------------	---------------------	----------	-----------	----------

	150 ST ANN DR	38.01955	-84.46223	KU		
		38.01955	-84.46223	KU		
		38.01955	-84.46223	KU		
		38.01955	-84.46223	KU		
		38.01955	-84.46223	KU		
		38.01955	-84.46223	KU		
		38.01955	-84.46223	KU		
		38.01955	-84.46223	KU		
		38.01955	-84.46223	Metronet		
Lower Charter		38.01955	-84.46223	Charter		
Lower Windstream		38.01955	-84.46223	Windstream		
	138 ST ANN DR	38.01933	-84.46255	KU		
		38.01933	-84.46255	KU		
		38.01933	-84.46255	KU		
		38.01933	-84.46255	KU		
		38.01933	-84.46255	KU		
		38.01933	-84.46255	Metronet		
Lower & Resag Charter		38.01933	-84.46255	Charter		
		38.01933	-84.46255	Windstream		
	134 ST ANN DR	38.01910	-84.46286	KU		
		38.01910	-84.46286	KU		
		38.01910	-84.46286	KU		
		38.01910	-84.46286	KU		
		38.01910	-84.46286	KU		
		38.01910	-84.46286	KU		
		38.01910	-84.46286	Metronet		
Lower Charter		38.01910	-84.46286	Charter		
Lower Windstream		38.01910	-84.46286	Windstream		

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped	Y/N	Y/N
--------------------------------	---------	----------------------------	----------------------------	-----------------------------	------------------------------	-----------------------------------	--	------------------	------------------------------------	--------------------------------	-----	-----

Primary	27'6"			Y	N		D: Pedestrian Only 9.5'					
Neutral	22'2"			Y	N							
Transformer	22'2"			Y	N							
Secondary	21'5"			Y	N							
Streetlight	20'11"			Y	N							
Secondary	20'8"			Y	N							
Secondary Drip Loop	19'8"			Y	N							
OH Guy	19'8"			Y	N							
Communication		16'4"		Y	N							
Communication	17'10"	15'4"	42	Y	N							
Communication	17'0"	14'4"	16'10"	Y	N							
Primary	27'10"			N	N		D: Pedestrian Only 9.5'					
Secondary	24'9"			N	N							
Neutral	23'7"			N	N							
Secondary	23'1"			N	N							
Secondary	22'8"			N	N							
Communication		19'3"		N	N							
Communication	18'6"	18'3"	30	N	N							
Communication	17'3"		15'6"	N	N							
Primary	27'2"			Y	N		D: Pedestrian Only 9.5'					
Neutral	22'8"			Y	N							
Secondary	22'0"			Y	N							
Secondary	21'4"			Y	N							
Transformer	20'11"			Y	N							
Secondary Riser	19'2"			Y	N							
Communication		15'10"		Y	N							
Communication	17'9"	14'10"	47	Y	N							
Communication	16'8"	13'10"	16'0"	Y	N							



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX135-06W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812-213-1328
 EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: _____

Lauren Sandefur 3/18/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12	
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N	
1	NT	189W	150 ST ANN DR, Lexington, KY 40502	35, 4, WXM	17'0"	17'0"	19'8"	(1)Fiber/Strand				
2	NT	190W	138 ST ANN DR, Lexington, KY 40502	35, 4, WXM	17'3"	17'3"	22'8"	(1)Fiber/Strand				
3	NT	191W	134 ST ANN DR, Lexington, KY 40502	35, 4, WXM	16'8"	17'1"	19'2"	(1)Fiber/Strand				
4												
5												
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream_JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

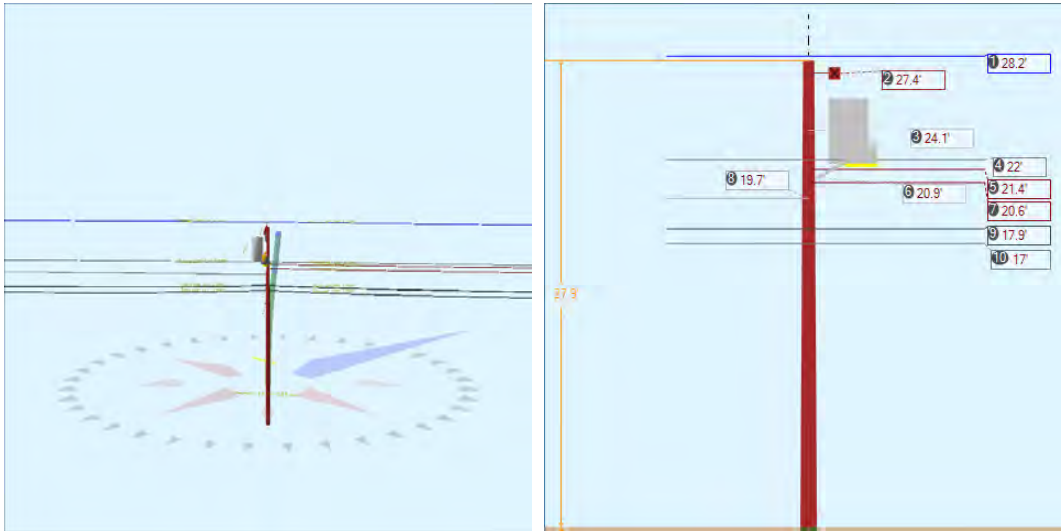
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN) Footage	ROADS
AERIAL (SLACK SPAN) Footage	WORK POINTS
NEW / PROPOSED TRENCH Footage	RAILROADS
EXISTING INHERITED TRENCH Footage	

Pole Num:	189W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.06	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019547 Deg	Longitude:	-84.462229 Deg	Elevation:	894.808530149465		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	137.7
Groundline	0.0	137.7
Vertical	19.5	47.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	115.0	137.7
Groundline	115.0	137.7
GL Allowable	54,047	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	121.4	227.9		21.1	137.7	22.2	50.0
? EHS 3/8 (Span/Head)			19.7	30.4	137.7	35.3	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 115.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,936	242.4	41,047	239.1	76.0	5,173	196	3	5,176	76.1
Comms	279	34.9	5,092	29.7	9.4	642	521	7	648	9.5
GuyBraces	-1,613	-201.9	-31,724	-184.8	-58.7	-3,998	28	0	-3,998	-58.8
PowerEquipments	51	6.3	294	1.7	0.5	37	1,216	16	53	0.8
Pole	125	15.6	1,820	10.6	3.4	229	1,210	16	245	3.6
Crossarms	1	0.1	16	0.1	0.0	2	95	1	3	0.0
Streetlights	18	2.3	594	3.5	1.1	75	86	1	76	1.1
Insulators	3	0.3	32	0.2	0.1	4	42	1	5	0.1
Pole Load	799	100.0	17,171	100.0	31.8	2,164	3,394	44	2,208	32.5
Pole Reserve Capacity			36,876		68.2	4,636			4,592	67.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 115.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	395	49.4	10,234	59.6	18.9	1,290	1,549	20	1,310	19.3
Unknown, COMMUNICATION	279	34.9	5,101	29.7	9.4	643	540	7	650	9.6
Pole	125	15.6	1,820	10.6	3.4	229	1,210	16	245	3.6
<Undefined>	1	0.1	16	0.1	0.0	2	95	1	3	0.0
Totals:	799	100.0	17,171	100.0	31.8	2,164	3,394	44	2,208	32.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.21	45.29	0.3250	0.25	0.107	121.4	227.9	121.4	1,684	-24,076	-119	759	-23,436
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.21	45.29	0.3250	0.24	0.107	120.1	48.4	120.1	1,684	24,572	-118	748	25,202
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	22.00	6.18	0.3250	0.24	0.107	120.1	48.4	120.1	1,684	19,150	15	583	19,749
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	22.00	6.18	0.3250	0.25	0.107	121.4	227.9	121.4	1,684	-18,764	16	592	-18,156

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	21.43	6.22	0.3250	0.24	0.107	120.1	48.4	120.1	1,684	18,658	7	568	19,233
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	20.64	6.26	0.3250	0.24	0.107	120.1	48.4	120.1	1,684	17,971	7	547	18,525
Totals:											37,511	-193	3,798	41,117	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	17.86	6.42	1.3300	1.64	0.337	120.1	48.4	120.1	925	8,542	47	1,051	9,639
CATV	CATV 1.0		17.86	6.42	1.3300	1.66	0.337	121.4	227.9	121.4	925	-8,370	47	1,066	-7,257
Telco	TELE 1.5	Unknown, COMMUNICATION	16.98	6.47	1.5000	1.91	0.900	120.1	48.4	120.1	2,000	17,561	82	1,092	18,734
Telco	TELE 1.5		16.98	6.47	1.5000	1.93	0.900	121.4	227.9	121.4	2,000	-17,206	83	1,107	-16,016
Totals:											527	258	4,316	5,100	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	24.12	21.56	230.0	230.0	640.00	47.00	--	24.00	--	-925	1,219	295
Totals:											-925	1,219	295	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	27.40	5.12	227.9	227.9	50.00	4.50	3.50	96.00	-16	32	16	
Totals:											-16	32	16

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	20.93	3.75	141.0	141.0	45.00	24.00	20.00	3.00	36.00	212	383	595
Totals:											212	383	595	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	27.59	45.00	311.4	0.0	6.00	3.50	7.50	-41	33	-9
Spool	Spool Insulator - 25 kV		KU, UTILITY	22.00	0.00	138.1	48.1	2.00	3.00	3.19	2	9

Spool	Spool Insulator - 25 kV	KU, UTILITY	21.43	0.00	48.4	48.4	2.00	3.00	3.19	1	9	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	20.64	0.00	48.4	48.4	2.00	3.00	3.19	1	9	10
Bolt	Three Bolt	Unknown, COMMUNICATION	17.86	0.00	138.1	48.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.98	0.00	138.1	48.1	5.00	3.00	0.00	5	0	5
Totals:										-29	60	32

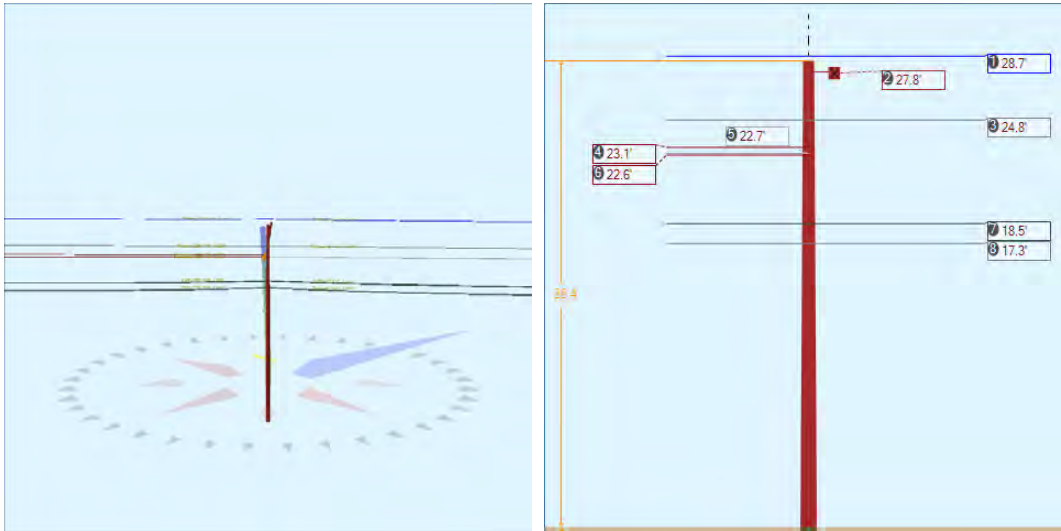
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	19.70	19.70	121.38	0.375	75.00	227.9	0.0	0.273	119.56	3.18

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	4,887	4,443	4,220	0	4,220	-1,641	-31,778	
Totals:											0	4,220	-1,641	-31,778

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	121.38	227.9	20,000	1.00	20,000	4,443	4,220	22.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.54	33.41	9.15	7.78	6.69	9.91	1.60e+6	60.00	57.00	27.94	168,211	1696.98	50.00

Pole Num:	190W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.63	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.27	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019331 Deg	Longitude:	-84.462551 Deg	Elevation:	887.292834098353		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.0	0.0
Groundline	39.0	0.0
Vertical	0.9	16.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,156	154.5
Groundline	21,156	154.5
GL Allowable	54,874	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	121.4	47.8		20.6	137.7	21.2	230.0
? EHS 3/8 (Span/Head)			22.7	29.8	137.7	33.7	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 154.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,675	162.7	38,984	184.3	71.0	4,839	194	2	4,841	71.2
Comms	370	35.9	6,295	29.8	11.5	781	518	7	788	11.6
GuyBraces	-1,151	-111.7	-26,117	-123.5	-47.6	-3,242	28	0	-3,241	-47.7
Pole	132	12.8	1,954	9.2	3.6	243	1,237	16	258	3.8
Crossarms	1	0.1	24	0.1	0.0	3	95	1	4	0.1
Insulators	3	0.2	17	0.1	0.0	2	42	1	3	0.0
Pole Load	1,030	100.0	21,156	100.0	38.6	2,626	2,114	27	2,653	39.0
Pole Reserve Capacity			33,718		61.4	4,174			4,147	61.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 154.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	527	51.2	12,893	60.9	23.5	1,600	245	3	1,603	23.6
Unknown, COMMUNICATION	370	35.9	6,285	29.7	11.5	780	537	7	787	11.6
Pole	132	12.8	1,954	9.2	3.6	243	1,237	16	258	3.8
<Undefined>	1	0.1	24	0.1	0.0	3	95	1	4	0.1
Totals:	1,030	100.0	21,156	100.0	38.6	2,626	2,114	27	2,653	39.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.66	45.29	0.3250	0.25	0.107	121.4	47.9	121.4	1,684	-17,897	-122	803	-17,216
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.66	45.29	0.3250	0.23	0.107	118.5	226.1	118.5	1,684	19,778	-119	776	20,434
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.76	6.05	0.3250	0.25	0.107	121.4	47.9	121.4	1,684	-15,453	16	693	-14,745
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.76	6.05	0.3250	0.23	0.107	118.5	226.1	118.5	1,684	17,078	15	670	17,763
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.11	6.15	0.3250	0.23	0.107	118.5	226.1	118.5	1,684	15,941	5	625	16,572

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	22.64	6.17	0.3250	0.23	0.107	118.5	226.1	118.5	1,684	15,620	5	613	16,238	
												Totals:	35,066	-199	4,179	39,046

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
CATV	CATV 1.0	Unknown, COMMUNICATION	18.47	6.41	1.3300	1.66	0.337	121.4	47.9	121.4	925	-6,334	-49	1,147	-5,235	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.47	6.41	1.3300	1.61	0.337	118.5	226.1	118.5	925	6,999	-48	1,109	8,061	
Telco	TELE 1.5	Unknown, COMMUNICATION	17.26	6.48	1.5000	1.93	0.900	121.4	47.9	121.4	2,000	-12,798	-86	1,172	-11,712	
Telco	TELE 1.5	Unknown, COMMUNICATION	17.26	6.48	1.5000	1.88	0.900	118.5	226.1	118.5	2,000	14,143	-84	1,132	15,191	
												Totals:	2,011	-266	4,560	6,305

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	27.85	5.12	47.0	47.0	50.00	4.50	3.50	96.00	-12	36	24		
											Totals:	-12	36	24

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 5 kV	KU, UTILITY	28.03	-45.00	323.5	0.0	6.00	3.50	7.50	-42	34	-8		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.76	0.00	137.0	47.0	2.00	3.00	3.19	2	11	13		
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.11	0.00	226.1	226.1	2.00	3.00	3.19	1	10	11		
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.64	0.00	226.1	226.1	2.00	3.00	3.19	1	10	11		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.47	0.00	317.0	47.0	5.00	3.00	0.00	-5	0	-5		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.26	0.00	317.0	47.0	5.00	3.00	0.00	-5	0	-5		
											Totals:	-49	66	17

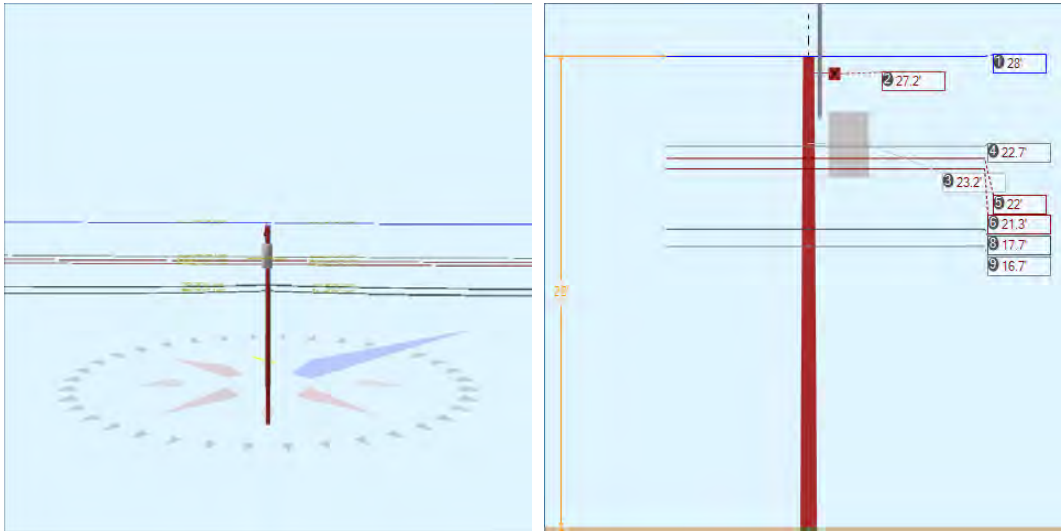
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	22.74	22.74	121.38	0.375	75.00	47.8	0.0	0.273	119.57	3.11

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	4,671	4,246	4,126	0	4,126	-1,180	-26,159
Totals:										0	4,126	-1,180	-26,159

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	121.38	47.8	20,000	1.00	20,000	4,246	4,126	21.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	16.68	32.90	9.32	5.83	6.69	9.96	1.60e+6	60.00	57.00	28.37	248,541	2348.84	111.11

Pole Num:	191W - NT	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.97	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.15	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.019103 Deg	Longitude:	-84.462855 Deg	Elevation:	900.016044194442		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.8	0.0
Groundline	32.8	0.0
Vertical	15.2	19.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,444	315.9
Groundline	17,444	315.9
GL Allowable	54,228	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 315.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	401	41.7	9,748	55.9	18.0	1,226	267	3	1,230	18.1
Comms	346	36.0	6,206	35.6	11.4	781	531	7	788	11.6
PowerEquipments	55	5.7	-911	-5.2	-1.7	-115	1,216	16	-99	-1.5
Pole	136	14.1	1,986	11.4	3.7	250	1,216	16	265	3.9
Crossarms	1	0.1	34	0.2	0.1	4	95	1	6	0.1
Risers	21	2.1	256	1.5	0.5	32	36	0	33	0.5
Insulators	3	0.3	124	0.7	0.2	16	42	1	16	0.2
Pole Load	962	100.0	17,444	100.0	32.2	2,194	3,403	44	2,238	32.9
Pole Reserve Capacity			36,784		67.8	4,606			4,562	67.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 315.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	479	49.8	9,208	52.8	17.0	1,158	1,542	20	1,178	17.3
Unknown, COMMUNICATION	346	36.0	6,217	35.6	11.5	782	550	7	789	11.6
Pole	136	14.1	1,986	11.4	3.7	250	1,216	16	265	3.9
<Undefined>	1	0.1	34	0.2	0.1	4	95	1	6	0.1
Totals:	962	100.0	17,444	100.0	32.2	2,194	3,403	44	2,238	32.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.01	45.29	0.3250	0.24	0.107	118.5	46.1	118.5	1,684	-205	121	799	715
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.01	45.29	0.3250	0.27	0.107	127.5	227.5	127.5	1,684	1,358	130	859	2,347
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	22.67	6.15	0.3250	0.24	0.107	118.5	46.1	118.5	1,684	-166	16	646	497
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	22.67	6.15	0.3250	0.27	0.107	127.5	227.5	127.5	1,684	1,098	18	695	1,811
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	21.95	6.19	0.3250	0.24	0.107	118.5	46.1	118.5	1,684	-161	17	626	482

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	21.95	6.19	0.3250	0.27	0.107	127.5	227.5	127.5	1,684	1,064	18	673	1,754
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	21.32	6.23	0.3250	0.24	0.107	118.5	46.1	118.5	1,684	-156	17	608	469
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	21.32	6.23	0.3250	0.27	0.107	127.5	227.5	127.5	1,684	1,033	18	653	1,704
Totals:											3,866	354	5,559	9,778	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.73	6.44	1.3300	1.61	0.337	118.5	46.1	118.5	925	-71	50	1,121	1,100
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.73	6.44	1.3300	1.76	0.337	127.5	227.5	127.5	925	472	54	1,205	1,731
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.71	6.49	1.5000	1.88	0.900	118.5	46.1	118.5	2,000	-145	88	1,155	1,098
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.71	6.49	1.5000	2.05	0.900	127.5	227.5	127.5	2,000	961	95	1,241	2,297
		COMMUNICATION													
Totals:											1,217	286	4,722	6,225	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	23.19	21.62	140.0	140.0	640.00	47.00	--	24.00	--	-2,185	1,272	-913
Totals:											-2,185	1,272	-913	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		27.20	5.14	226.8	226.8	50.00	4.50	3.50	96.00	1	34	34
Totals:											1	34	34

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 183.0°	Riser	KU, UTILITY	19.14	5.13	183.0	183.0	19.14	229.66	2.50	2.50	229.66	-5	262	257
Totals:											-5	262	257	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	27.39	45.00	310.3	0.0	6.00	3.50	7.50	43	35	78

Spool	Spool Insulator - 25 kV	KU, UTILITY	22.67	0.00	316.8	226.8	2.00	3.00	3.19	2	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.95	0.00	316.8	226.8	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.32	0.00	316.8	226.8	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	17.73	0.00	316.8	226.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.71	0.00	316.8	226.8	5.00	3.00	0.00	5	0	5
Totals:										59	66	125

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.06	33.32	9.18	12.95	6.69	9.92	1.60e+6	60.00	57.00	28.03	22,403	223.86	6.58

27' 11" - 189W - NT

19' 8" - Lowest Power

17' - Highest Tel Cable

17' - Highest Tel Drop

16' 4" - Proposed Metronet

4' - Base offset

Base

28' 4" - 190W - NT

22' 8" - Lowest Power

19' 3" - Proposed Metronet

17' 3" - Highest Tel Cable

17' 3" - Highest Tel Drop

4' - Base offset

Base

28' - 191W - NT

19' 2" - Lowest Power

17' 1" - Highest Tel Drop

16' 8" - Highest Tel Cable

15' 10" - Proposed Metronet

4' - Base offset

Base

WIN5972

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, March 19, 2018 2:55 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX167-01W
Attachments: Map Key.pdf; LX167-01W - Windstream Inventory Report.pdf; LX167-01W POLE APP MAP 24 - 48.pdf; O-Calcs.pdf; Pole Photos.pdf; LX167-01W - METRONET POLE INVENTORY REPORT.XLSX

Good Afternoon,
Please see attached for proposal titled LX167-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX167-0W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole c	Make Ready
		24W	69113-32704	40/3	WS	1=None	
KU	0	24W	69113-32704		WS		
Windstream	25	24W	69113-32704		WS		
Total Pole Count	25	24W	69113-32704		WS		
Total Needing Make Ready	7	24W	69113-32704		WS		
		24W	69113-32704		WS		
		24W	69113-32704		WS		
		24W	69113-32704		WS		
		25W	26511-2644	35/4	WS	1=None	
		25W	26511-2644		WS		
		25W	26511-2644		WS		
		25W	26511-2644		WS		
		25W	26511-2644		WS		
		25W	26511-2644		WS		
		25W	26511-2644		WS		
		25W	26511-2644		WS		
		26W	226511-1656	35/4	WS	1=None	
		26W	226511-1656		WS		
		26W	226511-1656		WS		
		26W	226511-1656		WS		
		27W	26511-1664	40/4	WS	1=None	
		27W	26511-1664		WS		
		27W	26511-1664		WS		
		28W	26511-1667	40/3	WS	1=None	
		28W	26511-1667		WS		
		28W	26511-1667		WS		
		29W	26511-1652	30/5	WS	1=None	
		29W	26511-1652		WS		
		29W	26511-1652		WS		
		30W	26511-1682	30/4	WS	1=None	

30W	26511-1682		WS	
30W	26511-1682		WS	
31W	26511-1704	30/5	WS	1=None
31W	26511-1704		WS	
31W	26511-1704		WS	
32W	27390-1708	35/4	WS	2=Comms
32W	27390-1708		WS	
32W	27390-1708		WS	
32W	27390-1708		WS	
32W	27390-1708		WS	
32W	27390-1708		WS	
33W	26390-1712	40/4	WS	1=None
33W	26390-1712		WS	
33W	26390-1712		WS	
34W	26511-1624	45/3	WS	1=None
34W	26511-1624		WS	
34W	26511-1624		WS	
35W	26511-1728	45/3	WS	2=Comms
35W	26511-1728		WS	
35W	26511-1728		WS	
35W	26511-1728		WS	
35W	26511-1728		WS	
35W	26511-1728		WS	
36W	26390-1802	40/4	WS	1=None
36W	26390-1802		WS	
36W	26390-1802		WS	
36W	26390-1802		WS	
36W	26390-1802		WS	
36W	26390-1802		WS	
36W	26390-1802		WS	
36W	26390-1802		WS	
36W	26390-1802		WS	
36W	26390-1802		WS	
37W	70779-34223	40/3	WS	1=None
37W	70779-34223		WS	
37W	70779-34223		WS	
37W	70779-34223		WS	
37W	70779-34223		WS	
37W	70779-34223		WS	
37W	70779-34223		WS	
38W	70890-34327	40/4	WS	3=Elec
38W	70890-34327		WS	

38W	70890-34327		WS	
38W	70890-34327		WS	
38W	70890-34327		WS	
38W	70890-34327		WS	
39W	26511-1818	35/4	WS	1=None
39W	26511-1818		WS	
39W	26511-1818		WS	
40W	26511-1912	30/4	WS	1=None
40W	26511-1912		WS	
40W	26511-1912		WS	
41W	26511-1914	30/4	WS	1=None
41W	26511-1914		WS	
41W	26511-1914		WS	
42W	27511-1916	30/4	WS	1=None
42W	27511-1916		WS	
42W	27511-1916		WS	
43W	26511-1926	35/4	WS	1=None
43W	26511-1926		WS	
43W	26511-1926		WS	
44W	26511-1936	30/5	WS	1=None
44W	26511-1936		WS	
44W	26511-1936		WS	
45W	26511-1990	35/4	WS	2=Comms
45W	26511-1990		WS	
45W	26511-1990		WS	
45W	26511-1990		WS	
45W	26511-1990		WS	
46W	72523-35793	40/3	WS	2=Comms
46W	72523-35793		WS	
46W	72523-35793		WS	
46W	72523-35793		WS	
46W	72523-35793		WS	
46W	72523-35793		WS	
46W	72523-35793		WS	
46W	72523-35793		WS	
47W	76223-35694	40/3	WS	2=Comms
47W	76223-35694		WS	
47W	76223-35694		WS	

47W	76223-35694		WS	
47W	76223-35694		WS	
47W	76223-35694		WS	
47W	76223-35694		WS	
47W	76223-35694		WS	
47W	76223-35694		WS	
48W	72720-35594	40/3	WS	2=Comms
48W	72720-35594		WS	
48W	72720-35594		WS	
48W	72720-35594		WS	
48W	72720-35594		WS	
48W	72720-35594		WS	
48W	72720-35594		WS	
48W	72720-35594		WS	
48W	72720-35594		WS	

END

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
1=None 2=Comms 3=Simple PCO 4=Comms&Elec 5=Complex PCO 6=Complex PCO	32.30	1640 OLD PARIS RD	38.06649	-84.46821	KU	
			38.06649	-84.46821	KU	
			38.06649	-84.46821	KU	
			38.06649	-84.46821	KU	
			38.06649	-84.46821	Metronet	
			38.06649	-84.46821	Windstream	
			38.06649	-84.46821	Windstream	
			38.06649	-84.46821	Windstream	
	25.60	1644 OLD PARIS RD	38.06675	-84.46784	KU	
			38.06675	-84.46784	KU	
			38.06675	-84.46784	KU	
			38.06675	-84.46784	Metronet	
			38.06675	-84.46784	Windstream	
			38.06675	-84.46784	Windstream	
			38.06675	-84.46784	Windstream	
			38.06675	-84.46784	Windstream	
	18.30	1652 OLD PARIS RD	38.06700	-84.46748	Metronet	
			38.06700	-84.46748	Windstream	
			38.06700	-84.46748	Windstream	
			38.06700	-84.46748	Windstream	
	23.10	1663 OLD PARIS RD	38.06730	-84.46707	Metronet	
			38.06730	-84.46707	Windstream	
			38.06730	-84.46707	Windstream	
	19.50	1673 OLD PARIS RD	38.06770	-84.46648	Metronet	
			38.06770	-84.46648	Windstream	
			38.06770	-84.46648	Windstream	
	25.50	1679 OLD PARIS RD	38.06802	-84.46602	Metronet	
			38.06802	-84.46602	Windstream	
			38.06802	-84.46602	Windstream	
	17.50	1683 OLD PARIS RD	38.06825	-84.46568	Metronet	

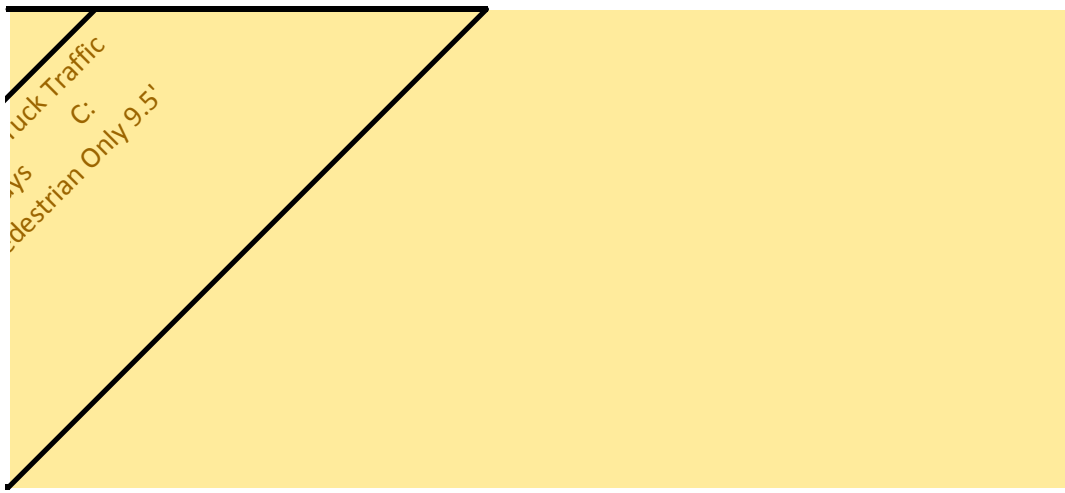
			38.06825	-84.46568	Windstream
			38.06825	-84.46568	Windstream
	23.70	1702 OLD PARIS RD	38.06855	-84.46525	Metronet
			38.06855	-84.46525	Windstream
			38.06855	-84.46525	Windstream
	22.70	1713 OLD PARIS RD	38.06878	-84.46489	KU
			38.06878	-84.46489	KU
			38.06878	-84.46489	KU
			38.06878	-84.46489	Metronet
Lower Windstream			38.06878	-84.46489	Windstream
Lower Windstream			38.06878	-84.46489	Windstream
	14.30	1 DEEPWOOD DR	38.06891	-84.46471	Metronet
			38.06891	-84.46471	Windstream
			38.06891	-84.46471	Windstream
	16.20	1721 OLD PARIS RD	38.06922	-84.46425	Metronet
			38.06922	-84.46425	Windstream
			38.06922	-84.46425	Windstream
	15.30	2 DEEPWOOD DR	38.06940	-84.46398	KU
			38.06940	-84.46398	KU
			38.06940	-84.46398	KU
			38.06940	-84.46398	Metronet
Lower Windstream			38.06940	-84.46398	Windstream
			38.06940	-84.46398	Windstream
	29.70	1809 OLD PARIS RD, 1	38.07035	-84.46262	KU
			38.07035	-84.46262	KU
			38.07035	-84.46262	Metronet
			38.07035	-84.46262	Metronet
			38.07035	-84.46262	Windstream
			38.07035	-84.46262	Windstream
			38.07035	-84.46262	Windstream
			38.07035	-84.46262	Windstream
			38.07035	-84.46262	Windstream
			38.07035	-84.46262	Windstream
	32.80	1809 OLD PARIS RD, 1	38.07060	-84.46227	KU
			38.07060	-84.46227	KU
			38.07060	-84.46227	Metronet
			38.07060	-84.46227	Windstream
			38.07060	-84.46227	Windstream
			38.07060	-84.46227	Windstream
			38.07060	-84.46227	Windstream
	30.50	1817 OLD PARIS RD	38.07087	-84.46189	KU
Extend secondary riser			38.07087	-84.46189	KU

		38.07087	-84.46189	Metronet	
		38.07087	-84.46189	Windstream	
		38.07087	-84.46189	Windstream	
		38.07087	-84.46189	Windstream	
	26.40	1829 OLD PARIS RD	38.07110	-84.46151	Metronet
			38.07110	-84.46151	Windstream
			38.07110	-84.46151	Windstream
	18.90	1913 OLD PARIS RD	38.07346	-84.45815	Metronet
			38.07346	-84.45815	Windstream
			38.07346	-84.45815	Windstream
	23.00	1953 OLD PARIS RD	38.07368	-84.45778	Metronet
			38.07368	-84.45778	Windstream
			38.07368	-84.45778	Windstream
	22.30	1957 OLD PARIS RD	38.07394	-84.45741	Metronet
			38.07394	-84.45741	Windstream
			38.07394	-84.45741	Windstream
	19.70	1961 OLD PARIS RD	38.07420	-84.45704	Metronet
			38.07420	-84.45704	Windstream
			38.07420	-84.45704	Windstream
	23.10	1975 OLD PARIS RD	38.07445	-84.45664	Metronet
			38.07445	-84.45664	Windstream
			38.07445	-84.45664	Windstream
	28.90	1981 OLD PARIS RD	38.07466	-84.45637	Metronet
			38.07466	-84.45637	Metronet
Lower Windstream			38.07466	-84.45637	Windstream
			38.07466	-84.45637	Windstream
			38.07466	-84.45637	Windstream
	32.30	2000 OLD PARIS RD	38.07466	-84.45605	KU
			38.07466	-84.45605	KU
			38.07466	-84.45605	KU
			38.07466	-84.45605	Metronet
Lower Charter			38.07466	-84.45605	Charter
Lower Windstream			38.07466	-84.45605	Windstream
Lower Windstream			38.07466	-84.45605	Windstream
Lower Windstream			38.07466	-84.45605	Windstream
	30.70	2000 OLD PARIS RD	38.07440	-84.45572	KU
			38.07440	-84.45572	KU
			38.07440	-84.45572	KU

Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
Secondary	34' 6"			N	N			B: Residential/Over Driveways		
Neutral	33' 11"			N	N					
Secondary	33' 3"			N	N					
Secondary Riser	29' 11"			N	N					
Communication		23'7"		N	N					
Communication	22' 7"		N/A	N	N					
Communication	21' 6"			N	N					
Communication	20' 2"	18'1"		N	N					
Secondary	27' 10"			N	N			B: Residential/Over Driveways		
Streetlight	26' 4"			N	N					
Streetlight Drip Loop	25' 11"			N	N					
Communication		23'6"		N	N					
Communication	22' 6"		N/A	N	N					
Communication	21' 3"			N	N					
Communication	20' 6"			N	N					
Communication	19' 7"	17'0"		N	N					
Communication		18'2"		N	N			D: Pedestrian Only 9.5'		
Communication	17' 2"		N/A	N	N					
Communication	16' 3"			N	N					
Communication	15' 2"	21'10"		N	N					
Communication		28'11"		N	N			B: Residential/Over Driveways		
Communication	27' 11"		N/A	N	N					
Communication	26' 0"	22'8"		N	N					
Communication		30'6"		N	N			D: Pedestrian Only 9.5'		
Communication	29' 6"		N/A	N	N					
Communication	27' 3"	20'6"		N	N					
Communication		22'8"		N	N			D: Pedestrian Only 9.5'		
Communication	21' 8"		N/A	N	N					
Communication	20' 5"	17'0"		N	N					
Communication		19'8"		N	N			B: Residential/Over Driveways		

Communication	18' 8"		N/A	N	N	
Communication	17' 8"	17'1"		N	N	
Communication		21'11"		N	N	D: Pedestrian Only 9.5'
Communication	20' 11"		N/A	N	N	
Communication	19' 11"	19'6"		N	N	
Primary	30' 10"			N	N	D: Pedestrian Only 9.5'
Neutral	25' 4"			N	N	
Primary Riser	24' 8"			N	N	
Communication		20'1"		N	N	
Communication	20' 1"	19'1"	N/A	N	N	
Communication	18' 4"	18'0"	19'3"	N	N	
Communication		25'2"		N	N	B:Residential/Over Driveways
Communication	24' 2"		N/A	N	N	
Communication	21' 11"	20'9"		N	N	
Communication		29'8"		N	N	D: Pedestrian Only 9.5'
Communication	28' 8"		N/A	N	N	
Communication	26' 10"	22'7"		N	N	
Neutral	29' 8"			N	N	D: Pedestrian Only 9.5'
Secondary Riser	28' 8"			N	N	
Secondary Drip Loop	26' 8"			N	N	
Communication		23'3"		N	N	
Communication	22' 10"	22'3"	N/A	N	N	
Communication	21' 3"	20'10"		N	N	
Secondary	32' 7"			N	N	B:Residential/Over Driveways
Secondary Riser	30' 10"			N	N	
Communication		24'3"		N	N	
Communication		23'11"		N	N	
Communication	22' 11"		N/A	N	N	
Communication	21' 9"			N	N	
Communication	20' 6"			N	N	
Communication	20' 2"			N	N	
Communication	20' 0"	16'2"		N	N	
Neutral	31' 11"			N	Y	B:Residential/Over Driveways
Secondary Riser	29' 8"			N	Y	
Communication		22'9"		N	Y	
Communication	21' 9"		N/A	N	Y	
Communication	20' 5"			N	Y	
Communication	19' 8"			N	Y	
Communication	18' 4"	13'6"		N	Y	
Neutral	27' 4"			N	N	B:Residential/Over Driveways
Secondary Riser	23' 0"	27'0"		N	N	

Communication		20'4"		N	N	
Communication	19' 4"		N/A	N	N	
Communication	18' 3"			N	N	
Communication	17' 1"	18'6"		N	N	
Communication		23'1"		N	N	D: Pedestrian Only 9.5'
Communication	22' 1"		N/A	N	N	
Communication	20' 10"	13'4"		N	N	
Communication		21'9"		N	N	D: Pedestrian Only 9.5'
Communication	20' 9"		N/A	N	N	
Communication	18' 8"	17'6"		N	N	
Communication		23'9"		N	N	B:Residential/Over Driveways
Communication	22' 9"		N/A	N	N	
Communication	21' 6"	17'11"		N	N	
Communication		23'3"		N	N	D: Pedestrian Only 9.5'
Communication	22' 3"		N/A	N	N	
Communication	20' 11"	17'3"		N	N	
Communication		26'1"		N	N	D: Pedestrian Only 9.5'
Communication	25' 1"		N/A	N	N	
Communication	19' 4"	15'10"		N	N	
Communication		20'8"		N	N	D: Pedestrian Only 9.5'
Communication	19' 8"		N/A	N	N	
Communication	18' 8"	21'4"		N	N	
Communication		28'1"		N	N	B:Residential/Over Driveways
Communication		27'9"		N	N	
Communication	27' 5"	27'1"	134	N	N	
Communication	26' 1"			N	N	
Communication	25' 7"	18'2"		N	N	
Primary	33' 9"			N	N	D: Pedestrian Only 9.5'
Neutral	27' 7"			N	N	
OH Guy	25' 8"			N	N	
Communication		24'3"		N	N	
Communication	23' 11"	23'3"	79	N	N	
Communication	22' 10"	22'3"		N	N	
Communication	22' 3"	21'7"	20'9"	N	N	
Communication	21' 8"	21'3"		N	N	
Primary	33' 8"			Y	N	D: Pedestrian Only 9.5'
Transformer	27' 8"			Y	N	
Neutral	26' 10"			Y	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE
PROPOSAL #: LX167-01W
Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name: LAUREN SANDEFUR 812-213-1328
 Street Address, City, ST, ZIP of Firm: 3701 Communications Way, Evansville, IN 47715 Phone # 812-213-1328
 Applying: 3701 Communications Way, Evansville, IN 47715 EMAIL ADDRESS lauren.sanderfur@metronetinc.com
 Authorized Signature & Date: *Lauren Sanderfur* 3/19/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makerady MUST BE PAID IN FULL UP FRONT.

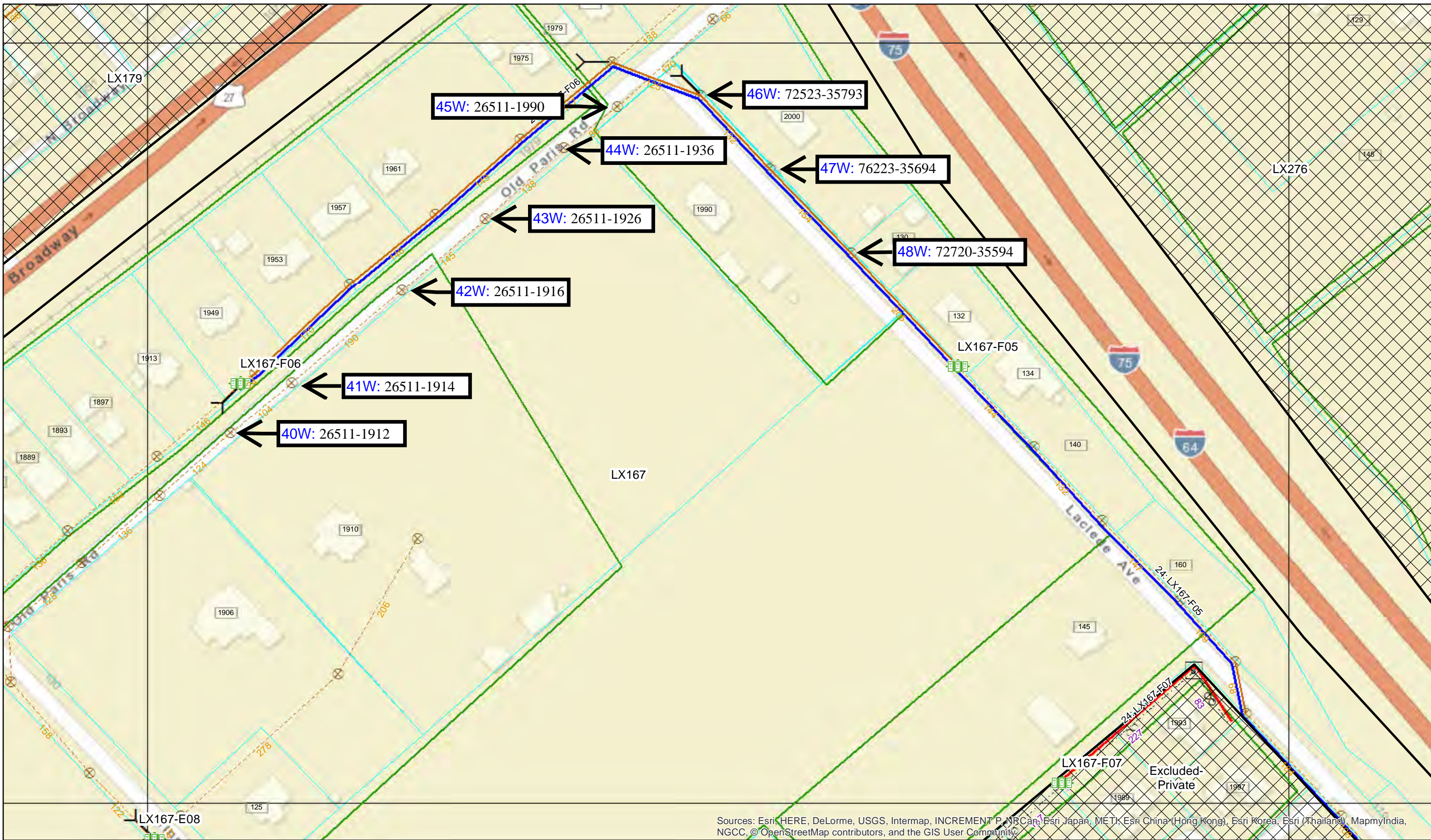
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	69113-32704	24W	1640 OLD PARIS RD, Lexington, KY 40505 40, 3, WXXM	227"	2310"	2911"		(1)Fiber/Strand			
2	26511-2644	25W	1644 OLD PARIS RD, Lexington, KY 40505 35, 4, WXXM	225"	227"	2511"		(1)Fiber/Strand			
3	226511-1656	26W	1682 OLD PARIS RD, Lexington, KY 40505 35, 4, WXXM	172"	N/A	N/A		(1)Fiber/Strand			
4	26511-1664	27W	1683 OLD PARIS RD, Lexington, KY 40505 40, 4, WXXM	2711"	281"	N/A		(1)Fiber/Strand			
5	26511-1667	28W	1673 OLD PARIS RD, Lexington, KY 40505 40, 3, WXXM	296"	304"	N/A		(1)Fiber/Strand			
6	26511-1652	29W	1679 OLD PARIS RD, Lexington, KY 40505 30, 5, WXXM	218"	228"	N/A		(1)Fiber/Strand			
7	26511-1682	30W	1683 OLD PARIS RD, Lexington, KY 40505 30, 4, WXXM	138"	204"	N/A		(1)Fiber/Strand			
8	26511-1704	31W	1702 OLD PARIS RD, Lexington, KY 40505 30, 5, WXXM	2011"	2111"	N/A		(1)Fiber/Strand			
9	27390-1708	32W	1713 OLD PARIS RD, Lexington, KY 40505 35, 4, WXXM	201"	2010"	248"		(1)Fiber/Strand			
10	26390-1712	33W	1 DEEPWOOD DR, Lexington, KY 40505 40, 4, WXXM	242"	266"	N/A		(1)Fiber/Strand			
11	26511-1624	34W	1721 OLD PARIS RD, Lexington, KY 40505 45, 3, WXXM	288"	N/A	N/A		(1)Fiber/Strand			
12	26511-1728	35W	2 DEEPWOOD DR, Lexington, KY 40505 45, 3, WXXM	2210"	237"	268"		(1)Fiber/Strand			
13	26390-1802	36W	1809 OLD PARIS RD, 101, Lexington, KY 4 40, 4, WXXM	2211"	N/A	3010"		(2)Fiber/Strand			
14	70779-34223	37W	1809 OLD PARIS RD, 102, Lexington, KY 4 40, 3, WXXM	219"	211"	298"		(1)Fiber/Strand			
15	70890-34327	38W	1817 OLD PARIS RD, Lexington, KY 40505 40, 4, WXXM	194"	209"	230"		(1)Fiber/Strand			
16	26511-1818	39W	1829 OLD PARIS RD, Lexington, KY 40505 35, 4, WXXM	221"	234"	N/A		(1)Fiber/Strand			
17	26511-1912	40W	1913 OLD PARIS RD, Lexington, KY 40505 30, 4, WXXM	209"	N/A	N/A		(1)Fiber/Strand			
18	26511-1914	41W	1955 OLD PARIS RD, Lexington, KY 40505 30, 4, WXXM	229"	207"	N/A		(1)Fiber/Strand			
19	27511-1916	42W	1957 OLD PARIS RD, Lexington, KY 40505 30, 4, WXXM	223"	N/A	N/A		(1)Fiber/Strand			

20	26511-1926	43W	1961 OLD PARIS RD, Lexington, KY 40505 35, 4, WXM	25'1"	N/A	N/A		(1)Fiber/Strand		
21	26511-1936	44W	1975 OLD PARIS RD, Lexington, KY 40505 30, 5, WXM	19'8"	N/A	N/A		(1)Fiber/Strand		
22	26511-1990	45W	1981 OLD PARIS RD, Lexington, KY 40505 35, 4, WXM	27'5"	25'10"	N/A		(2)Fiber/Strand		
23	72523-35793	46W	2000 OLD PARIS RD, Lexington, KY 40505 40, 3, WXM	22'10"	N/A	27'7"		(1)Fiber/Strand		
24	76223-35694	47W	2000 OLD PARIS RD, Lexington, KY 40505 40, 3, WXM	20'7"	20'1"	24'10"		(1)Fiber/Strand		
25	72720-35594	48W	1301 LAQUELE AVE, Lexington, KY 40505 40, 3, WXM	20'5"	20'3"	23'7"		(1)Fiber/Strand		
ESTIMATED TOTAL COSTS :										
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM										

Submit to: Windstream.JointUse@Windstream.com
 Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community.

LXBO35
 PROJECT NUMBER:
 LXTNKXJ00437.CB
 DATE: 12/11/2017
 USER NAME: arcgis
 DESIGN ENG

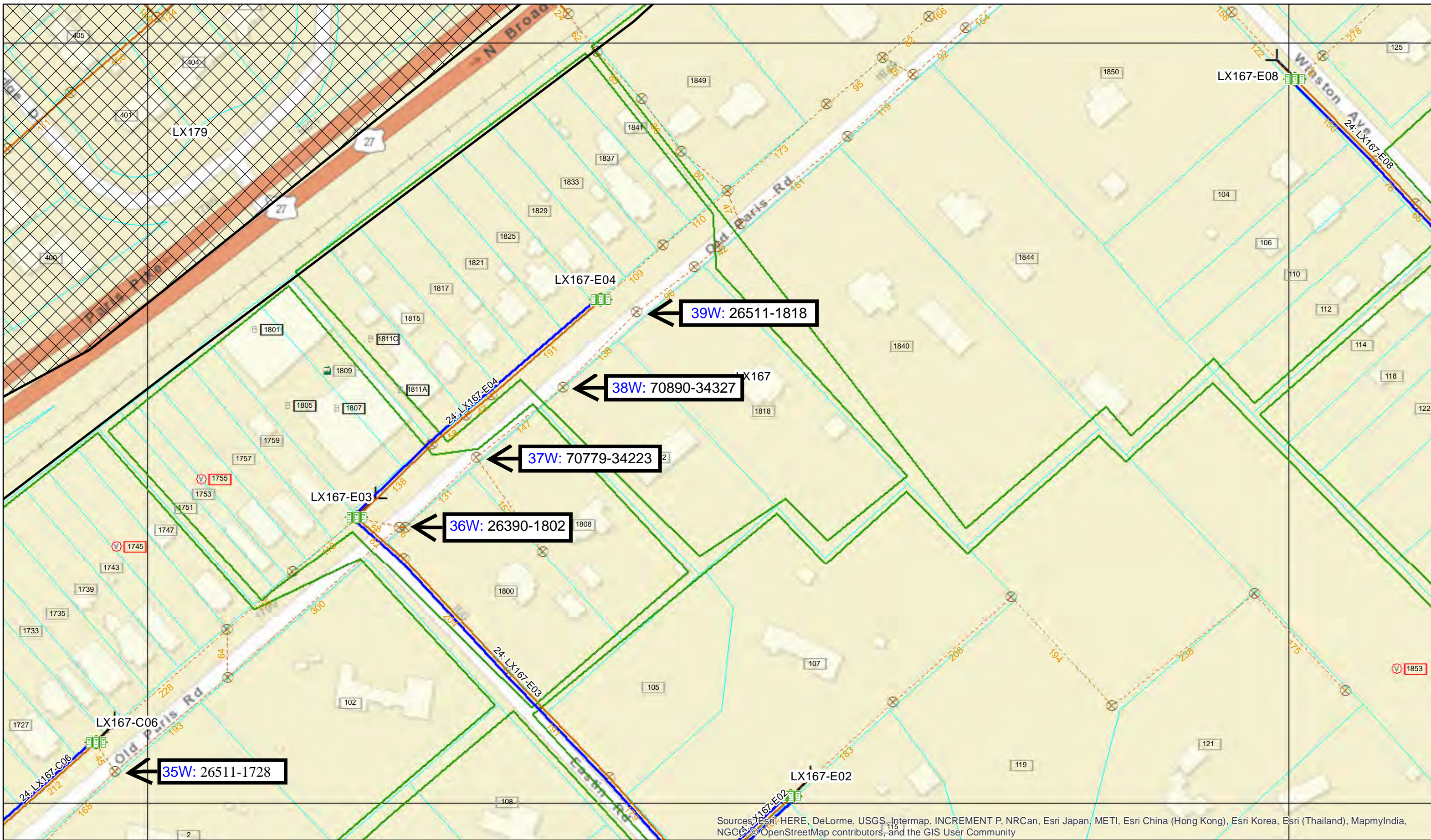
STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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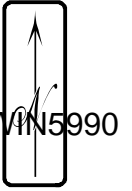
LXBN34
 PROJECT NUMBER:
 LXTNXY00457.CB
 DATE: 12/11/2017
 USER NAME: arqjls
 DESIGN ENG

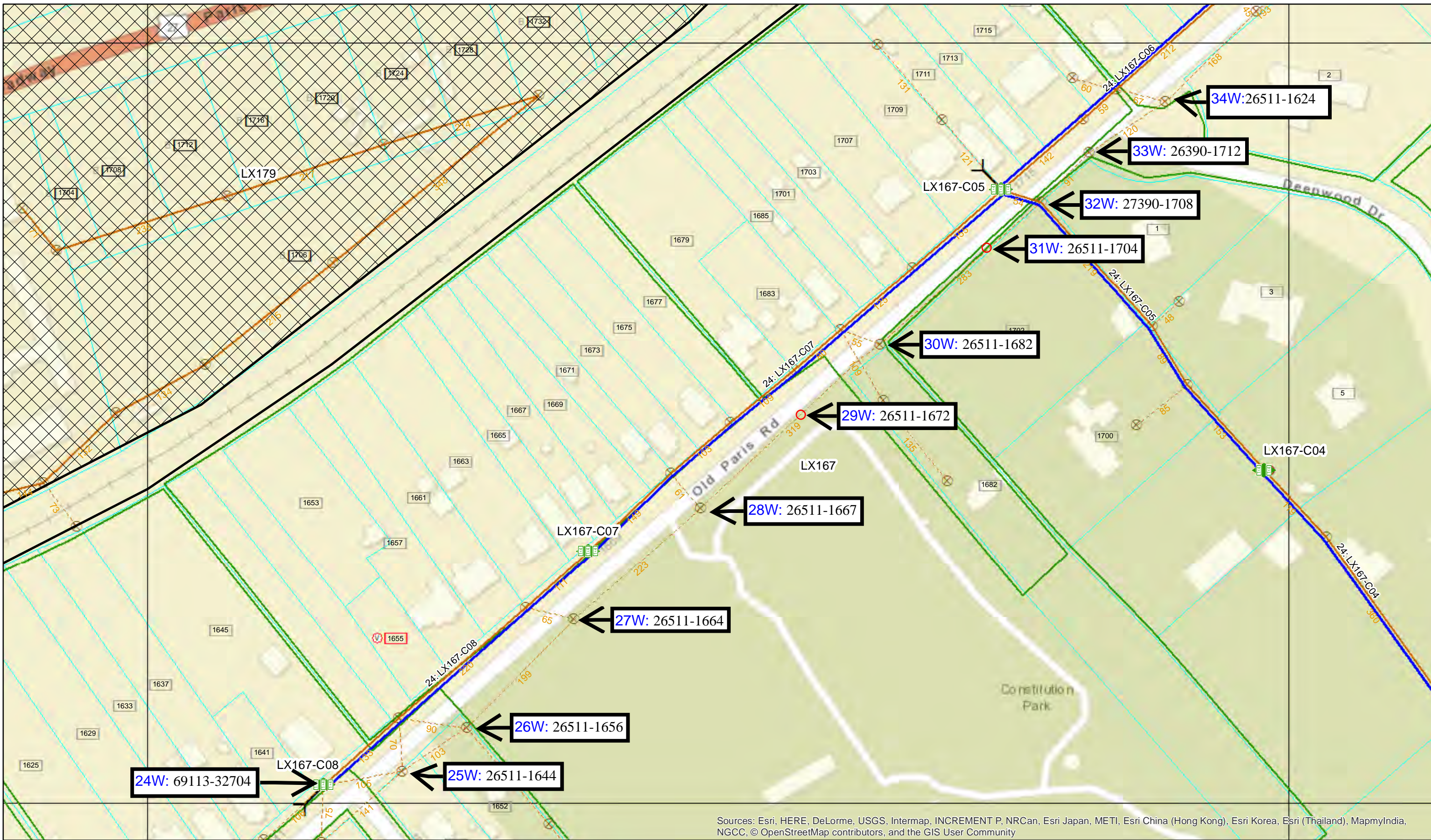
STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBM33
 PROJECT NUMBER:
 LXTNXY.00437.CB
 DATE 12/11/2017
 USER NAME: arqjls
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

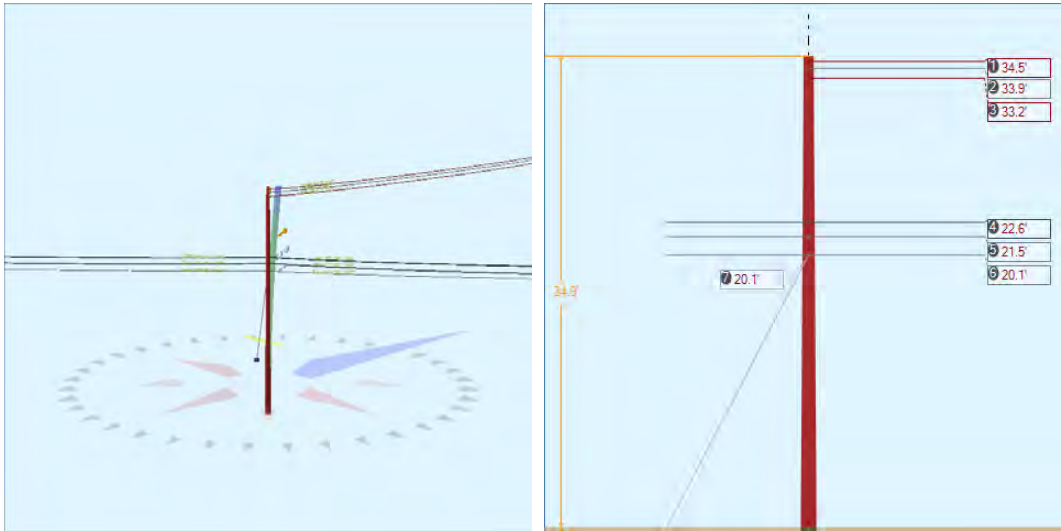
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-X01-00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN) Footage	ROADS
AERIAL (SLACK SPAN) Footage	WORK POINTS
NEW / PROPOSED TRENCH Footage	RAILROADS
EXISTING INHERITED TRENCH Footage	

Pole Num:	24W - 69113-32704	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.14	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.33	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066489 Deg	Longitude:	-84.468206 Deg	Elevation:	869.360581938776		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.3	0.0 327.7
Groundline	32.3	0.0 327.7
Vertical	0.6	17.5 127.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,494	348.6 327.7
Groundline	27,494	348.6 327.7
GL Allowable	86,015	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.9	307.8		0.0	327.7	0.0	0.0
? EHS 1/4 (Down)			20.1	0.0	327.7	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 348.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	575	59.5	19,422	70.6	22.6	1,539	61	1	1,539	22.6
Comms	208	21.6	4,801	17.5	5.6	380	613	6	386	5.7
GuyBraces	2	0.2	42	0.2	0.1	3	5	0	3	0.0
Pole	179	18.6	3,171	11.5	3.7	251	1,965	19	270	4.0
Insulators	1	0.1	57	0.2	0.1	5	40	0	5	0.1
Pole Load	966	100.0	27,494	100.0	32.0	2,178	2,684	26	2,204	32.4
Pole Reserve Capacity			58,521		68.0	4,622			4,596	67.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 348.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	576	59.6	19,465	70.8	22.6	1,542	73	1	1,543	22.7
Unknown, COMMUNICATION	210	21.8	4,858	17.7	5.7	385	647	6	391	5.8
Pole	179	18.6	3,171	11.5	3.7	251	1,965	19	270	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	966	100.0	27,494	100.0	32.0	2,178	2,684	26	2,204	32.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.47	6.18	0.3250	0.07	0.107	75.3	2.8	75.3	150	6,516	-3	88	6,601
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.95	6.22	0.3250	0.07	0.107	75.3	2.8	75.3	150	6,417	-3	87	6,501
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.23	6.26	0.3250	0.07	0.107	75.3	2.8	75.3	150	6,281	-3	85	6,363
										Totals:	19,214	-8	260	19,465

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	22.55	6.91	1.3300	1.97	0.337	140.0	49.9	140.0	925	13,023	55	1,464	14,543
CATV	CATV 1.0	Unknown, COMMUNICATION	22.55	6.91	1.3300	1.25	0.337	95.3	228.7	95.3	925	-13,519	38	982	-12,499
Telco	TELE 1.5	Unknown, COMMUNICATION	21.50	6.97	1.5000	2.31	0.900	140.0	49.9	140.0	2,000	26,842	97	1,525	28,465
Telco	TELE 1.5	Unknown, COMMUNICATION	21.50	6.97	1.5000	1.45	0.900	95.3	228.7	95.3	2,000	-27,863	66	1,023	-26,774
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.14	7.06	0.6570	1.95	0.190	140.0	49.9	140.0	750	9,430	32	827	10,289
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.14	7.06	0.6570	1.24	0.190	95.3	228.7	95.3	750	-9,789	22	555	-9,212
Totals:											-1,875	311	6,376	4,812	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV KU, UTILITY	34.47	0.00	92.9	2.8	2.00	3.00	3.19	0	15	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	33.95	0.00	92.9	2.8	2.00	3.00	3.19	0	15	14	
Spool	Spool Insulator - 25 kV KU, UTILITY	33.23	0.00	92.9	2.8	2.00	3.00	3.19	0	14	14	
Bolt	Three Bolt Unknown, COMMUNICATION	22.55	0.00	319.3	49.3	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	21.50	0.00	319.3	49.3	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	20.14	0.00	319.3	49.3	5.00	3.00	0.00	5	0	5	
Totals:										13	44	57

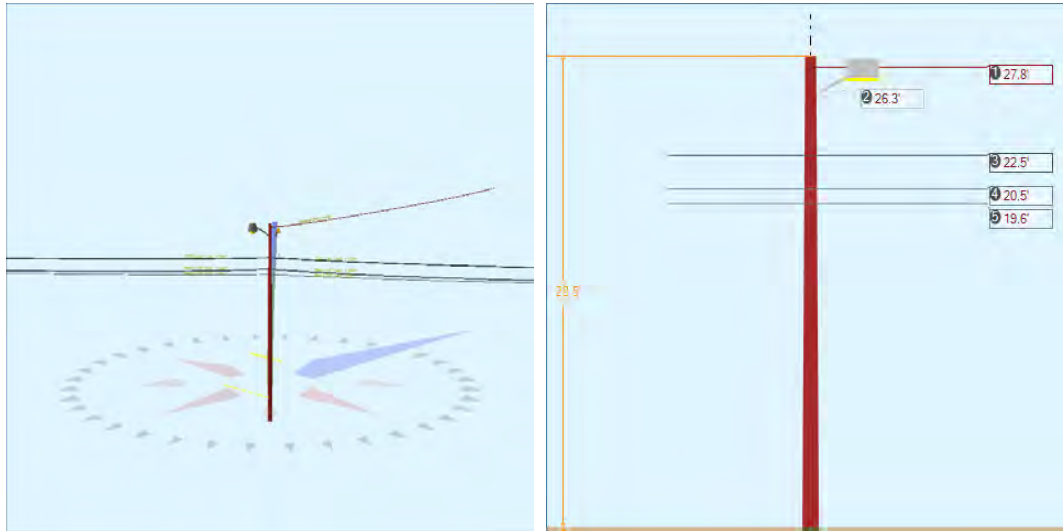
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4 Down	Unknown, COMMUNICATION	20.14	0.00	16.93	0.25	75.00	307.8	49.8	0.121	24.57	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	42	
Totals:										0	0	0	42

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.93	307.8	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	17.46	32.76	10.87	6.89	7.32	11.57	1.60e+6	60.00	57.00	34.86	418,529	4473.35	166.67

Pole Num:	25W - 26511-2644	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.49	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.32	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066750 Deg	Longitude:	-84.467844 Deg	Elevation:	876.290192682851		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.6	0.0
Groundline	25.6	0.0
Vertical	7.0	16.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,867	329.2
Groundline	13,867	329.2
GL Allowable	55,138	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 329.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	138	21.6	3,851	27.8	7.0	477	29	0	477	7.0
Comms	346	53.9	7,633	55.1	13.8	944	731	9	954	14.0
Pole	137	21.4	2,039	14.7	3.7	252	1,245	16	268	3.9
Streetlights	20	3.1	314	2.3	0.6	39	86	1	40	0.6
Insulators	1	0.1	29	0.2	0.1	4	32	0	4	0.1
Pole Load	642	100.0	13,867	100.0	25.2	1,716	2,123	27	1,743	25.6
Pole Reserve Capacity			41,271		74.9	5,084			5,057	74.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 329.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	158	24.7	4,180	30.1	7.6	517	118	2	519	7.6
Unknown, COMMUNICATION	346	53.9	7,648	55.2	13.9	946	760	10	956	14.1
Pole	137	21.4	2,039	14.7	3.7	252	1,245	16	268	3.9
Totals:	642	100.0	13,867	100.0	25.2	1,716	2,123	27	1,743	25.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	TRIPLEX 4 AWG	KU, UTILITY	27.84	5.88	0.6800	0.68	0.164	67.4	357.8	67.5	150	3,667	12	184	3,864
Totals:											3,667	12	184	3,864	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.50	6.19	1.3300	1.98	0.337	140.5	50.8	140.5	925	3,041	56	1,668	4,766
CATV	CATV 1.0	Unknown, COMMUNICATION	22.50	6.19	1.3300	1.97	0.337	140.0	229.9	140.0	925	-3,364	56	1,658	-1,650

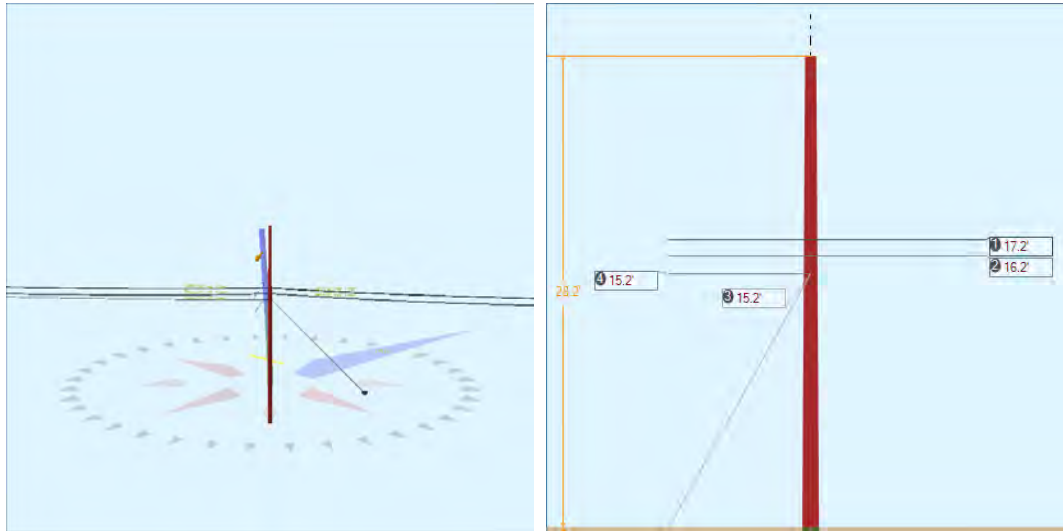
Telco	TELE 1.5	Unknown, COMMUNICATION	20.47	6.31	1.5000	2.32	0.900	140.5	50.8	140.5	2,000	5,983	100	1,659	7,743
Telco	TELE 1.5	Unknown, COMMUNICATION	20.47	6.31	1.5000	2.31	0.900	140.0	229.9	140.0	2,000	-6,619	100	1,649	-4,870
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.59	6.36	0.6570	1.96	0.190	140.5	50.8	140.5	750	2,147	33	919	3,099
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.59	6.36	0.6570	1.96	0.190	140.0	229.9	140.0	750	-2,375	33	913	-1,429
Totals:											-1,186	378	8,466	7,658	

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.33	3.47	180.0	180.0	45.00	24.00	20.00	3.00	36.00	-202	517	315
Totals:											-202	517	315	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.84	0.00	357.8	357.8	2.00	3.00	3.19	2	13	14	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.50	0.00	320.3	50.3	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.47	0.00	320.3	50.3	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.59	0.00	320.3	50.3	5.00	3.00	0.00	5	0	5	
Totals:											16	13	29

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.95	32.94	9.33	9.89	6.69	9.98	1.60e+6	60.00	57.00	28.51	30,132	303.30	14.29

Pole Num:	26W - 226511-1656	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.19	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067002 Deg	Longitude:	-84.467476 Deg	Elevation:	885.968116637693		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	18.3	143.4
Groundline	18.3	143.4
Vertical	0.8	241.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,651	143.4
Groundline	9,651	143.4
GL Allowable	54,457	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	17.0	61.7		4.7	143.4	6.2	270.0
? EHS 1/4 (Down)			15.2	15.7	143.4	22.8	270.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 163.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	662	101.6	9,875	102.3	18.1	1,255	711	9	1,264	18.6
GuyBraces	-139	-21.3	-2,063	-21.4	-3.8	-262	953	12	-250	-3.7
Pole	128	19.7	1,853	19.2	3.4	236	1,223	16	251	3.7
Insulators	0	0.0	-14	-0.2	0.0	-2	28	0	-1	0.0
Pole Load	651	100.0	9,651	100.0	17.7	1,227	2,916	38	1,264	18.6
Pole Reserve Capacity			44,806		82.3	5,573			5,536	81.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 163.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	523	80.3	7,798	80.8	14.3	991	1,693	22	1,013	14.9
Pole	128	19.7	1,853	19.2	3.4	236	1,223	16	251	3.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	651	100.0	9,651	100.0	17.7	1,227	2,916	38	1,264	18.6

Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.19	6.47	1.3300	2.33	0.337	159.9	49.7	160.0	925	-8,371	-62	1,339	-7,094
CATV	CATV 1.0	Unknown,	17.19	6.47	1.3300	1.98	0.337	140.5	230.8	140.5	925	8,006	-55	1,187	9,139
Telco	TELE 1.5	Unknown,	16.22	6.53	1.5000	2.74	0.900	159.9	49.7	160.0	2,000	-17,078	-110	1,381	-15,807
Telco	TELE 1.5	Unknown,	16.22	6.53	1.5000	2.32	0.900	140.5	230.8	140.5	2,000	16,335	-96	1,224	17,463
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.15	6.59	0.6570	1.96	0.190	140.5	230.8	140.5	750	5,722	-32	661	6,351
										Totals:	4,614	-355	5,792	10,051	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.19	0.00	320.2	230.2	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.22	0.00	320.2	230.2	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	15.15	0.00	320.8	230.8	5.00	3.00	0.00	-5	0	-5
Totals:										-14	0	-14

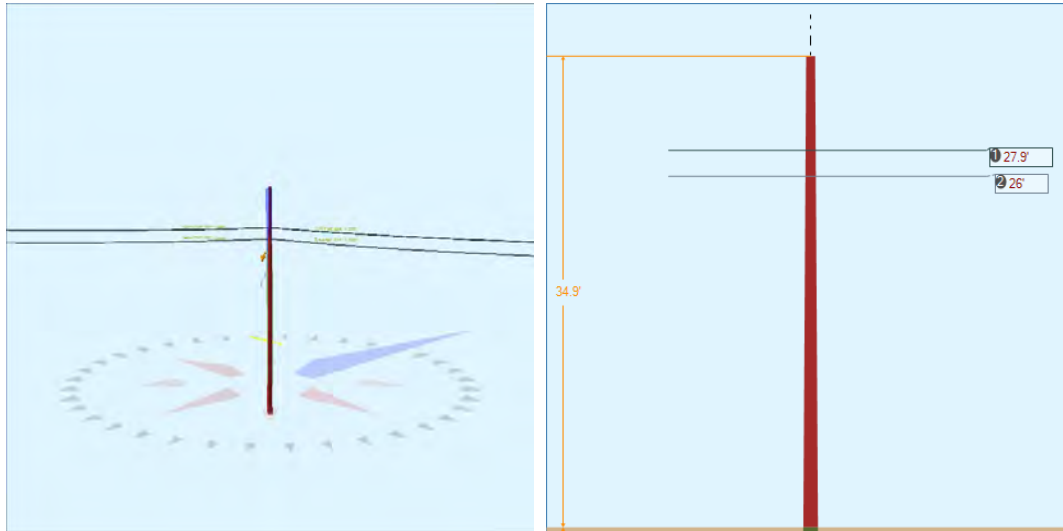
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	15.15	0.00	16.95	0.25	75.00	61.7	41.7	0.121	20.98	0.28

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,368	1,243	939	624	701	-145	-2,100
Totals:										624	701	-145	-2,100

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.95	61.7	20,000	1.00	20,000	1,243	939	6.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	14.38	32.50	9.39	6.34	6.69	9.93	1.60e+6	60.00	57.00	28.15	344,107	3645.53	125.00

Pole Num:	27W - 26511-1664	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.14	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067297 Deg	Longitude:	-84.467066 Deg	Elevation:	887.125733015728		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.1	0.0
Groundline	23.1	0.0
Vertical	8.5	19.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,775	140.0
Groundline	15,775	140.0
GL Allowable	69,390	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	454	71.9	12,633	80.1	18.2	1,239	829	9	1,248	18.4
Pole	177	28.1	3,132	19.9	4.5	307	1,680	18	326	4.8
Insulators	0	0.0	10	0.1	0.0	1	19	0	1	0.0
Pole Load	632	100.0	15,775	100.0	22.7	1,547	2,528	28	1,575	23.2
Pole Reserve Capacity			53,615		77.3	5,253			5,225	76.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	454	71.9	12,643	80.1	18.2	1,240	848	9	1,249	18.4
Pole	177	28.1	3,132	19.9	4.5	307	1,680	18	326	4.8
Totals:	632	100.0	15,775	100.0	22.7	1,547	2,528	28	1,575	23.2

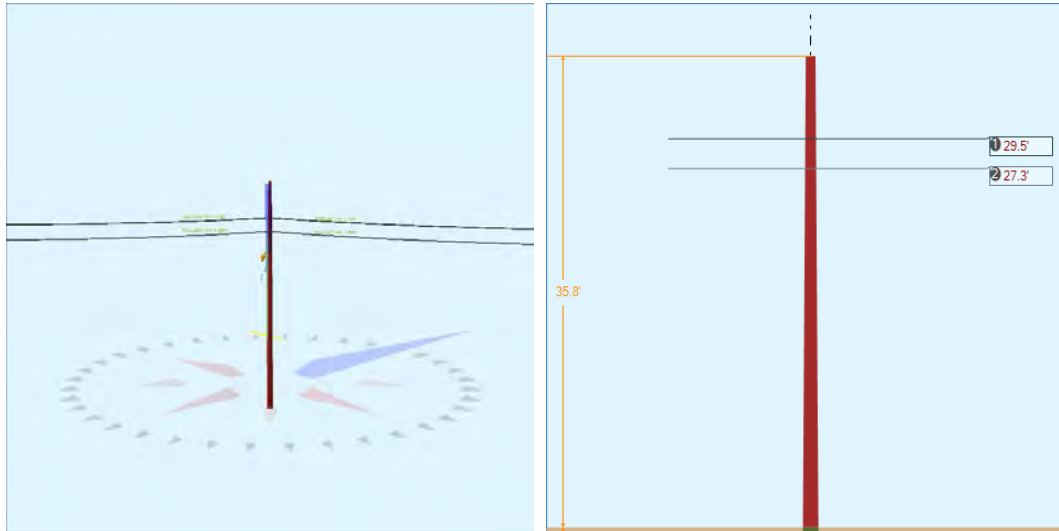
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	27.89	6.25	1.3300	3.66	0.337	224.0	50.2	224.1	925	95	92	3,334	3,521
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	27.89	6.25	1.3300	2.33	0.337	159.9	229.7	160.0	925	131	66	2,380	2,576
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	25.96	6.36	1.5000	4.37	0.900	224.0	50.2	224.1	2,000	190	163	3,392	3,746
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	25.96	6.36	1.5000	2.74	0.900	159.9	229.7	160.0	2,000	263	116	2,422	2,801
	COMMUNICATION														
Totals:											678	437	11,529	12,644	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	27.89	0.00	139.9	49.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	25.96	0.00	139.9	49.9	5.00	3.00	0.00	5	0	5
Totals:										10	0	10

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.59	33.19	10.00	11.68	6.69	10.77	1.60e+6	60.00	57.00	34.86	29,856	297.39	11.76

Pole Num:	28W - 26511-1667	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.18	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.70	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067705 Deg	Longitude:	-84.466475 Deg	Elevation:	889.790312918136		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.5	0.0
Groundline	19.5	0.0
Vertical	7.3	20.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,920	140.2
Groundline	16,920	140.2
GL Allowable	88,665	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	452	69.5	13,299	78.6	15.0	1,020	864	8	1,028	15.1
Pole	199	30.5	3,610	21.3	4.1	277	2,046	19	296	4.4
Insulators	0	0.0	10	0.1	0.0	1	19	0	1	0.0
Pole Load	651	100.0	16,920	100.0	19.1	1,297	2,929	27	1,325	19.5
Pole Reserve Capacity			71,745		80.9	5,503			5,475	80.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	452	69.5	13,310	78.7	15.0	1,021	883	8	1,029	15.1
Pole	199	30.5	3,610	21.3	4.1	277	2,046	19	296	4.4
Totals:	651	100.0	16,920	100.0	19.1	1,297	2,929	27	1,325	19.5

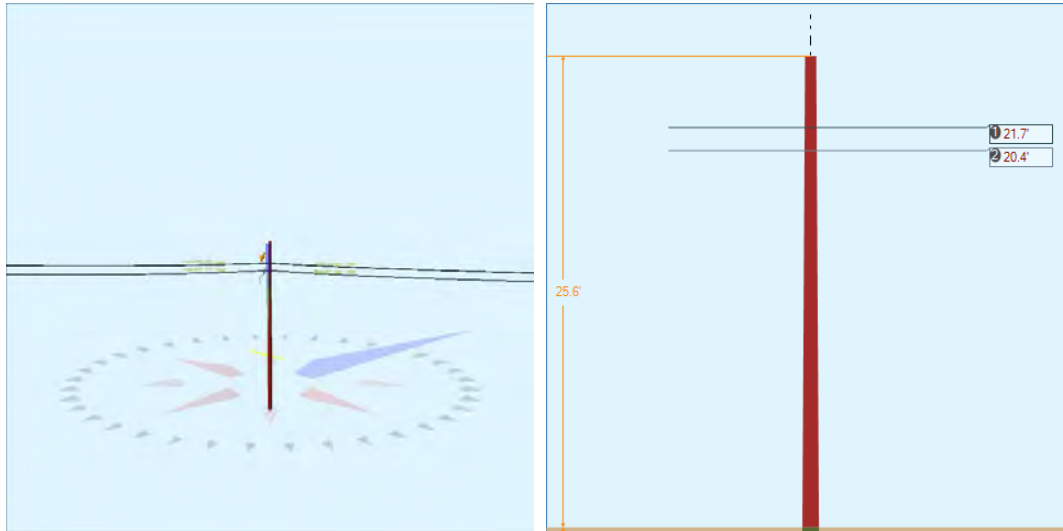
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	29.54	6.54	1.3300	2.64	0.337	176.3	50.3	176.3	925	52	76	2,779	2,907
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	29.54	6.54	1.3300	3.66	0.337	224.0	230.2	224.1	925	-4	96	3,532	3,624
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	27.26	6.68	1.5000	3.13	0.900	176.3	50.3	176.4	2,000	103	135	2,803	3,041
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	27.26	6.68	1.5000	4.37	0.900	224.0	230.2	224.1	2,000	-8	171	3,562	3,725
	COMMUNICATION														
Totals:											143	477	12,676	13,297	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown,	29.54	0.00	140.2	50.2	5.00	3.00	0.00	5	0	5
	COMMUNICATION											
Bolt	Three Bolt	Unknown,	27.26	0.00	140.2	50.2	5.00	3.00	0.00	5	0	5
	COMMUNICATION											
Totals:										10	0	10

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.00	33.13	10.87	12.75	7.32	11.69	1.60e+6	60.00	57.00	35.82	39,973	401.22	13.70

Pole Num:	29W - 26511-1652	Pole Length / Class:	30 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.42	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	28.06	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068017 Deg	Longitude:	-84.466021 Deg	Elevation:	883.963035024022		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	25.5	140.5
Groundline	25.5	140.5
Vertical	7.4	140.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,962	140.5
Groundline	9,962	140.5
GL Allowable	39,639	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	387	77.6	8,437	84.7	21.3	1,449	659	11	1,460	21.5
Pole	112	22.4	1,516	15.2	3.8	260	903	14	275	4.0
Insulators	0	0.0	9	0.1	0.0	2	19	0	2	0.0
Pole Load	499	100.0	9,962	100.0	25.1	1,711	1,581	25	1,736	25.5
Pole Reserve Capacity			29,677		74.9	5,089			5,064	74.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	387	77.6	8,446	84.8	21.3	1,451	678	11	1,462	21.5
Pole	112	22.4	1,516	15.2	3.8	260	903	14	275	4.0
Totals:	499	100.0	9,962	100.0	25.1	1,711	1,581	25	1,736	25.5

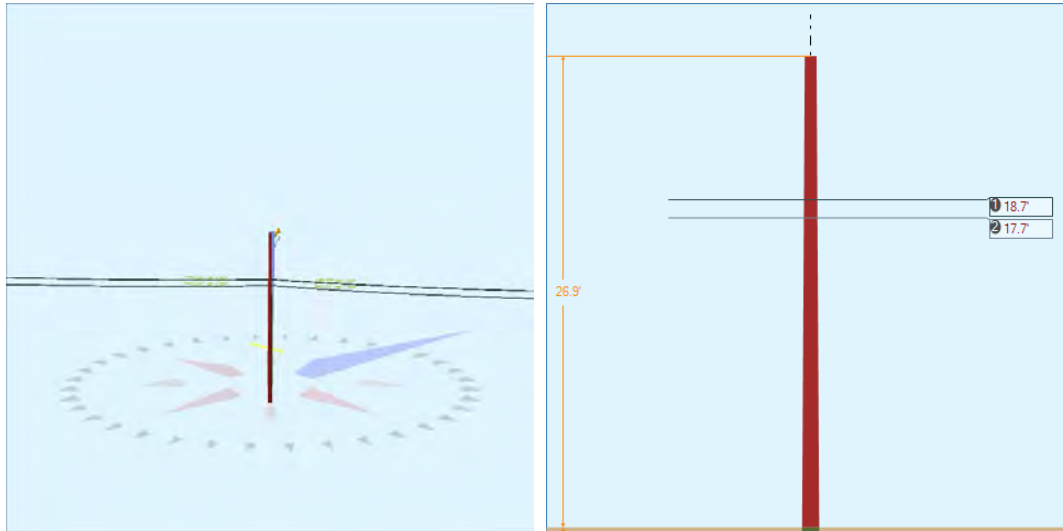
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.71	5.74	1.3300	1.78	0.337	128.9	51.2	128.9	925	187	49	1,493	1,728
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	21.71	5.74	1.3300	2.64	0.337	176.3	230.3	176.3	925	129	66	2,042	2,237
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.44	5.81	1.5000	2.08	0.900	128.9	51.2	128.9	2,000	380	86	1,536	2,002
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.44	5.81	1.5000	3.13	0.900	176.3	230.3	176.4	2,000	262	117	2,102	2,481
	COMMUNICATION														
Totals:											958	318	7,173	8,448	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.71	0.00	140.7	50.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.44	0.00	140.7	50.7	5.00	3.00	0.00	5	0	5
Totals:										9	0	9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.09	33.05	8.33	8.28	6.05	8.94	1.60e+6	60.00	57.00	25.58	21,307	213.64	13.51

Pole Num:	30W - 26511-1682	Pole Length / Class:	30 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	3.10	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	30.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068246 Deg	Longitude:	-84.465679 Deg	Elevation:	878.24872538772		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	17.5	0.0
Groundline	17.5	0.0
Vertical	4.6	14.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,741	320.9
Groundline	8,741	320.9
GL Allowable	51,050	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	361	73.7	6,888	78.8	13.5	917	639	9	926	13.6
Pole	129	26.3	1,843	21.1	3.6	246	1,138	15	261	3.8
Insulators	0	0.0	10	0.1	0.0	1	19	0	2	0.0
Pole Load	490	100.0	8,741	100.0	17.1	1,164	1,795	24	1,188	17.5
Pole Reserve Capacity			42,309		82.9	5,636			5,612	82.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	361	73.7	6,898	78.9	13.5	919	658	9	928	13.6
Pole	129	26.3	1,843	21.1	3.6	246	1,138	15	261	3.8
Totals:	490	100.0	8,741	100.0	17.1	1,164	1,795	24	1,188	17.5

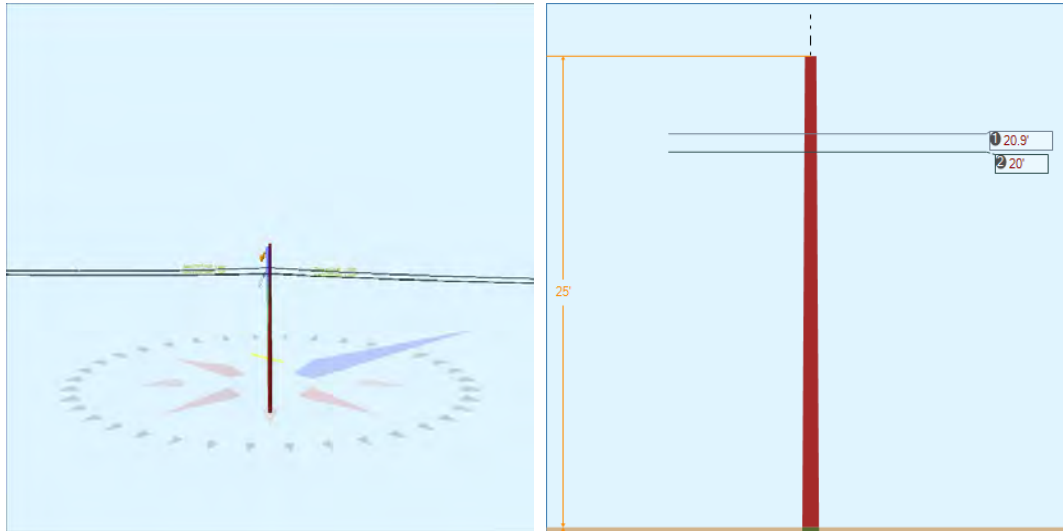
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.70	6.30	1.3300	2.46	0.337	167.0	50.6	167.0	925	104	69	1,666	1,840
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	18.70	6.30	1.3300	1.78	0.337	128.9	231.2	128.9	925	77	53	1,286	1,416
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.66	6.36	1.5000	2.91	0.900	167.0	50.6	167.0	2,000	213	121	1,720	2,054
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	17.66	6.36	1.5000	2.08	0.900	128.9	231.2	128.9	2,000	156	94	1,327	1,578
	COMMUNICATION														
Totals:											551	337	5,999	6,887	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.70	0.00	320.9	230.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.66	0.00	320.9	230.9	5.00	3.00	0.00	5	0	5
Totals:										10	0	10

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	14.41	32.51	9.19	8.54	6.69	9.72	1.60e+6	60.00	57.00	26.90	39,268	390.32	21.74

Pole Num:	31W - 26511-1704	Pole Length / Class:	30 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	27.87	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068552 Deg	Longitude:	-84.465249 Deg	Elevation:	876.151445579964		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.7	0.0
Groundline	23.7	0.0
Vertical	7.1	15.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,078	140.8
Groundline	9,078	140.8
GL Allowable	38,849	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	358	76.6	7,619	83.9	19.6	1,335	641	10	1,345	19.8
Pole	109	23.4	1,450	16.0	3.7	254	877	14	268	3.9
Insulators	0	0.0	9	0.1	0.0	2	19	0	2	0.0
Pole Load	467	100.0	9,078	100.0	23.4	1,590	1,538	25	1,615	23.8
Pole Reserve Capacity			29,771		76.6	5,210			5,185	76.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	358	76.6	7,628	84.0	19.6	1,336	660	11	1,347	19.8
Pole	109	23.4	1,450	16.0	3.7	254	877	14	268	3.9
Totals:	467	100.0	9,078	100.0	23.4	1,590	1,538	25	1,615	23.8

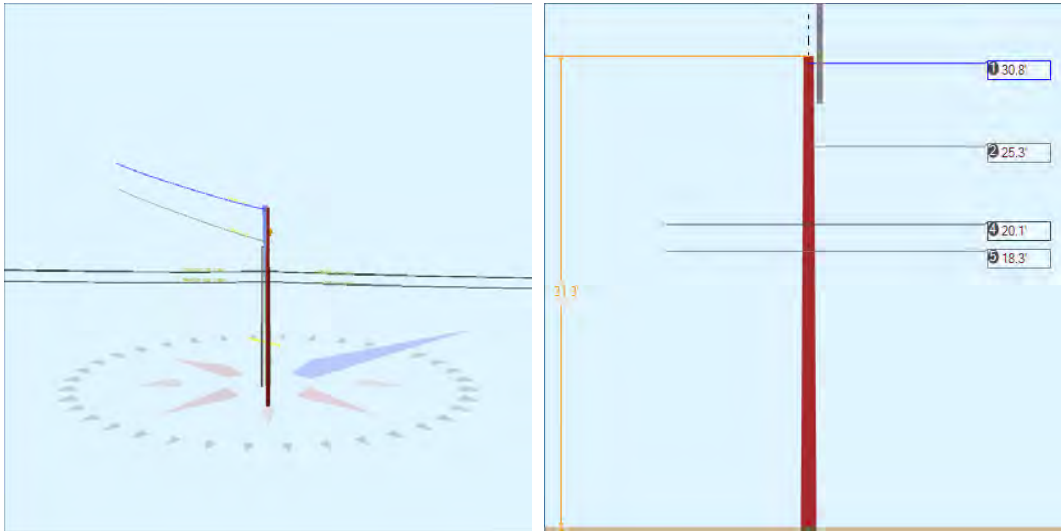
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	TELE 1.5	Unknown,	20.92	5.76	1.5000	2.11	0.900	130.2	51.1	130.2	2,000	235	86	1,589	1,909
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.92	5.76	1.5000	2.91	0.900	167.0	230.6	167.0	2,000	130	110	2,038	2,278
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	19.95	5.81	1.3300	1.80	0.337	130.2	51.1	130.2	925	104	50	1,386	1,539
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	19.95	5.81	1.3300	2.46	0.337	167.0	230.6	167.0	925	57	64	1,778	1,899
	COMMUNICATION														
Totals:											526	309	6,790	7,625	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.92	0.00	140.8	50.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.95	0.00	140.8	50.8	5.00	3.00	0.00	5	0	5
Totals:										9	0	9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	15.82	33.02	8.28	8.10	6.05	8.88	1.60e+6	60.00	57.00	25.05	21,513	216.56	14.08

Pole Num:	32W - 27390-1708	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	3.71	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.33	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068785 Deg	Longitude:	-84.464894 Deg	Elevation:	870.621083632454		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.7	0.0
Groundline	22.7	0.0
Vertical	4.6	15.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,565	308.5
Groundline	13,565	308.5
GL Allowable	60,626	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 308.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	193	30.1	5,378	39.6	8.9	608	29	0	608	8.9
Comms	235	36.7	4,704	34.7	7.8	532	437	5	537	7.9
Pole	153	23.9	2,449	18.1	4.0	277	1,423	17	294	4.3
Risers	57	8.9	933	6.9	1.5	106	47	1	106	1.6
Insulators	3	0.4	102	0.8	0.2	12	28	0	12	0.2
Pole Load	641	100.0	13,565	100.0	22.4	1,534	1,964	24	1,557	22.9
Pole Reserve Capacity			47,061		77.6	5,266			5,243	77.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 308.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	253	39.4	6,402	47.2	10.6	724	85	1	725	10.7
Unknown, COMMUNICATION	235	36.7	4,714	34.8	7.8	533	456	5	538	7.9
Pole	153	23.9	2,449	18.1	4.0	277	1,423	17	294	4.3
Totals:	641	100.0	13,565	100.0	22.4	1,534	1,964	24	1,557	22.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#6 COPPER SOLID KU, UTILITY	30.80	16.12	0.1620	0.10	0.079	73.8	288.9	73.8	100	2,901	4	69	2,974
Neutral	#6 COPPER SOLID KU, UTILITY	25.29	6.19	0.1620	0.10	0.079	73.8	288.9	73.8	100	2,383	7	57	2,447
										Totals:	5,284	11	127	5,421

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.10	6.49	1.3300	0.92	0.337	72.4	50.8	72.4	925	-3,958	30	757	-3,170

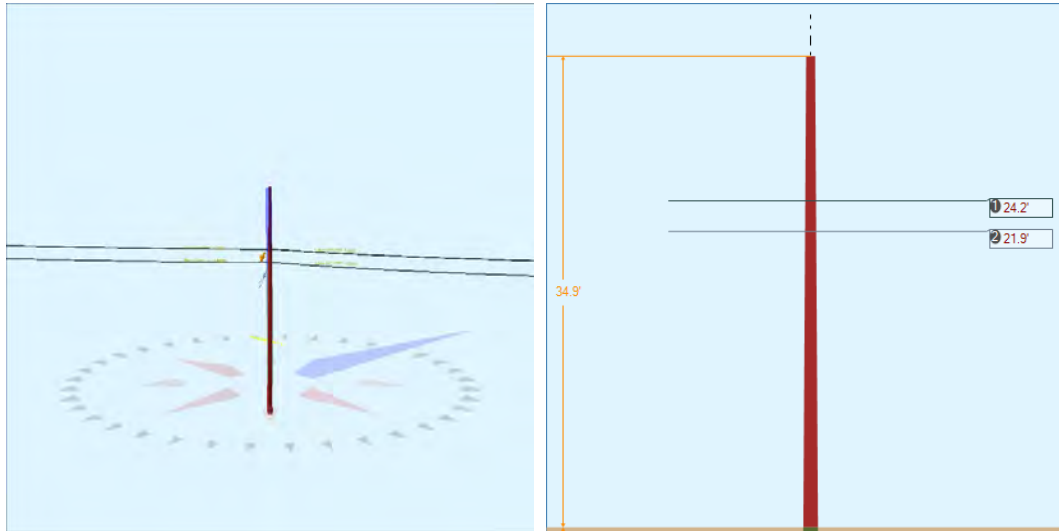
CATV	CATV 1.0	Unknown, COMMUNICATION	20.10	6.49	1.3300	1.80	0.337	130.2	231.1	130.2	925	4,053	54	1,360	5,467
Telco	TELE 1.5	Unknown, COMMUNICATION	18.33	6.59	1.5000	1.05	0.900	72.4	50.8	72.4	2,000	-7,800	53	754	-6,993
Telco	TELE 1.5	Unknown, COMMUNICATION	18.33	6.59	1.5000	2.11	0.900	130.2	231.1	130.2	2,000	7,988	96	1,355	9,438
Totals:											282	233	4,226	4,742	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 228.0°	Riser KU, UTILITY	24.68	5.13	228.0	228.0	24.68	296.14	4.00	4.00	296.14	4	937	941
Totals:											4	937	941

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	30.80	0.00	288.9	288.9	3.00	3.80	12.75	7	72	79	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.29	0.00	288.9	288.9	2.00	3.00	3.19	2	12	13	
Bolt	Three Bolt Unknown, COMMUNICATION	20.10	0.00	321.0	231.0	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	18.33	0.00	321.0	231.0	5.00	3.00	0.00	5	0	5	
Totals:										19	83	103

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	15.41	32.59	9.71	9.35	6.69	10.30	1.60e+6	60.00	57.00	31.29	42,883	427.02	21.74

Pole Num:	33W - 26390-1712	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.11	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068912 Deg	Longitude:	-84.464706 Deg	Elevation:	862.363725348953		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	14.3	0.0
Groundline	14.3	0.0
Vertical	5.4	17.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,679	140.7
Groundline	9,679	140.7
GL Allowable	69,460	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	272	60.5	6,530	67.5	9.4	640	525	6	646	9.5
Pole	178	39.5	3,139	32.4	4.5	308	1,682	18	326	4.8
Insulators	0	0.0	10	0.1	0.0	1	19	0	1	0.0
Pole Load	449	100.0	9,679	100.0	13.9	948	2,226	24	973	14.3
Pole Reserve Capacity			59,781		86.1	5,852			5,827	85.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	272	60.5	6,540	67.6	9.4	641	544	6	647	9.5
Pole	178	39.5	3,139	32.4	4.5	308	1,682	18	326	4.8
Totals:	449	100.0	9,679	100.0	13.9	948	2,226	24	973	14.3

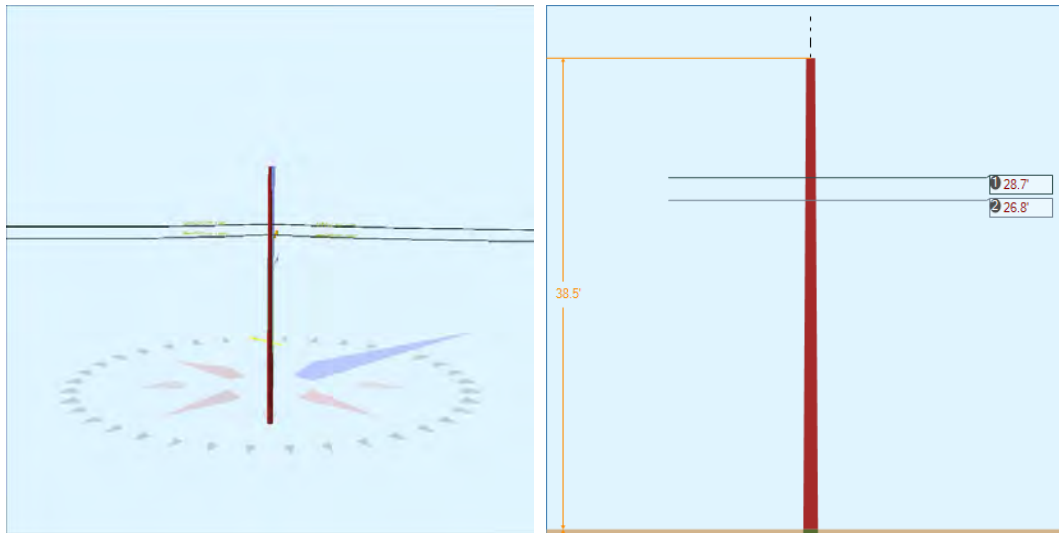
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.17	6.47	1.3300	2.54	0.337	170.9	50.8	171.0	925	32	73	2,205	2,309
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	24.17	6.47	1.3300	0.92	0.337	72.4	230.8	72.4	925	-32	31	934	932
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	21.91	6.60	1.5000	3.00	0.900	170.9	50.8	171.0	2,000	62	129	2,185	2,376
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	21.91	6.60	1.5000	1.06	0.900	72.4	230.8	72.4	2,000	-62	55	925	917
	COMMUNICATION														
Totals:											0	287	6,248	6,535	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown,	24.17	0.00	140.8	50.8	5.00	3.00	0.00	5	0	5
	COMMUNICATION											
Bolt	Three Bolt	Unknown,	21.91	0.00	140.8	50.8	5.00	3.00	0.00	5	0	5
	COMMUNICATION											
Totals:										10	0	10

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.08	32.78	10.11	10.48	6.69	10.77	1.60e+6	60.00	57.00	34.89	41,019	412.30	18.52

Pole Num:	34W - 26511-1624	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.53	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069216 Deg	Longitude:	-84.464253 Deg	Elevation:	869.06583962062		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	16.2	0.0
Groundline	16.2	0.0
Vertical	6.0	19.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	14,767	320.2
Groundline	14,767	320.2
GL Allowable	93,129	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	371	63.3	10,595	71.8	11.4	774	588	5	779	11.5
Pole	215	36.7	4,161	28.2	4.5	304	2,244	20	324	4.8
Insulators	0	0.0	11	0.1	0.0	1	19	0	1	0.0
Pole Load	586	100.0	14,767	100.0	15.9	1,079	2,852	26	1,104	16.2
Pole Reserve Capacity			78,362		84.1	5,721			5,696	83.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	371	63.3	10,606	71.8	11.4	775	607	5	780	11.5
Pole	215	36.7	4,161	28.2	4.5	304	2,244	20	324	4.8
Totals:	586	100.0	14,767	100.0	15.9	1,079	2,852	26	1,104	16.2

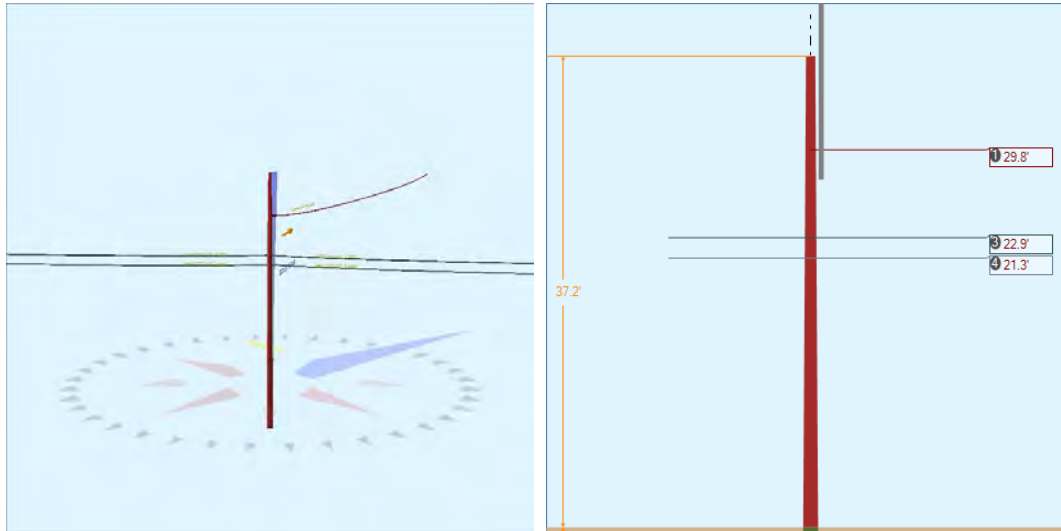
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	28.70	6.74	1.3300	1.35	0.337	101.7	49.5	101.7	925	326	45	1,557	1,928
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	28.70	6.74	1.3300	2.54	0.337	170.9	230.8	171.0	925	277	76	2,618	2,971
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	26.85	6.85	1.5000	1.56	0.900	101.7	49.5	101.7	2,000	658	80	1,592	2,330
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	26.85	6.85	1.5000	3.00	0.900	170.9	230.8	171.0	2,000	560	134	2,677	3,370
	COMMUNICATION														
Totals:											1,821	334	8,444	10,599	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	28.70	0.00	320.2	230.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	26.85	0.00	320.2	230.2	5.00	3.00	0.00	5	0	5
Totals:										11	0	11

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.22	32.87	11.13	12.56	7.32	11.88	1.60e+6	60.00	57.00	38.47	47,447	475.31	16.67

Pole Num:	35W - 26511-1728	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.79	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069404 Deg	Longitude:	-84.463981 Deg	Elevation:	864.457711083268		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	15.3	0.0
Groundline	15.3	0.0
Vertical	4.9	17.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,364	330.7
Groundline	13,364	330.7
GL Allowable	89,662	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 330.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	147	25.5	4,396	32.9	4.9	335	50	0	335	4.9
Comms	187	32.3	4,370	32.7	4.9	333	463	4	337	5.0
Pole	207	35.8	3,855	28.9	4.3	294	2,135	20	313	4.6
Risers	36	6.3	716	5.4	0.8	55	54	1	55	0.8
Insulators	1	0.1	27	0.2	0.0	2	23	0	2	0.0
Pole Load	577	100.0	13,364	100.0	14.9	1,018	2,725	25	1,043	15.3
Pole Reserve Capacity			76,298		85.1	5,782			5,757	84.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 330.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	184	31.9	5,128	38.4	5.7	391	108	1	392	5.8
Unknown, COMMUNICATION	187	32.3	4,381	32.8	4.9	334	482	4	338	5.0
Pole	207	35.8	3,855	28.9	4.3	294	2,135	20	313	4.6
Totals:	577	100.0	13,364	100.0	14.9	1,018	2,725	25	1,043	15.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	TRIPLEX 1/0	KU, UTILITY	29.81	6.60	1.0300	0.68	0.399	65.8	345.0	65.9	150	4,332	27	56	4,414
Totals:											4,332	27	56	4,414	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.87	7.01	1.3300	1.52	0.337	112.6	50.4	112.6	925	3,764	51	1,334	5,149
CATV	CATV 1.0	Unknown, COMMUNICATION	22.87	7.01	1.3300	1.35	0.337	101.7	229.5	101.7	925	-4,091	46	1,197	-2,848

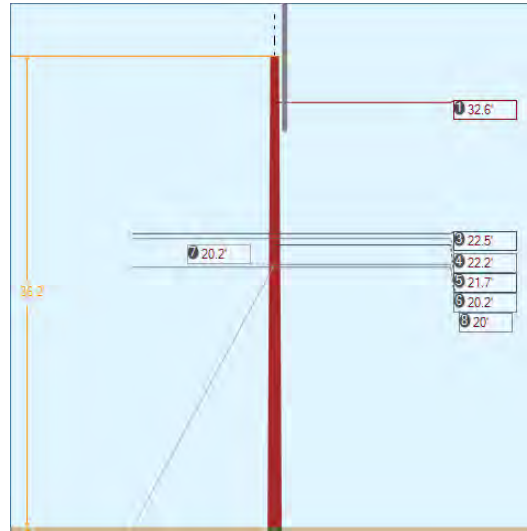
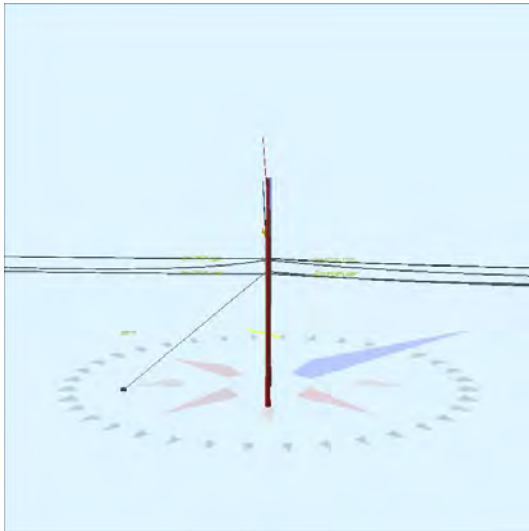
Telco	TELE 1.5	Unknown, COMMUNICATION	21.27	7.10	1.5000	1.76	0.900	112.6	50.4	112.6	2,000	7,568	90	1,356	9,013
Telco	TELE 1.5	Unknown, COMMUNICATION	21.27	7.10	1.5000	1.56	0.900	101.7	229.5	101.7	2,000	-8,224	81	1,216	-6,927
Totals:												-983	268	5,103	4,388

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 297.0°	Riser	KU, UTILITY	28.66	6.09	297.0	297.0	28.66	343.88	4.00	4.00	343.88	24	696	719
Totals:												24	696	719

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.81	0.00	345.0	345.0	2.00	3.00	3.19	2	14	16
Bolt	Three Bolt	Unknown, COMMUNICATION	22.87	0.00	319.9	49.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.27	0.00	319.9	49.9	5.00	3.00	0.00	6	0	6
Totals:										13	14	27

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.45	32.64	11.05	11.80	7.32	11.73	1.60e+6	60.00	57.00	37.21	55,995	556.11	20.41

Pole Num:	36W - 26390-1802	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	3.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.070346 Deg	Longitude:	-84.462624 Deg	Elevation:	879.307011614518		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.7	0.0 311.2
Groundline	29.7	0.0 311.2
Vertical	1.8	19.0 38.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,967	319.1 311.2
Groundline	20,967	319.1 311.2
GL Allowable	72,376	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	25.1	218.2		9.6	311.2	11.0	30.0
? EHS 1/4 (Down)			20.2	31.9	311.2	40.5	30.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 319.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	324	38.4	10,414	49.7	14.4	994	46	0	994	14.6
Comms	556	65.8	11,591	55.3	16.0	1,106	1,154	12	1,118	16.4
GuyBraces	-274	-32.4	-5,431	-25.9	-7.5	-518	1,818	19	-499	-7.3
Pole	184	21.8	3,287	15.7	4.5	314	1,775	19	333	4.9
Risers	54	6.4	1,095	5.2	1.5	105	59	1	105	1.5
Insulators	1	0.1	11	0.1	0.0	1	61	1	2	0.0
Pole Load	844	100.0	20,967	100.0	29.0	2,001	4,912	52	2,053	30.2
Pole Reserve Capacity			51,409		71.0	4,799			4,747	69.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 319.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	378	44.8	11,526	55.0	15.9	1,100	108	1	1,101	16.2
Unknown, COMMUNICATION	282	33.4	6,155	29.4	8.5	587	3,028	32	620	9.1
Pole	184	21.8	3,287	15.7	4.5	314	1,775	19	333	4.9
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	844	100.0	20,967	100.0	29.0	2,001	4,912	52	2,053	30.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	TRIPLEX 4 AWG	KU, UTILITY	32.60	6.05	0.6800	1.10	0.164	106.1	314.3	106.2	250	10,557	23	-5	10,575
Totals:											10,557	23	-5	10,575	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.55	6.64	1.3300	1.91	0.337	136.5	50.4	136.6	925	-613	-59	1,622	950

CATV	CATV 1.0	Unknown, COMMUNICATION	22.55	6.64	1.3300	0.89	0.337	69.7	229.0	69.7	925	-50	-30	831	750
Telco	TELE 1.5	Unknown, COMMUNICATION	22.16	6.66	1.5000	1.12	1.690	69.7	229.0	69.9	2,000	-106	2	893	789
Telco	TELE 1.5	Unknown, COMMUNICATION	22.16	6.66	1.5000	2.83	1.690	136.5	50.4	136.6	2,000	-1,301	-4	1,742	437
CATV	CATV 1.0	Unknown, COMMUNICATION	21.67	6.69	1.3300	1.40	0.337	106.1	314.3	106.3	250	7,017	46	-5	7,058
Telco	TELE 1.5	Unknown, COMMUNICATION	20.17	6.78	1.5000	2.66	0.900	136.5	50.4	136.6	1,250	-740	-2	1,586	843
Telco	TELE 1.5	Unknown, COMMUNICATION	19.97	6.79	1.5000	2.24	0.900	136.5	50.4	136.6	2,000	-1,173	-106	1,570	291
Telco	TELE 1.5	Unknown, COMMUNICATION	19.97	6.79	1.5000	1.01	0.900	69.7	229.0	69.7	2,000	-96	-54	804	654
Totals:											2,938	-208	9,041	11,771	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser KU, UTILITY	30.84	5.45	360.0	360.0	30.84	370.05	4.00	4.00	370.05	11	1,102	1,112
Totals:											11	1,102	1,112

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV KU, UTILITY	32.60	0.00	314.3	314.3	2.00	3.00	3.19	2	15	17	
Bolt	Single Bolt Unknown, COMMUNICATION	22.55	0.00	139.7	139.7	5.00	3.00	0.00	-5	0	-5	
Bolt	Single Bolt Unknown, COMMUNICATION	22.16	0.00	230.4	140.4	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt Unknown, COMMUNICATION	22.16	0.00	50.4	140.4	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt Unknown, COMMUNICATION	21.67	0.00	314.3	404.3	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt Unknown, COMMUNICATION	20.17	0.00	50.4	140.4	5.00	3.00	0.00	0	0	0	
Bolt	Single Bolt Unknown, COMMUNICATION	19.97	0.00	139.7	139.7	5.00	3.00	0.00	-5	0	-5	
Totals:										-4	15	11

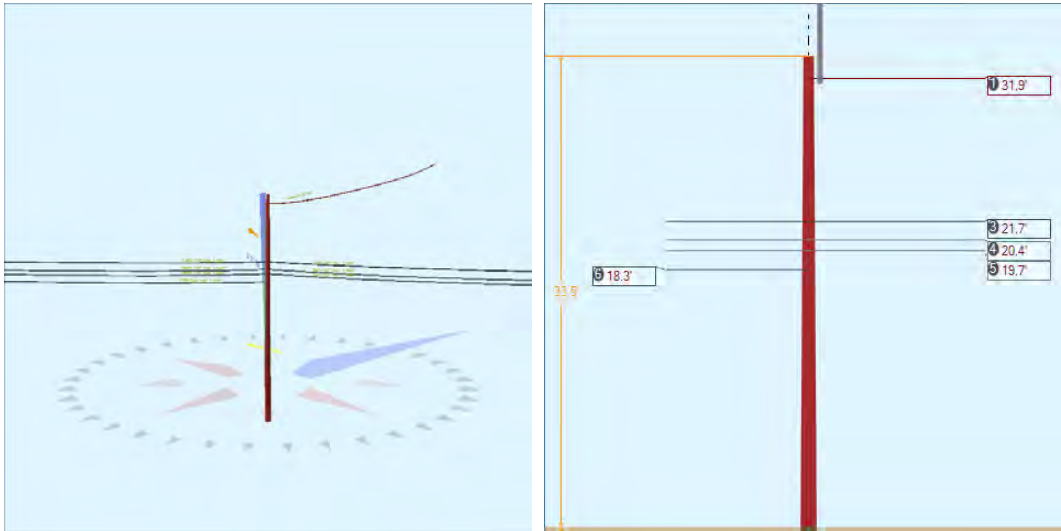
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4 Down	Unknown, COMMUNICATION	20.17	0.00	25.10	0.25	75.00	218.2	38.7	0.121	30.42	0.82

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)
EHS 1/4 Down	2.30e+7	6,650	0.90	5,985	700	2,423	2,203	1,912	1,195	1,493	-282	-5,516
Totals:									1,195	1,493	-282	-5,516

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load² (lbs)	Load at Pole MCU³ (lbs)	Max Required Capacity² (%)
Single Helix Anchor		18.00	25.10	218.2	20,000	1.00	20,000	2,203	1,912	11.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.04	33.06	10.18	9.35	6.69	10.92	1.60e+6	60.00	57.00	36.16	271,056	2728.70	55.56

Pole Num:	37W - 70779-34223	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.50	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.070598 Deg	Longitude:	-84.462269 Deg	Elevation:	876.069725119695		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.8	0.0
Groundline	32.8	0.0
Vertical	6.2	17.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	26,628	281.1
Groundline	26,628	281.1
GL Allowable	82,394	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 281.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	80	6.0	2,559	9.6	3.1	212	50	0	212	3.1
Comms	1,022	77.0	20,044	75.3	24.3	1,657	1,110	11	1,668	24.5
Pole	171	12.9	2,913	10.9	3.5	241	1,854	18	259	3.8
Risers	55	4.1	1,079	4.1	1.3	89	56	1	90	1.3
Insulators	0	0.0	32	0.1	0.0	3	42	0	3	0.0
Pole Load	1,328	100.0	26,628	100.0	32.3	2,201	3,111	30	2,232	32.8
Pole Reserve Capacity			55,766		67.7	4,599			4,568	67.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 281.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	135	10.2	3,654	13.7	4.4	302	110	1	303	4.5
Unknown, COMMUNICATION	1,022	77.0	20,061	75.3	24.4	1,658	1,148	11	1,669	24.6
Pole	171	12.9	2,913	10.9	3.5	241	1,854	18	259	3.8
Totals:	1,328	100.0	26,628	100.0	32.3	2,201	3,111	30	2,232	32.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	TRIPLEX 1/0	KU, UTILITY	31.91	6.26	1.0300	0.68	0.399	65.7	347.3	65.8	150	1,931	24	609	2,564
Totals:											1,931	24	609	2,564	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.74	6.88	1.3300	2.10	0.337	147.3	50.0	147.4	925	-12,631	52	1,265	-11,314
CATV	CATV 1.0	Unknown, COMMUNICATION	21.74	6.88	1.3300	1.91	0.337	136.5	230.4	136.6	925	12,740	48	1,163	13,951

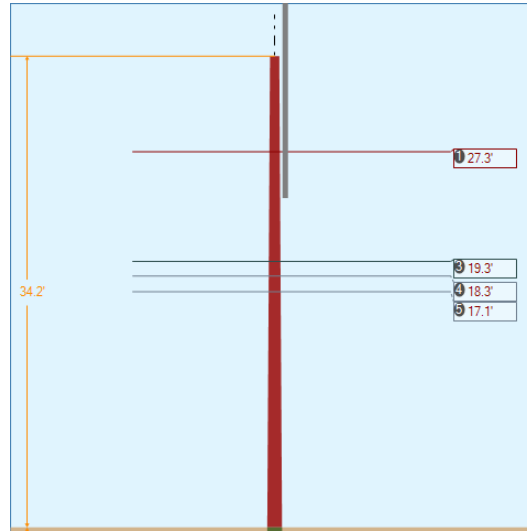
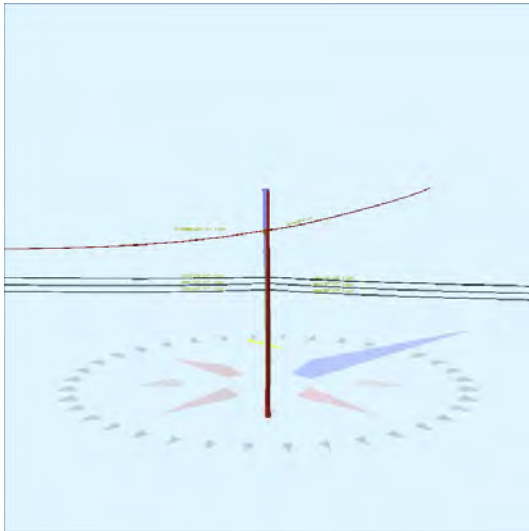
Telco	TELE 1.5	Unknown, COMMUNICATION	20.44	6.96	1.5000	2.46	0.900	147.3	50.0	147.4	2,000	-25,674	91	1,300	-24,283
Telco	TELE 1.5	Unknown, COMMUNICATION	20.44	6.96	1.5000	2.23	0.900	136.5	230.4	136.6	2,000	25,896	85	1,195	27,176
Telco	TELE 1.5	Unknown, COMMUNICATION	19.66	7.00	1.5000	2.46	0.900	147.3	50.0	147.4	2,000	-24,696	92	1,250	-23,354
Telco	TELE 1.5	Unknown, COMMUNICATION	19.66	7.00	1.5000	2.23	0.900	136.5	230.4	136.6	2,000	24,909	85	1,150	26,143
CATV	CATV 1.0	Unknown, COMMUNICATION	18.32	7.08	1.3300	1.91	0.337	136.5	230.4	136.6	925	10,737	40	980	11,757
Totals:												11,280	493	8,303	20,076

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 180.0°	Riser KU, UTILITY	29.64	5.85	180.0	180.0	29.64	355.70	4.00	4.00	355.70	-3	1,084	1,081	
Totals:												-3	1,084	1,081

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV KU, UTILITY	31.91	0.00	257.3	347.3	2.00	3.00	3.19	2	14	16	
Bolt	Three Bolt Unknown, COMMUNICATION	21.74	0.00	320.0	50.0	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt Unknown, COMMUNICATION	20.44	0.00	320.0	50.0	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt Unknown, COMMUNICATION	19.66	0.00	320.0	50.0	5.00	3.00	0.00	4	0	4	
Bolt	Single Bolt Unknown, COMMUNICATION	18.32	0.00	230.4	320.4	5.00	3.00	0.00	4	0	4	
Totals:										18	14	32

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.28	32.77	10.71	12.22	7.32	11.40	1.60e+6	60.00	57.00	33.50	50,407	501.83	16.13

Pole Num:	38W - 70890-34327	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.59	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.070868 Deg	Longitude:	-84.461894 Deg	Elevation:	877.89622362812		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.5	0.0
Groundline	30.5	0.0
Vertical	7.0	16.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,425	307.0
Groundline	20,425	307.0
GL Allowable	68,010	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 307.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	320	32.0	8,784	43.0	12.9	879	160	2	881	13.0
Comms	501	50.0	8,549	41.9	12.6	856	1,005	11	867	12.8
Pole	173	17.3	3,001	14.7	4.4	300	1,636	18	319	4.7
Risers	8	0.7	93	0.5	0.1	9	44	0	10	0.1
Insulators	1	0.0	-2	0.0	0.0	0	32	0	0	0.0
Pole Load	1,002	100.0	20,425	100.0	30.0	2,045	2,877	32	2,077	30.5
Pole Reserve Capacity			47,585		70.0	4,755			4,723	69.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 307.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	328	32.7	8,891	43.5	13.1	890	207	2	892	13.1
Unknown, COMMUNICATION	501	50.0	8,533	41.8	12.6	854	1,033	12	866	12.7
Pole	173	17.3	3,001	14.7	4.4	300	1,636	18	319	4.7
Totals:	1,002	100.0	20,425	100.0	30.0	2,045	2,877	32	2,077	30.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	TRIPLEX 1/0	KU, UTILITY	27.30	6.25	1.0300	1.68	0.399	147.3	230.0	147.8	250	1,538	38	1,731	3,307
Secondary	TRIPLEX 1/0	KU, UTILITY	27.30	6.25	1.0300	0.65	0.399	63.4	347.6	63.4	250	5,180	16	293	5,489
Totals:											6,717	54	2,024	8,795	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.32	6.72	1.3300	1.92	0.337	137.3	49.6	137.3	925	-3,905	-59	1,370	-2,595

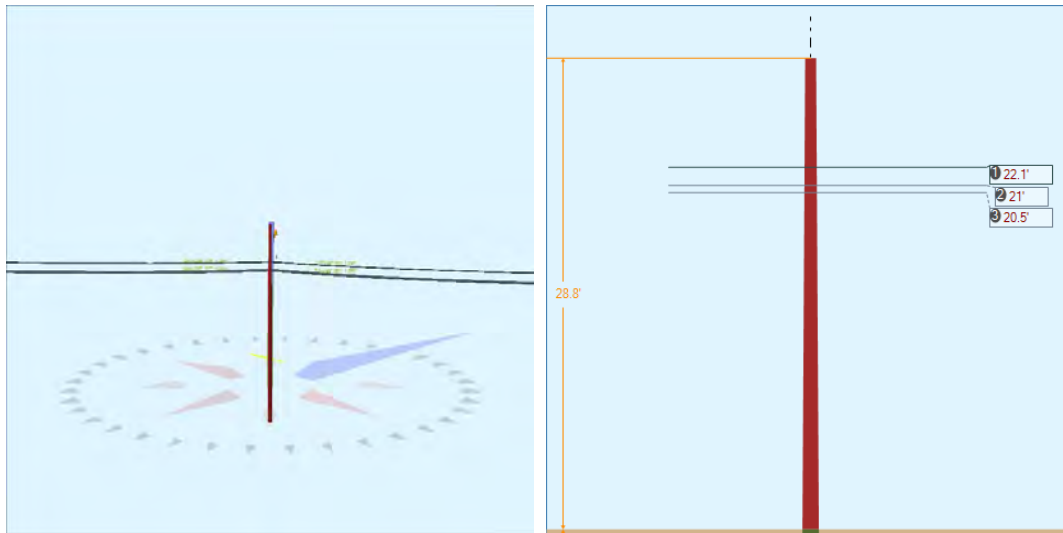
CATV	CATV 1.0	Unknown, COMMUNICATION	19.32	6.72	1.3300	2.10	0.337	147.3	230.0	147.4	925	4,027	-63	1,466	5,429
Telco	TELE 1.5	Unknown, COMMUNICATION	18.26	6.78	1.5000	2.25	0.900	137.3	49.6	137.4	2,000	-7,982	-104	1,415	-6,671
Telco	TELE 1.5	Unknown, COMMUNICATION	18.26	6.78	1.5000	2.47	0.900	147.3	230.0	147.4	2,000	8,231	-111	1,514	9,634
Telco	TELE 1.5	Unknown, COMMUNICATION	17.12	6.84	1.5000	2.25	0.900	137.3	49.6	137.4	2,000	-7,484	-105	1,327	-6,262
Telco	TELE 1.5	Unknown, COMMUNICATION	17.12	6.84	1.5000	2.47	0.900	147.3	230.0	147.4	2,000	7,717	-112	1,420	9,024
Totals:												603	-554	8,511	8,560

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 140.0°	KU, UTILITY	23.00	5.45	140.0	140.0	23.00	276.01	4.00	4.00	276.01	-21	115	94	
Totals:												-21	115	94

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	KU, UTILITY	27.30	0.00	257.6	257.6	2.00	3.00	3.19	1	13	14	
Bolt	Unknown, COMMUNICATION	19.32	0.00	139.8	229.8	5.00	3.00	0.00	-5	0	-5	
Bolt	Unknown, COMMUNICATION	18.26	0.00	139.8	229.8	5.00	3.00	0.00	-5	0	-5	
Bolt	Unknown, COMMUNICATION	17.12	0.00	139.8	229.8	5.00	3.00	0.00	-5	0	-5	
Totals:										-14	13	-2

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.84	32.76	10.05	11.62	6.69	10.70	1.60e+6	60.00	57.00	34.25	41,109	410.94	14.29

Pole Num:	39W - 26511-1818	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.24	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.41	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071104 Deg	Longitude:	-84.461510 Deg	Elevation:	906.035531195157		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.4	0.0
Groundline	26.4	0.0
Vertical	8.1	17.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	14,436	319.4
Groundline	14,436	319.4
GL Allowable	55,627	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 319.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	576	80.5	12,327	85.4	22.2	1,508	1,125	14	1,522	22.4
Pole	140	19.5	2,104	14.6	3.8	257	1,261	16	273	4.0
Insulators	0	0.0	5	0.0	0.0	1	28	0	1	0.0
Pole Load	716	100.0	14,436	100.0	26.0	1,766	2,415	31	1,797	26.4
Pole Reserve Capacity			41,191		74.0	5,034			5,003	73.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 319.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	576	80.5	12,332	85.4	22.2	1,508	1,154	15	1,523	22.4
Pole	140	19.5	2,104	14.6	3.8	257	1,261	16	273	4.0
Totals:	716	100.0	14,436	100.0	26.0	1,766	2,415	31	1,797	26.4

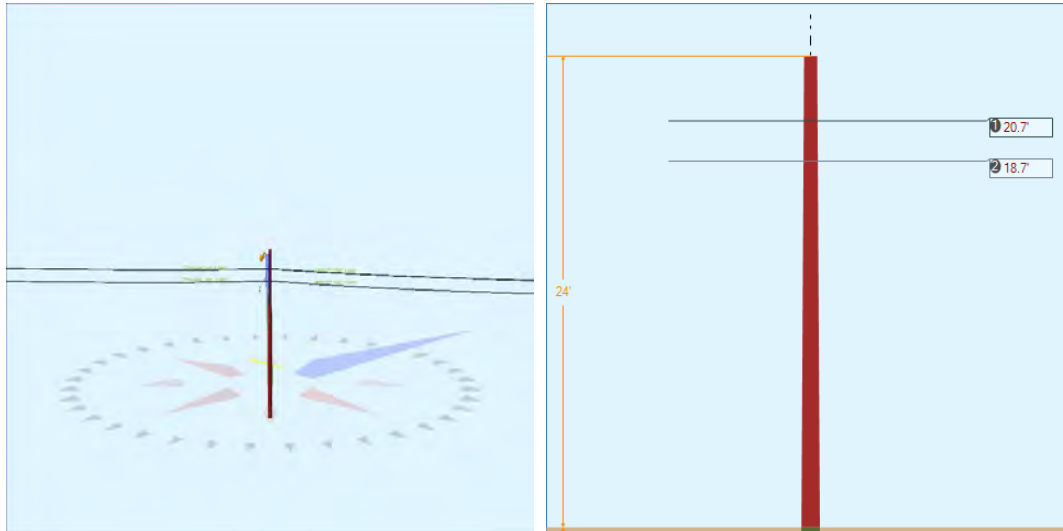
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.09	6.23	1.3300	2.74	0.337	181.4	49.2	181.4	925	58	74	2,139	2,271
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	22.09	6.23	1.3300	1.92	0.337	137.3	229.6	137.3	925	85	56	1,619	1,760
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.99	6.29	1.5000	3.25	0.900	181.4	49.2	181.5	2,000	119	-130	2,221	2,210
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.99	6.29	1.5000	2.25	0.900	137.3	229.6	137.4	2,000	174	-99	1,681	1,756
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.55	6.32	1.5000	3.25	0.900	181.4	49.2	181.5	2,000	117	131	2,174	2,422
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.55	6.32	1.5000	2.25	0.900	137.3	229.6	137.4	2,000	170	99	1,646	1,915
	COMMUNICATION														
Totals:											723	131	11,481	12,335	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.09	0.00	319.4	229.4	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.99	0.00	139.4	229.4	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.55	0.00	319.4	229.4	5.00	3.00	0.00	5	0	5
Totals:										5	0	5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.14	32.96	9.35	10.55	6.69	10.00	1.60e+6	60.00	57.00	28.77	29,731	298.12	12.35

Pole Num:	40W - 26511-1912	Pole Length / Class:	30 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.97	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.51	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.073462 Deg	Longitude:	-84.458149 Deg	Elevation:	884.110563544908		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	18.9	0.0
Groundline	18.9	0.0
Vertical	5.2	14.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,547	140.6
Groundline	8,547	140.6
GL Allowable	46,106	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 140.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	345	75.4	7,090	83.0	15.4	1,047	646	9	1,056	15.5
Pole	113	24.6	1,447	16.9	3.1	214	975	14	228	3.3
Insulators	0	0.0	10	0.1	0.0	1	19	0	2	0.0
Pole Load	457	100.0	8,547	100.0	18.5	1,261	1,639	24	1,285	18.9
Pole Reserve Capacity			37,559		81.5	5,539			5,515	81.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 140.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	345	75.4	7,100	83.1	15.4	1,048	665	10	1,057	15.6
Pole	113	24.6	1,447	16.9	3.1	214	975	14	228	3.3
Totals:	457	100.0	8,547	100.0	18.5	1,261	1,639	24	1,285	18.9

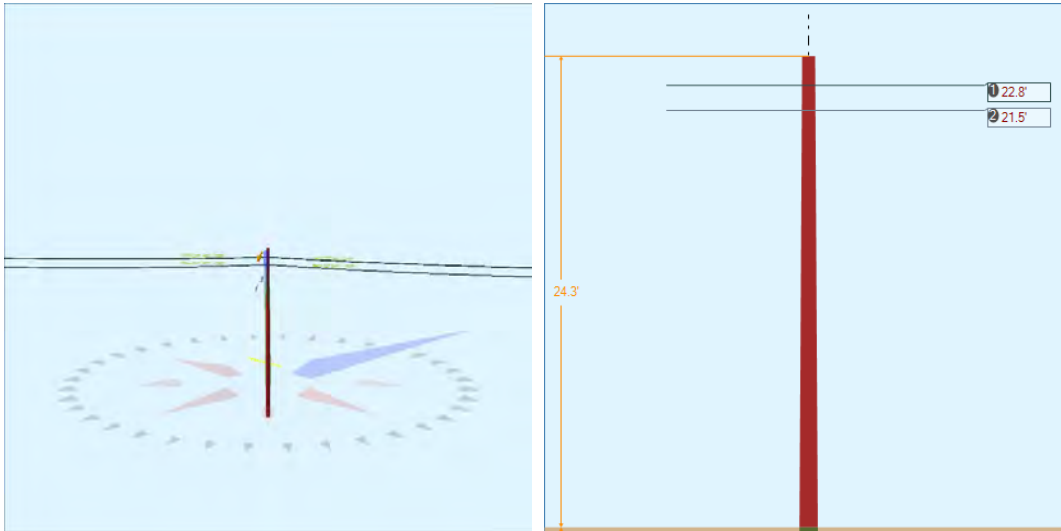
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 20.72	6.03	1.3300	2.40	0.337	163.6	50.7	163.6	925	25	65	1,809	1,899
CATV	CATV 1.0	Unknown, 20.72	6.03	1.3300	1.90	0.337	135.7	230.5	135.7	925	42	54	1,501	1,596
Telco	TELE 1.5	Unknown, 18.68	6.14	1.5000	2.83	0.900	163.6	50.7	163.6	2,000	49	115	1,782	1,946
Telco	TELE 1.5	Unknown, 18.68	6.14	1.5000	2.22	0.900	135.7	230.5	135.7	2,000	81	95	1,478	1,655
										Totals:	197	328	6,570	7,095

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, 20.72	0.00	140.6	50.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, 18.68	0.00	140.6	50.6	5.00	3.00	0.00	5	0	5	
									Totals:	10	0	10

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	14.87	32.68	8.85	8.14	6.69	9.40	1.60e+6	60.00	57.00	24.03	31,644	315.29	19.23

Pole Num:	41W - 26511-1914	Pole Length / Class:	30 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.71	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.60	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.073678 Deg	Longitude:	-84.457777 Deg	Elevation:	884.115634669898		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.0	0.0
Groundline	23.0	0.0
Vertical	6.4	16.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,564	141.2
Groundline	10,564	141.2
GL Allowable	46,546	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 141.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	397	77.7	9,075	85.9	19.5	1,327	658	9	1,337	19.7
Pole	114	22.3	1,480	14.0	3.2	217	989	14	231	3.4
Insulators	0	0.0	9	0.1	0.0	1	19	0	2	0.0
Pole Load	511	100.0	10,564	100.0	22.7	1,545	1,666	24	1,569	23.1
Pole Reserve Capacity			35,982		77.3	5,255			5,231	76.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 141.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	397	77.7	9,084	86.0	19.5	1,329	677	10	1,339	19.7
Pole	114	22.3	1,480	14.0	3.2	217	989	14	231	3.4
Totals:	511	100.0	10,564	100.0	22.7	1,545	1,666	24	1,569	23.1

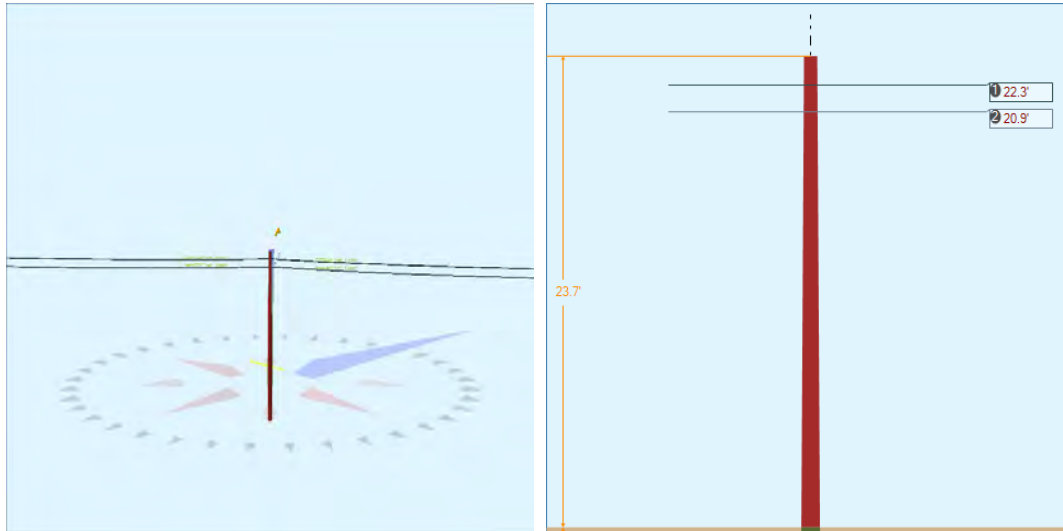
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.78	5.93	1.3300	2.00	0.337	141.4	51.8	141.4	925	212	55	1,719	1,986
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	22.78	5.93	1.3300	2.40	0.337	163.6	230.7	163.6	925	192	64	1,989	2,245
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	21.48	6.00	1.5000	2.34	0.900	141.4	51.8	141.4	2,000	433	97	1,772	2,302
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	21.48	6.00	1.5000	2.83	0.900	163.6	230.7	163.6	2,000	392	112	2,050	2,554
	COMMUNICATION														
Totals:											1,229	328	7,529	9,086	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown,	22.78	0.00	141.3	51.3	5.00	3.00	0.00	5	0	5
	COMMUNICATION											
Bolt	Three Bolt	Unknown,	21.48	0.00	141.3	51.3	5.00	3.00	0.00	5	0	5
	COMMUNICATION											
Totals:										9	0	9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.28	32.92	8.82	8.53	6.69	9.43	1.60e+6	60.00	57.00	24.29	26,088	260.38	15.63

Pole Num:	42W - 27511-1916	Pole Length / Class:	30 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.27	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.41	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.073945 Deg	Longitude:	-84.457408 Deg	Elevation:	881.954958260046		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.3	0.0
Groundline	22.3	0.0
Vertical	5.9	15.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,011	321.2
Groundline	10,011	321.2
GL Allowable	45,623	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 321.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	385	77.6	8,572	85.6	18.8	1,282	616	9	1,291	19.0
Pole	111	22.4	1,430	14.3	3.1	214	959	14	228	3.3
Insulators	0	0.0	9	0.1	0.0	1	19	0	2	0.0
Pole Load	496	100.0	10,011	100.0	21.9	1,497	1,594	23	1,520	22.4
Pole Reserve Capacity			35,612		78.1	5,303			5,280	77.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 321.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	385	77.6	8,581	85.7	18.8	1,283	635	9	1,292	19.0
Pole	111	22.4	1,430	14.3	3.1	214	959	14	228	3.3
Totals:	496	100.0	10,011	100.0	21.9	1,497	1,594	23	1,520	22.4

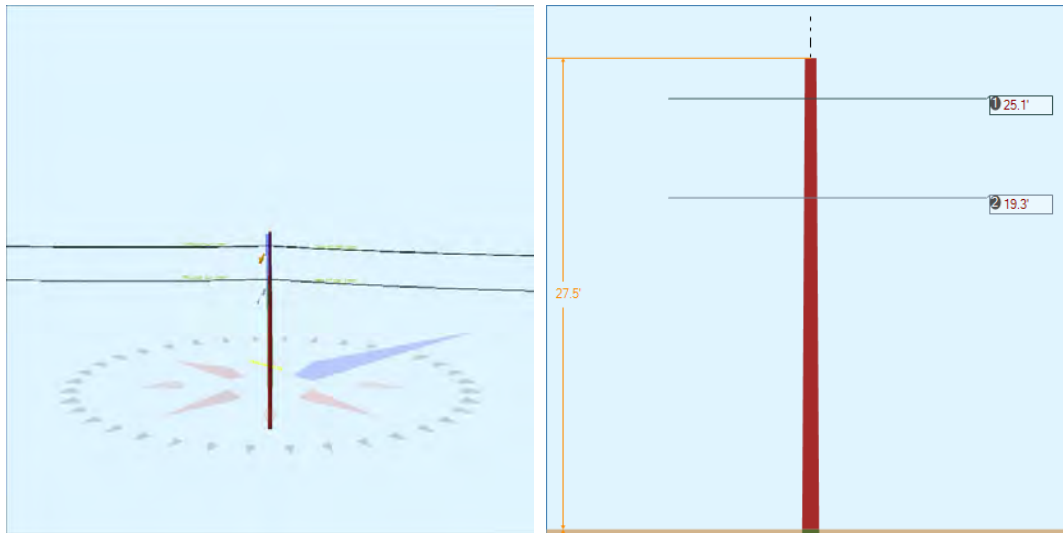
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.27	5.93	1.3300	2.04	0.337	144.0	50.5	144.0	925	237	56	1,711	2,004
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	22.27	5.93	1.3300	2.00	0.337	141.4	231.8	141.4	925	230	55	1,680	1,965
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.93	6.00	1.5000	2.40	0.900	144.0	50.5	144.0	2,000	482	99	1,758	2,339
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	20.93	6.00	1.5000	2.34	0.900	141.4	231.8	141.4	2,000	468	97	1,726	2,291
	COMMUNICATION														
Totals:											1,417	307	6,875	8,599	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.27	0.00	321.2	231.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.93	0.00	321.2	231.2	5.00	3.00	0.00	5	0	5
Totals:										9	0	9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	15.81	32.86	8.77	8.25	6.69	9.36	1.60e+6	60.00	57.00	23.73	27,110	270.11	16.95

Pole Num:	43W - 26511-1926	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.53	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	30.95	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.074202 Deg	Longitude:	-84.457039 Deg	Elevation:	872.066556936588		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	141.2
Groundline	0.0	141.2
Vertical	16.0	141.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	141.0	141.2
Groundline	141.0	141.2
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 141.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	367	73.5	8,357	81.4	15.7	1,071	611	8	1,079	15.9
Pole	133	26.5	1,904	18.5	3.6	244	1,182	16	259	3.8
Insulators	0	0.0	10	0.1	0.0	1	19	0	1	0.0
Pole Load	500	100.0	10,270	100.0	19.3	1,316	1,812	24	1,340	19.7
Pole Reserve Capacity			42,911		80.7	5,484			5,460	80.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 141.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	367	73.5	8,366	81.5	15.7	1,072	630	8	1,080	15.9
Pole	133	26.5	1,904	18.5	3.6	244	1,182	16	259	3.8
Totals:	500	100.0	10,270	100.0	19.3	1,316	1,812	24	1,340	19.7

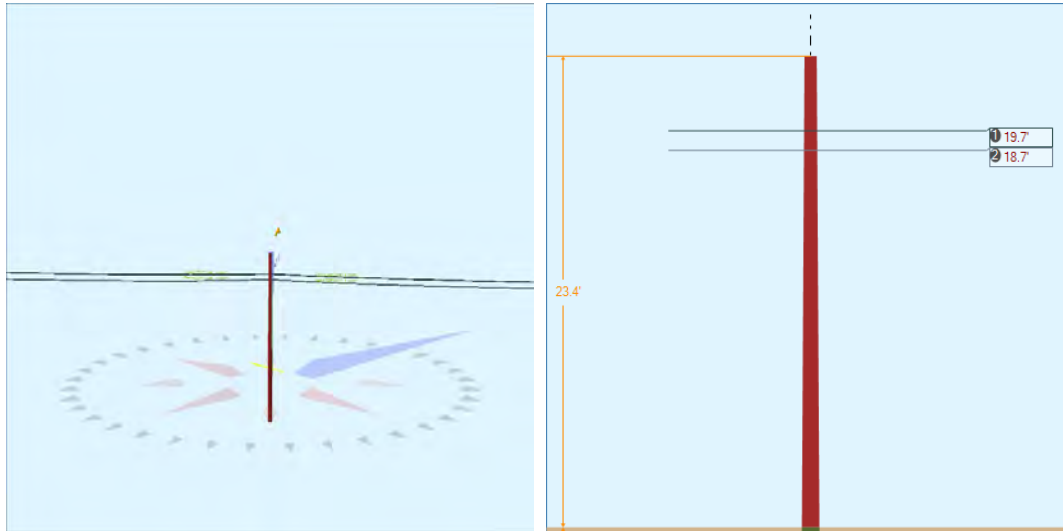
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.10	5.98	1.3300	1.95	0.337	139.0	51.5	139.0	925	187	54	1,862	2,103
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	25.10	5.98	1.3300	2.04	0.337	144.0	230.5	144.0	925	218	56	1,929	2,204
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.32	6.31	1.5000	2.29	0.900	139.0	51.5	139.0	2,000	311	100	1,566	1,977
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.32	6.31	1.5000	2.40	0.900	144.0	230.5	144.0	2,000	363	104	1,623	2,090
	COMMUNICATION														
Totals:											1,080	315	6,979	8,374	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	25.10	0.00	141.0	51.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.32	0.00	141.0	51.0	5.00	3.00	0.00	5	0	5
Totals:										10	0	10

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.02	32.81	9.25	8.95	6.69	9.86	1.60e+6	60.00	57.00	27.47	32,559	323.53	17.86

Pole Num:	44W - 26511-1936	Pole Length / Class:	30 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.63	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	27.28	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.074453 Deg	Longitude:		-84.456641 Deg	Elevation:	878.103871960154	Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	23.1	0.0
Groundline	23.1	0.0
Vertical	5.8	14.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,282	320.9
Groundline	8,282	320.9
GL Allowable	36,418	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	353	77.9	7,003	84.6	19.2	1,311	554	9	1,320	19.4
Pole	100	22.1	1,270	15.3	3.5	238	797	13	251	3.7
Insulators	0	0.0	9	0.1	0.0	2	19	0	2	0.0
Pole Load	454	100.0	8,282	100.0	22.7	1,550	1,370	23	1,573	23.1
Pole Reserve Capacity			28,136		77.3	5,250			5,227	76.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	353	77.9	7,012	84.7	19.3	1,312	573	10	1,322	19.4
Pole	100	22.1	1,270	15.3	3.5	238	797	13	251	3.7
Totals:	454	100.0	8,282	100.0	22.7	1,550	1,370	23	1,573	23.1

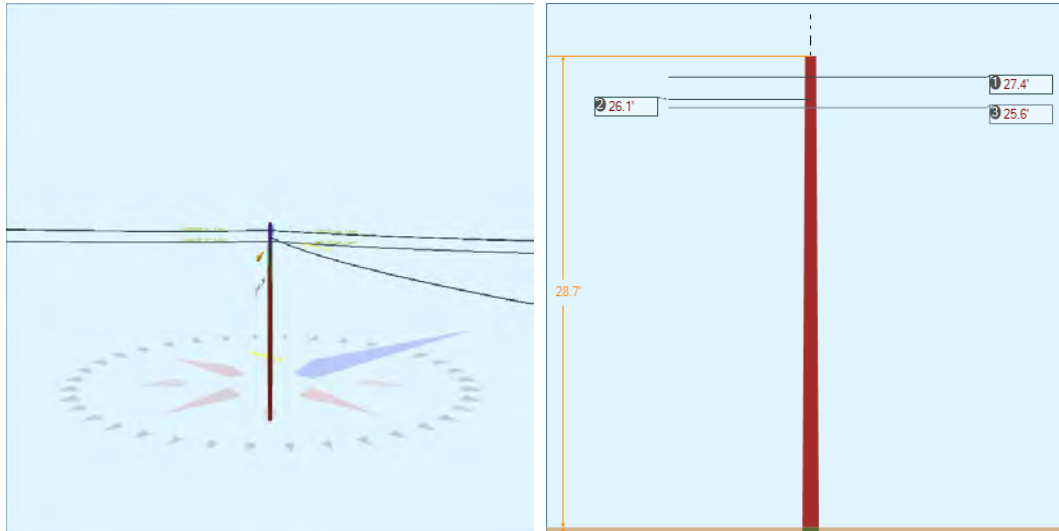
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.67	5.73	1.3300	1.60	0.337	117.7	50.2	117.7	925	236	44	1,235	1,516
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	19.67	5.73	1.3300	1.95	0.337	139.0	231.5	139.0	925	176	52	1,458	1,687
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.69	5.79	1.5000	1.86	0.900	117.7	50.2	117.7	2,000	486	78	1,283	1,847
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	18.69	5.79	1.5000	2.29	0.900	139.0	231.5	139.0	2,000	362	92	1,515	1,969
	COMMUNICATION														
Totals:											1,261	266	5,492	7,020	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.67	0.00	320.8	230.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.69	0.00	320.8	230.8	5.00	3.00	0.00	5	0	5
Totals:										9	0	9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	14.62	32.85	8.14	7.38	6.05	8.69	1.60e+6	60.00	57.00	23.37	23,513	236.18	17.24

Pole Num:	45W - 26511-1990	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.27	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.40	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.074660 Deg	Longitude:		-84.456366 Deg	Elevation:	873.194172374744	Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.9	0.0
Groundline	28.9	0.0
Vertical	7.8	18.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,883	133.1
Groundline	15,883	133.1
GL Allowable	55,560	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 133.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Comms	514	78.8	13,803	86.9	24.8	1,693	644	8	1,701	25.0
Pole	138	21.2	2,067	13.0	3.7	253	1,259	16	269	4.0
Insulators	0	0.0	13	0.1	0.0	2	28	0	2	0.0
Pole Load	652	100.0	15,883	100.0	28.6	1,948	1,932	25	1,972	29.0
Pole Reserve Capacity			39,677		71.4	4,852			4,828	71.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 133.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Unknown, COMMUNICATION	514	78.8	13,816	87.0	24.9	1,694	673	9	1,703	25.0
Pole	138	21.2	2,067	13.0	3.7	253	1,259	16	269	4.0
Totals:	652	100.0	15,883	100.0	28.6	1,948	1,932	25	1,972	29.0

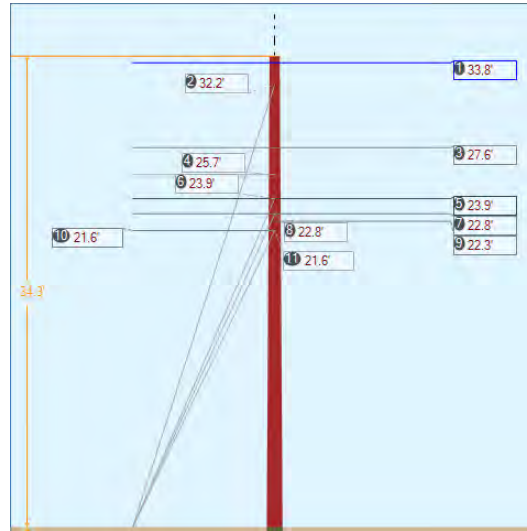
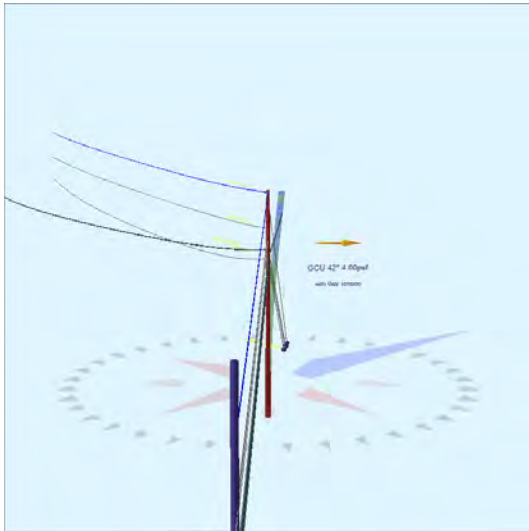
Detailed Load Components:

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	27.44	5.92	1.3300	2.11	0.337	148.2	51.8	148.2	925	3,851	57	2,145	6,053
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	27.44	5.92	1.3300	1.60	0.337	117.7	230.2	117.7	925	-3,149	45	1,709	-1,395
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	26.08	6.00	1.3300	1.16	0.337	89.4	93.8	89.6	150	3,028	27	593	3,648
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	25.58	6.02	1.5000	2.49	0.900	148.2	51.8	148.2	2,000	7,762	101	2,185	10,048
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	25.58	6.02	1.5000	1.86	0.900	117.7	230.2	117.7	2,000	-6,347	80	1,741	-4,526
	COMMUNICATION														
Totals:											5,145	311	8,373	13,829	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Bolt	Three Bolt	Unknown, COMMUNICATION	27.44	0.00	141.0	51.0	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	26.08	0.00	93.8	183.8	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	25.58	0.00	141.0	51.0	5.00	3.00	0.00	5	0	5
Totals:										13	0	13

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.49	33.20	9.29	9.83	6.69	10.00	1.60e+6	60.00	57.00	28.73	24,915	247.65	12.82

Pole Num:	46W - 72523-35793	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.73	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.074664 Deg	Longitude:	-84.456045 Deg	Elevation:	869.982208570597		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.3	0.0
Groundline	32.3	0.0
Vertical	7.5	25.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,800	61.6
Groundline	25,800	61.6
GL Allowable	84,432	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	30.2	322.0	32.2	20.1	42.0	20.8	170.0
? Single Helix Anchor ? EHS 3/8 (Span/Head)	133.9	136.0	25.7	0.0	42.0	0.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)	27.9	322.0	23.9	8.7	42.0	9.1	170.0
? Single Helix Anchor ? EHS 1/4 (Down)	26.9	322.0	22.8	28.9	42.0	33.5	170.0
? Single Helix Anchor ? EHS 1/4 (Down)	25.0	322.0	21.6	8.5	42.0	9.0	170.0
? Single Helix Anchor ? EHS 1/4 (Down)				28.4	42.0	33.0	170.0
? Single Helix Anchor ? EHS 1/4 (Down)				8.4	42.0	8.9	170.0
				28.0	42.0	32.5	170.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 61.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	790	71.2	23,638	91.6	28.0	2,007	136	1	2,008	29.5
Comms	1,165	105.0	25,146	97.5	29.8	2,135	540	5	2,140	31.5
GuyBraces	-1,028	-92.7	-26,075	-101.1	-30.9	-2,214	9,498	92	-2,122	-31.2
Pole	177	16.0	2,930	11.4	3.5	249	1,916	18	267	3.9
Insulators	5	0.5	161	0.6	0.2	14	76	1	14	0.2
Pole Load	1,109	100.0	25,800	100.0	30.6	2,191	12,167	117	2,308	33.9
Pole Reserve Capacity			58,632		69.4	4,609			4,492	66.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 61.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	179	16.1	6,609	25.6	7.8	561	6,283	61	622	9.1
Unknown, COMMUNICATION	753	67.9	16,261	63.0	19.3	1,381	3,967	38	1,419	20.9
Pole	177	16.0	2,930	11.4	3.5	249	1,916	18	267	3.9
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,109	100.0	25,800	100.0	30.6	2,191	12,167	117	2,308	33.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.79	16.44	0.3250	0.30	0.107	133.9	136.0	133.9	1,684	19,844	3	1,046	20,893
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.79	16.44	0.3250	0.22	0.107	118.8	288.7	118.9	150	-4,482	-7	651	-3,838
Neutral	#4 COPPER 7 STRAND	KU, UTILITY	27.61	6.57	0.2316	0.41	0.129	133.9	136.0	133.9	1,064	10,244	5	758	11,007
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.61	6.57	0.3250	0.22	0.107	118.8	288.7	118.9	150	-3,662	-12	532	-3,142
Totals:											21,944	-11	2,986	24,919	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.90	6.79	1.3300	1.87	0.337	133.9	136.0	133.9	925	7,709	36	1,641	9,386
Telco	TELE 1.5	Unknown, COMMUNICATION	22.79	6.86	1.5000	0.69	0.900	49.2	318.3	49.2	450	-3,059	-10	633	-2,436
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.26	6.89	0.6570	1.59	0.190	118.8	288.7	119.2	90	-1,772	-15	601	-1,185
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.58	6.93	0.6570	1.85	0.190	133.9	136.0	133.9	750	5,645	17	937	6,599
CATV	CATV 1.0	Unknown, COMMUNICATION	23.90	6.79	1.3300	1.16	0.337	89.4	273.8	89.6	150	-3,942	-24	478	-3,488

Telco	TELE 1.5	Unknown,	22.79	6.86	1.5000	2.18	0.900	133.9	136.0	133.9	2,000	15,896	26	1,711	17,632
COMMUNICATION															
Totals:												20,478	30	6,001	26,509

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.79	0.00	136.0	136.0	3.00	3.80	12.75	2	75	77
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.79	0.00	288.7	288.7	3.00	3.80	12.75	-5	75	70
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.61	0.00	136.0	136.0	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.61	0.00	288.7	288.7	2.00	3.00	3.19	-1	12	11
Bolt	Single Bolt	Unknown, COMMUNICATION	23.90	0.00	114.9	204.9	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	22.79	0.00	317.2	407.2	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	22.26	0.00	302.4	212.4	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	21.58	0.00	122.4	212.4	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	23.90	0.00	294.9	204.9	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	22.79	0.00	137.2	407.2	5.00	3.00	0.00	1	0	1
Totals:										-4	174	170

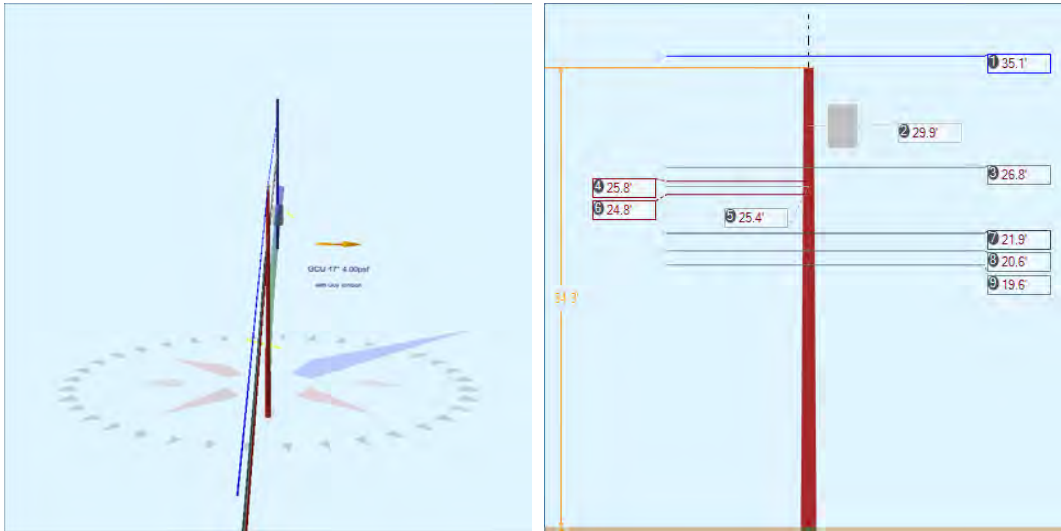
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	32.19	0.00	30.19	0.375	75.00	322.0	46.7	0.273	42.42	1.07
EHS 3/8	Span/Head	KU, UTILITY	25.66	25.66	133.90	0.375	75.00	136.0	0.0	0.273	132.05	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	23.90	0.00	27.86	0.25	75.00	322.0	40.5	0.121	34.94	0.86
EHS 1/4	Down	KU, UTILITY	22.79	0.00	26.86	0.25	75.00	322.0	40.2	0.121	33.45	0.81
EHS 1/4	Down	Unknown, COMMUNICATION	21.58	0.00	24.97	0.25	75.00	322.0	40.7	0.121	31.22	0.74

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,568	4,153	4,013	2,920	2,753	-457	-14,253
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	848
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,003	1,821	1,730	1,124	1,316	-219	-5,004
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,974	1,795	1,701	1,098	1,299	-216	-4,718
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,947	1,770	1,673	1,091	1,268	-211	-4,363
Totals:										6,233	6,637	-1,102	-27,489

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	30.19	322.0	20,000	1.00	20,000	4,153	4,013	20.8
Single Helix Anchor		18.00	133.90	136.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	27.86	322.0	20,000	1.00	20,000	1,821	1,730	9.1
Single Helix Anchor		18.00	26.86	322.0	20,000	1.00	20,000	1,795	1,701	9.0
Single Helix Anchor		18.00	24.97	322.0	20,000	1.00	20,000	1,770	1,673	8.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.80	34.10	10.42	16.67	7.32	11.50	1.60e+6	60.00	57.00	34.27	162,104	1622.27	13.33

Pole Num:	47W - 76223-35694	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.74	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.074396 Deg	Longitude:	-84.455720 Deg	Elevation:	881.909435733435		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.7	0.0
Groundline	30.7	0.0
Vertical	1.4	21.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,468	72.1
Groundline	25,468	72.1
GL Allowable	84,398	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	133.9	316.0		23.8	47.0	24.6	140.0
? EHS 3/8 (Span/Head)			25.4	34.4	47.0	39.1	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 72.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,505	238.9	65,000	255.2	77.0	5,218	234	2	5,220	76.8
Comms	393	37.5	7,830	30.7	9.3	629	740	7	636	9.3
GuyBraces	-2,063	-196.7	-52,620	-206.6	-62.4	-4,224	31	0	-4,224	-62.1
PowerEquipments	38	3.6	2,103	8.3	2.5	169	694	7	176	2.6
Pole	170	16.2	2,979	11.7	3.5	239	1,915	18	258	3.8
Insulators	6	0.6	176	0.7	0.2	14	68	1	15	0.2
Pole Load	1,049	100.0	25,468	100.0	30.2	2,044	3,683	36	2,080	30.6
Pole Reserve Capacity			58,930		69.8	4,756			4,720	69.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 72.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	486	46.3	14,674	57.6	17.4	1,178	999	10	1,188	17.5
Unknown, COMMUNICATION	393	37.5	7,815	30.7	9.3	627	769	7	635	9.3
Pole	170	16.2	2,979	11.7	3.5	239	1,915	18	258	3.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,049	100.0	25,468	100.0	30.2	2,044	3,683	36	2,080	30.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	35.13	0.00	0.3250	0.37	0.107	150.1	135.7	150.1	1,684	34,192	0	1,137	35,329
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	35.13	0.00	0.3250	0.30	0.107	133.9	316.0	133.9	1,684	-33,831	0	1,017	-32,814
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.84	6.61	0.3250	0.37	0.107	150.1	135.7	150.1	1,684	26,107	10	868	26,985
Neutral	#4 COPPER 7 STRAND	KU, UTILITY	26.84	6.61	0.2316	0.41	0.129	133.9	316.0	133.9	1,064	-16,321	-9	689	-15,641
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.80	6.68	0.3250	0.37	0.107	150.1	135.7	150.1	1,684	25,099	10	834	25,943

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.82	6.74	0.3250	0.37	0.107	150.1	135.7	150.1	1,684	24,143	10	803	24,956
											Totals:	59,389	22	5,347	64,758

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.92	6.91	1.3300	2.15	0.337	150.1	135.7	150.1	925	11,714	-61	1,573	13,226
CATV	CATV 1.0	Unknown, COMMUNICATION	21.92	6.91	1.3300	1.87	0.337	133.9	316.0	133.9	925	-11,591	-54	1,407	-10,238
Telco	TELE 1.5	Unknown, COMMUNICATION	20.61	6.99	1.5000	2.53	0.900	150.1	135.7	150.1	2,000	23,809	-107	1,616	25,317
Telco	TELE 1.5	Unknown, COMMUNICATION	20.61	6.99	1.5000	2.18	0.900	133.9	316.0	133.9	2,000	-23,557	-96	1,445	-22,208
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.57	7.05	0.6570	2.13	0.190	150.1	135.7	150.1	750	8,478	-35	887	9,330
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.57	7.05	0.6570	1.85	0.190	133.9	316.0	133.9	750	-8,388	-32	794	-7,626
											Totals:	465	-386	7,722	7,801

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.93	20.92	35.0	35.0	365.00	39.00	--	22.00	--	965	1,131	2,096
											Totals:	965	1,131	2,096

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.26	0.00	0.0	0.0	13.00	9.00	10.50	0	144	144
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.84	0.00	135.7	135.7	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.84	0.00	316.0	316.0	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	135.7	135.7	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.82	0.00	135.7	135.7	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	21.92	0.00	225.7	135.7	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.61	0.00	225.7	135.7	5.00	3.00	0.00	-5	0	-5

Bolt	Three Bolt	Unknown, COMMUNICATION	19.57	0.00	225.7	135.7	5.00	3.00	0.00	-5	0	-5
Totals:										-13	188	175

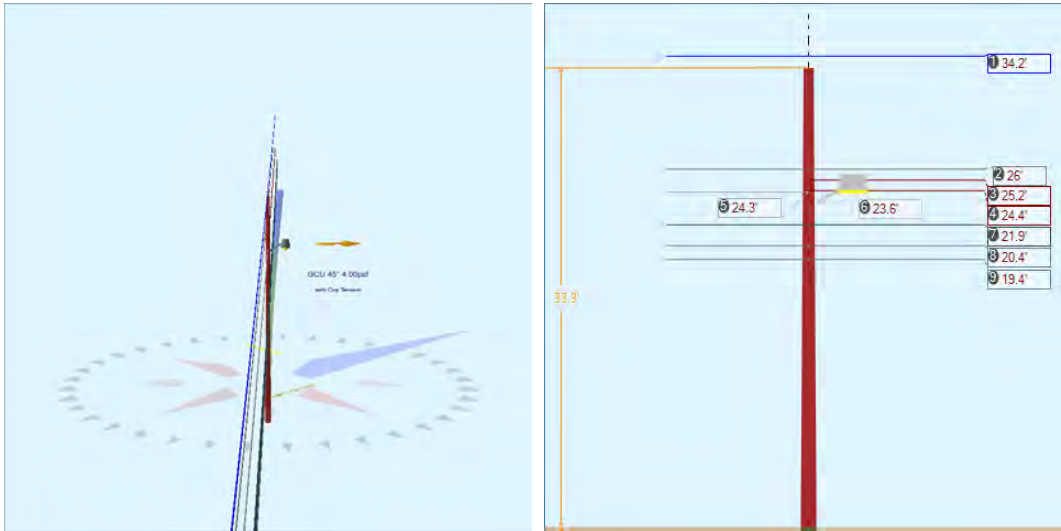
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.41	25.41	133.90	0.375	75.00	316.0	0.0	0.273	132.05	3.96

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,421	4,929	4,765	0	4,765	-2,093	-52,424
Totals:										0	4,765	-2,093	-52,424

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	133.90	316.0	20,000	1.00	20,000	4,929	4,765	24.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.02	33.34	10.64	8.53	7.32	11.50	1.60e+6	60.00	57.00	34.26	265,131	2630.79	71.43

Pole Num:	48W - 72720-35594	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.074080 Deg	Longitude:	-84.455365 Deg	Elevation:	879.512457560466		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.9	0.0
Groundline	33.9	0.0
Vertical	1.0	18.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,349	13.9
Groundline	27,349	13.9
GL Allowable	81,858	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	213.0	135.8		19.3	44.8	19.9	320.0
? EHS 3/8 (Span/Head)			24.3	27.9	44.8	31.6	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 13.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,513	222.2	63,239	231.2	77.3	5,237	278	3	5,240	77.1
Comms	441	39.0	9,647	35.3	11.8	799	946	9	808	11.9
GuyBraces	-2,001	-176.9	-48,828	-178.5	-59.7	-4,044	50	0	-4,043	-59.5
Pole	156	13.8	2,652	9.7	3.2	220	1,837	18	238	3.5
Streetlights	17	1.5	460	1.7	0.6	38	86	1	39	0.6
Insulators	5	0.5	178	0.7	0.2	15	65	1	15	0.2
Pole Load	1,131	100.0	27,349	100.0	33.4	2,265	3,262	32	2,297	33.8
Pole Reserve Capacity			54,509		66.6	4,535			4,503	66.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 13.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	534	47.2	15,035	55.0	18.4	1,245	449	4	1,249	18.4
Unknown, COMMUNICATION	441	39.0	9,661	35.3	11.8	800	975	10	810	11.9
Pole	156	13.8	2,652	9.7	3.2	220	1,837	18	238	3.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,131	100.0	27,349	100.0	33.4	2,265	3,262	32	2,297	33.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.18	0.00	0.3250	0.74	0.107	213.0	135.8	213.0	1,684	-39,587	0	1,487	-38,101
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.18	0.00	0.3250	0.37	0.107	150.1	315.7	150.1	1,684	39,476	0	1,049	40,525
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.98	6.61	0.3250	0.74	0.107	213.0	135.8	213.0	1,684	-30,079	-27	1,130	-28,976
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.98	6.61	0.3250	0.37	0.107	150.1	315.7	150.1	1,684	29,994	-19	797	30,772
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.19	6.65	0.3250	0.37	0.107	150.1	315.7	150.1	1,684	29,081	12	773	29,866

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.42	6.70	0.3250	0.37	0.107	150.1	315.7	150.1	1,684	28,194	12	749	28,955
											Totals:	57,080	-22	5,983	63,041

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.94	6.85	1.3300	3.41	0.337	213.0	135.8	213.0	925	-13,956	81	2,116	-11,758
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.94	6.85	1.3300	2.15	0.337	150.1	315.7	150.1	925	13,917	57	1,493	15,467
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.42	6.94	1.5000	4.07	0.900	213.0	135.8	213.1	2,000	-28,076	144	2,152	-25,780
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.42	6.94	1.5000	2.53	0.900	150.1	315.7	150.1	2,000	27,997	101	1,518	29,616
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.42	7.01	0.6570	3.32	0.190	213.0	135.8	213.0	750	-10,013	47	1,184	-8,782
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.42	7.01	0.6570	2.13	0.190	150.1	315.7	150.1	750	9,985	33	835	10,854
		COMMUNICATION													
											Totals:	-146	464	9,299	9,617

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.59	4.25	90.0	90.0	45.00	24.00	20.00	3.00	36.00	57	401	459
											Totals:	57	401	459

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.30	0.00	0.0	0.0	13.00	9.00	10.50	0	133	133
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.98	0.00	225.8	135.8	2.00	3.00	3.19	-2	10	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.19	0.00	315.7	315.7	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.42	0.00	315.7	315.7	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	21.94	0.00	45.8	135.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.42	0.00	45.8	135.8	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	19.42	0.00	45.8	135.8	5.00	3.00	0.00	5	0	5
Totals:										14	163	178

Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	24.33	24.33	212.97	0.375	75.00	135.8	0.0	0.273	211.12	5.14

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	4,386	3,988	3,868	0	3,868	-2,046	-48,675
Totals:										0	3,868	-2,046	-48,675

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	212.97	135.8	20,000	1.00	20,000	3,988	3,868	19.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.67	33.00	10.62	7.65	7.32	11.38	1.60e+6	60.00	57.00	33.30	334,424	3261.91	100.00

35' 1" - 24W - 69113-32704

29' 11" - Lowest Power

23' 10" - Highest Tel Drop

23' 7" - Proposed Metronet

22' 7" - Highest Tel Cable

4' - Base offset

Base

28' 6" - 25W - 26511-2644

25' 11" - Lowest Power

23' 6" - Proposed Metronet

22' 7" - Highest Tel Drop

22' 5" - Highest Tel Cable

4' - Base offset

Base



28' 2" - 26W - 226511-1656

18' 2" - Proposed Metronet

17' 2" - Highest Tel Cable

4' - Base offset

Base

34' 10" - 27W - 26511-1664

28' 11" - Proposed Metronet

28' 1" - Highest Tel Drop

27' 11" - Highest Tel Cable

4' - Base offset

Base



35' 10" - 28W - 26511-1667

30' 6" - Proposed Metronet

30' 4" - Highest Tel Drop

29' 6" - Highest Tel Cable

4' - Base offset

Base

25' 7" - 29W - 26511-1652

22' 8" - Proposed Metronet

22' 8" - Highest Tel Drop

21' 8" - Highest Tel Cable

4' - Base offset

Base

26' 11" - 30W - 26511-1682

20' 4" - Highest Tel Drop

19' 8" - Proposed Metronet

18' 8" - Highest Tel Cable

4' - Base offset

Base

25' 1" - 31W - 26511-1704

21' 11" - Proposed Metronet

21' 11" - Highest Tel Drop

20' 11" - Highest Tel Cable

4' - Base offset

Base

31' 3" - 32W - 27390-1708

24' 8" - Lowest Power

20' 10" - Highest Tel Drop

20' 1" - Proposed Metronet

20' 1" - Highest Tel Cable

4' - Base offset

Base

34' 11" - 33W - 26390-1712

26' 6" - Highest Tel Drop

25' 2" - Proposed Metronet

24' 2" - Highest Tel Cable

4' - Base offset

Base

38' 6" - 34W - 26511-1624

29' 8" - Proposed Metronet

28' 8" - Highest Tel Cable

4' - Base offset

Base

37' 2" - 35W - 26511-1728

26' 8" - Lowest Power

23' 7" - Highest Tel Drop

23' 3" - Proposed Metronet

22' 10" - Highest Tel Cable

4' - Base offset

Base

36' 2" - 36W - 26390-1802

30' 10" - Lowest Power

24' 3" - Proposed Metronet

23' 11" - Proposed Metronet

22' 11" - Highest Tel Cable

4' - Base offset

Base

33' 6" - 37W - 70779-34223

29' 8" - Lowest Power

22' 9" - Proposed Metronet

21' 9" - Highest Tel Cable

21' 1" - Highest Tel Drop

4' - Base offset

Base

34' 3" - 38W - 70890-34327

23' - Lowest Power

20' 9" - Highest Tel Drop

20' 4" - Proposed Metronet

19' 4" - Highest Tel Cable

4' - Base offset

Base

28' 9" - 39W - 26511-1818

23' 4" - Highest Tel Drop

23' 1" - Proposed Metronet

22' 1" - Highest Tel Cable

4' - Base offset

Base

24' - 40W - 26511-1912

21' 9" - Proposed Metronet

20' 9" - Highest Tel Cable

4' - Base offset

Base

24' 3" - 41W - 26511-1914

23' 9" - Proposed Metronet

22' 9" - Highest Tel Cable

20' 7" - Highest Tel Drop

4' - Base offset

Base

23' 9" - 42W - 27511-1916

23' 3" - Proposed Metronet

22' 3" - Highest Tel Cable

4' - Base offset

Base

27' 6" - 43W - 26511-1926

26' 1" - Proposed Metronet

25' 1" - Highest Tel Cable

4' - Base offset

Base

23' 4" - 44W - 26511-1936

20' 8" - Proposed Metronet

19' 8" - Highest Tel Cable

4' - Base offset

Base

28' 9" - 45W - 26511-1990

28' 1" - Proposed Metronet

27' 9" - Proposed Metronet

27' 5" - Highest Tel Cable

25' 10" - Highest Tel Drop

4' - Base offset

Base

34' 3" - 46W - 72523-35793

27' 7" - Lowest Power

24' 11" - Proposed Metronet

22' 10" - Highest Tel Cable

4' - Base offset

Base

WIN6084

34' 3" - 47W - 76223-35694

24' 10" - Lowest Power

21' 6" - Proposed Metronet

20' 7" - Highest Tel Cable

20' 1" - Highest Tel Drop

4' - Base offset

Base

WIN6085

33' 4" - 48W - 72720-35594

23' 7" - Lowest Power

21' 1" - Proposed Metronet

20' 5" - Highest Tel Cable

20' 3" - Highest Tel Drop

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, March 19, 2018 3:00 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX167-02W
Attachments: Map Key.pdf; LX167-02W - Windstream Inventory Report.pdf; LX167-02W Pole App Map.pdf; O-Calcs.pdf; Pole Photos.pdf; LX167-02W - METRONET POLE INVENTORY REPORT.XLSX

Good Afternoon,
Please see attached for proposal titled LX167-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX167-02W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
49W	73819-35495	40/3	WS	4=Comms&Elec		
KU	0	49W	73819-35495	WS		
Windstream	25	49W	73819-35495	WS		
Total Pole Count	25	49W	73819-35495	WS		
Total Needing Make Ready	8	49W	73819-35495	WS		
		49W	73819-35495	WS		
		49W	73819-35495	WS		
		49W	73819-35495	WS		
		49W	73819-35495	WS		
		49W	73819-35495	WS		
		49W	73819-35495	WS		
		49W	73819-35495	WS		
		50W	72925-35389	40/3	WS	1=None
		50W	72925-35389	WS		
		50W	72925-35389	WS		
		50W	72925-35389	WS		
		50W	72925-35389	WS		
		50W	72925-35389	WS		
		50W	72925-35389	WS		
		50W	72925-35389	WS		
		50W	72925-35389	WS		
		51W	73024-35299	40/3	WS	1=None
		51W	73024-35299	WS		
		51W	73024-35299	WS		
		51W	73024-35299	WS		
		51W	73024-35299	WS		
		51W	73024-35299	WS		
		52W	73126-35187	40/3	WS	1=None
		52W	73126-35187	WS		
		52W	73126-35187	WS		
		52W	73126-35187	WS		
		52W	73126-35187	WS		
		52W	73126-35187	WS		
		52W	73126-35187	WS		

52W	73126-35187		WS	
52W	73126-35187		WS	
53W	73232-35080	45/3	WS	1=None
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
53W	73232-35080		WS	
54W	73232-24995	40/3	WS	2=Comms
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
54W	73232-24995		WS	
55W	73389-34841	40/3	WS	3=Elec
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
55W	73389-34841		WS	
56W	73490-34744	40/4	WS	1=None
56W	73490-34744		WS	
56W	73490-34744		WS	
56W	73490-34744		WS	
56W	73490-34744		WS	
56W	73490-34744		WS	
57W	73559-34679	40/3	WS	2=Comms
57W	73559-34679		WS	

57W	73559-34679		WS	
57W	73559-34679		WS	
57W	73559-34679		WS	
57W	73559-34679		WS	
62W	73669-33890	40/3	WS	1=None
62W	73669-33890		WS	
62W	73669-33890		WS	
62W	73669-33890		WS	
62W	73669-33890		WS	
62W	73669-33890		WS	
62W	73669-33890		WS	
63W	72562-34027	50/2	WS	1=None
63W	72562-34027		WS	
63W	72562-34027		WS	
63W	72562-34027		WS	
63W	72562-34027		WS	
63W	72562-34027		WS	
63W	72562-34027		WS	
63W	72562-34027		WS	
63W	72562-34027		WS	
63W	72562-34027		WS	
64W	72452-34137	40/3	WS	1=None
64W	72452-34137		WS	
64W	72452-34137		WS	
64W	72452-34137		WS	
64W	72452-34137		WS	
64W	72452-34137		WS	
64W	72452-34137		WS	
64W	72452-34137		WS	
65W	72326-34263	40/4	WS	1=None
65W	72326-34263		WS	
65W	72326-34263		WS	
65W	72326-34263		WS	
65W	72326-34263		WS	
65W	72326-34263		WS	
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65W	72326-34263		WS	
65W	72326-34263		WS	
66W	72217-34372	40/4	WS	1=None
66W	72217-34372		WS	

71W	71813-34779	40/4	WS	1=None
71W	71813-34779		WS	
71W	71813-34779		WS	
71W	71813-34779		WS	
71W	71813-34779		WS	
71W	71813-34779		WS	
71W	71813-34779		WS	
71W	71813-34779		WS	
92W	70678-34125	60/2	WS	1=None
92W	70678-34125		WS	
92W	70678-34125		WS	
92W	70678-34125		WS	
92W	70678-34125		WS	
97W	27230-159	55/2	WS	2=Comms
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
97W	27230-159		WS	
98W	27230-155	55/2	WS	1=None
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
98W	27230-155		WS	
99W	27230-165	45/3	WS	2=Comms
99W	27230-165		WS	
99W	27230-165		WS	

Owner	Category	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
	34.70	132 LACLEDE AVE	38.07366	-84.45486	KU		
			38.07366	-84.45486	KU		
Resag Neutral			38.07366	-84.45486	KU		
Resag Secondary			38.07366	-84.45486	KU		
Resag Secondary			38.07366	-84.45486	KU		
			38.07366	-84.45486	KU		
			38.07366	-84.45486	KU		
			38.07366	-84.45486	Metronet		
Lower & Resag Charter			38.07366	-84.45486	Charter		
Lower & Resag Windstream			38.07366	-84.45486	Windstream		
Lower & Resag Windstream			38.07366	-84.45486	Windstream		
	26.80	134 LACLEDE AVE	38.07339	-84.45451	KU		
			38.07339	-84.45451	KU		
			38.07339	-84.45451	KU		
			38.07339	-84.45451	KU		
			38.07339	-84.45451	KU		
			38.07339	-84.45451	Metronet		
			38.07339	-84.45451	Charter		
			38.07339	-84.45451	Windstream		
			38.07339	-84.45451	Windstream		
	22.70	145 LACLEDE AVE	38.07312	-84.45419	KU		
			38.07312	-84.45419	KU		
			38.07312	-84.45419	Metronet		
			38.07312	-84.45419	Charter		
			38.07312	-84.45419	Windstream		
			38.07312	-84.45419	Windstream		
	21.40	140 LACLEDE AVE	38.07284	-84.45385	KU		
			38.07284	-84.45385	KU		
			38.07284	-84.45385	KU		
			38.07284	-84.45385	KU		
			38.07284	-84.45385	KU		
			38.07284	-84.45385	Metronet		
			38.07284	-84.45385	Charter		

		38.07284	-84.45385	Windstream
		38.07284	-84.45385	Windstream
32.30	140 LACLEDE AVE	38.07263	-84.45360	KU
		38.07263	-84.45360	KU
		38.07263	-84.45360	KU
		38.07263	-84.45360	Metronet
		38.07263	-84.45360	Metronet
		38.07263	-84.45360	Charter
		38.07263	-84.45360	Charter
		38.07263	-84.45360	Windstream
		38.07263	-84.45360	Windstream
		38.07263	-84.45360	Windstream
		38.07263	-84.45360	Windstream
44.30	1993 LACLEDE CT	38.07243	-84.45354	KU
		38.07243	-84.45354	KU
		38.07243	-84.45354	KU
		38.07243	-84.45354	KU
		38.07243	-84.45354	Metronet
		38.07243	-84.45354	Metronet
Lower & Resag Charter		38.07243	-84.45354	Charter
Lower Charter		38.07243	-84.45354	Charter
Lower & Resag Windstream		38.07243	-84.45354	Windstream
Lower Windstream		38.07243	-84.45354	Windstream
Lower & Resag Windstream		38.07243	-84.45354	Windstream
Lower Windstream		38.07243	-84.45354	Windstream
49.40	1941 LACLEDE CT	38.07206	-84.45313	KU
		38.07206	-84.45313	KU
		38.07206	-84.45313	KU
		38.07206	-84.45313	KU
		38.07206	-84.45313	KU
Raise streetlight		38.07206	-84.45313	KU
		38.07206	-84.45313	KU
		38.07206	-84.45313	Metronet
		38.07206	-84.45313	Charter
		38.07206	-84.45313	Windstream
		38.07206	-84.45313	Windstream
19.20	1945 LACLEDE CT	38.07184	-84.45285	KU
		38.07184	-84.45285	KU
		38.07184	-84.45285	Metronet
		38.07184	-84.45285	Charter
		38.07184	-84.45285	Windstream
		38.07184	-84.45285	Windstream
18.60	1949 LACLEDE CT	38.07152	-84.45248	KU
		38.07152	-84.45248	KU

		38.07152	-84.45248	Metronet
Lower Charter		38.07152	-84.45248	Charter
Lower Windstream		38.07152	-84.45248	Windstream
Lower Windstream		38.07152	-84.45248	Windstream
	30.40 184 WINSTON AVE	38.06943	-84.45552	KU
		38.06943	-84.45552	KU
		38.06943	-84.45552	Metronet
		38.06943	-84.45552	Metronet
		38.06943	-84.45552	Charter
Attach to new pole		38.06943	-84.45552	Windstream
Attach to new pole		38.06943	-84.45552	Windstream
	49.10 174 WINSTON AVE	38.06985	-84.45602	KU
		38.06985	-84.45602	KU
		38.06985	-84.45602	KU
		38.06985	-84.45602	KU
		38.06985	-84.45602	KU
		38.06985	-84.45602	KU
		38.06985	-84.45602	Metronet
		38.06985	-84.45602	Charter
		38.06985	-84.45602	Windstream
		38.06985	-84.45602	Windstream
	28.60 160 WINSTON AVE	38.07015	-84.45637	KU
		38.07015	-84.45637	KU
		38.07015	-84.45637	KU
		38.07015	-84.45637	KU
		38.07015	-84.45637	Metronet
		38.07015	-84.45637	Charter
		38.07015	-84.45637	Windstream
		38.07015	-84.45637	Windstream
	30.00 154 WINSTON AVE	38.07055	-84.45683	KU
		38.07055	-84.45683	KU
		38.07055	-84.45683	KU
		38.07055	-84.45683	KU
		38.07055	-84.45683	KU
		38.07055	-84.45683	KU
		38.07055	-84.45683	KU
		38.07055	-84.45683	Metronet
		38.07055	-84.45683	Charter
		38.07055	-84.45683	Windstream
		38.07055	-84.45683	Windstream
	29.20 144 WINSTON AVE	38.07081	-84.45714	KU
		38.07081	-84.45714	KU

	38.07081	-84.45714	KU
	38.07081	-84.45714	KU
	38.07081	-84.45714	KU
	38.07081	-84.45714	Metronet
	38.07081	-84.45714	Charter
	38.07081	-84.45714	Windstream
	38.07081	-84.45714	Windstream
31.10 118 WINSTON AVE	38.07116	-84.45755	KU
	38.07116	-84.45755	KU
	38.07116	-84.45755	KU
	38.07116	-84.45755	KU
	38.07116	-84.45755	KU
	38.07116	-84.45755	KU
	38.07116	-84.45755	Metronet
	38.07116	-84.45755	Charter
	38.07116	-84.45755	Windstream
	38.07116	-84.45755	Windstream
20.70 112 WINSTON AVE	38.07139	-84.45783	KU
	38.07139	-84.45783	KU
	38.07139	-84.45783	KU
	38.07139	-84.45783	KU
	38.07139	-84.45783	Metronet
	38.07139	-84.45783	Charter
	38.07139	-84.45783	Windstream
	38.07139	-84.45783	Windstream
20.30 112 WINSTON AVE	38.07152	-84.45799	KU
	38.07152	-84.45799	KU
	38.07152	-84.45799	KU
	38.07152	-84.45799	KU
	38.07152	-84.45799	KU
	38.07152	-84.45799	Metronet
	38.07152	-84.45799	Charter
	38.07152	-84.45799	Windstream
	38.07152	-84.45799	Windstream
27.50 106 WINSTON AVE	38.07166	-84.45816	KU
	38.07166	-84.45816	KU
	38.07166	-84.45816	KU
	38.07166	-84.45816	KU
	38.07166	-84.45816	Metronet
	38.07166	-84.45816	Charter
	38.07166	-84.45816	Windstream
	38.07166	-84.45816	Windstream

35.80	104 WINSTON AVE	38.07197	-84.45852	KU
		38.07197	-84.45852	KU
		38.07197	-84.45852	KU
		38.07197	-84.45852	KU
		38.07197	-84.45852	Metronet
		38.07197	-84.45852	Charter
		38.07197	-84.45852	Windstream
		38.07197	-84.45852	Windstream
34.20	1800 OLD PARIS RD	38.07021	-84.46256	KU
		38.07021	-84.46256	Metronet
		38.07021	-84.46256	Level 3
		38.07021	-84.46256	Charter
		38.07021	-84.46256	Windstream
43.80	127 E NEW CIRCLE RD	38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	KU
		38.06453	-84.46824	Metronet
		38.06453	-84.46824	B&V
Lower Charter		38.06453	-84.46824	Charter
Lower Windstream		38.06453	-84.46824	Windstream
35.40	145 E NEW CIRCLE RD	38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	KU
		38.06423	-84.46796	Metronet
		38.06423	-84.46796	B&V
		38.06423	-84.46796	Charter
		38.06423	-84.46796	Windstream
39.60	145 E NEW CIRCLE RD	38.06400	-84.46770	KU
		38.06400	-84.46770	KU
		38.06400	-84.46770	KU

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Power	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
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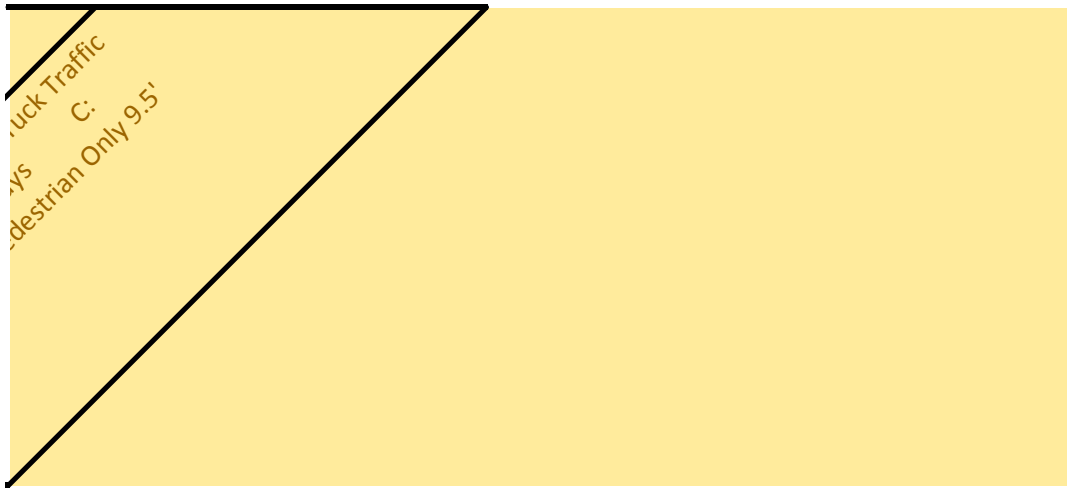
Primary	31' 5"				N	Y			B: Residential/Over Driveways	
Neutral	25' 11"				N	Y				
Neutral	25' 6"				N	Y				
Secondary	24' 11"				N	Y				
Secondary	24' 3"				N	Y				
Streetlight	23' 5"				N	Y				
Streetlight Drip Loop	23' 0"				N	Y				
Communication		20'8"			N	Y				
Communication	20' 8"	19'6"	7		N	Y				
Communication	19' 6"	18'5"			N	Y				
Communication	18' 5"	17'5"	15'9"		N	Y				
Primary	32' 9"				N	N			D: Pedestrian Only 9.5'	
Transformer	27' 9"				N	N				
Neutral	26' 6"				N	N				
Secondary	25' 9"				N	N				
Secondary	25' 0"				N	N				
Communication		20'9"			N	N				
Communication	19' 9"		56		N	N				
Communication	18' 10"				N	N				
Communication	17' 8"		16'7"		N	N				
Primary	32' 2"				N	N			D: Pedestrian Only 9.5'	
Neutral	26' 11"				N	N				
Communication		22'7"			N	N				
Communication	21' 7"		51		N	N				
Communication	20' 0"				N	N				
Communication	18' 11"		17'2"		N	N				
Primary	33' 6"				N	N			D: Pedestrian Only 9.5'	
Secondary	31' 4"				N	N				
Neutral	30' 7"				N	N				
Transformer	29' 9"				N	N				
Secondary Drip Loop	29' 4"				N	N				
Communication		21'6"			N	N				
Communication	20' 6"		100		N	N				

Communication	19' 7"			N	N	
Communication	18' 7"	17'5"		N	N	
Primary	33' 9"			N	N	B:Residential/Over Driveways
Primary	33' 3"			N	N	
Neutral	26' 10"			N	N	
Communication		22'9"		N	N	
Communication		22'5"		N	N	
Communication	21' 9"		43	N	N	
Communication	21' 4"			N	N	
Communication	20' 10"			N	N	
Communication	20' 6"			N	N	
Communication	19' 11"	17'11"		N	N	
Communication	19' 6"			N	N	
Primary	33' 8"			Y	Y	B:Residential/Over Driveways
Transformer	27' 3"			Y	Y	
Primary Riser	26' 3"			Y	Y	
Neutral	26' 0"			Y	Y	
Communication		22'3"		Y	Y	
Communication		22'0"		Y	Y	
Communication	22' 9"	21'4"	57	Y	Y	
Communication	22' 6"	21'0"		Y	Y	
Communication	21' 9"	20'4"		Y	Y	
Communication	21' 5"	20'0"		Y	Y	
Communication	20' 7"	19'4"		Y	Y	
Communication	20' 4"	19'0"	15'4"	Y	Y	
Primary	32' 11"			N	N	D: Pedestrian Only 9.5'
Neutral	27' 3"			N	N	
Primary Riser	26' 9"			N	N	
Neutral	25' 8"			N	N	
Streetlight	24' 10"			N	N	
Streetlight	23' 3"			N	N	
Streetlight Drip Loop	22' 11"	23'2"		N	N	
Communication		22'2"		N	N	
Communication	21' 2"		84	N	N	
Communication	20' 9"			N	N	
Communication	19' 8"	16'2"		N	N	
Primary	31' 7"			N	N	D: Pedestrian Only 9.5'
Neutral	26' 10"			N	N	
Communication		20'4"		N	N	
Communication	19' 4"		90	N	N	
Communication	18' 2"			N	N	
Communication	17' 0"	13'7"		N	N	
Primary	33' 1"			N	N	B:Residential/Over Driveways
Neutral	27' 8"			N	N	

Communication		23'10"		N	N	
Communication	23' 10"	22'8"	81	N	N	
Communication	22' 8"	21'7"		N	N	
Communication	21' 7"	20'7"	21'3"	N	N	
Primary	32' 9"			N	Y	B:Residential/Over Driveways
Neutral	26' 10"			N	Y	
Communication		20'0"		N	Y	
Communication		19'8"		N	Y	
Communication	19' 0"		47	N	Y	
Communication		18'0"		N	Y	
Communication		17'0"	13'0"	N	Y	
Primary	42' 4"			N	N	B:Residential/Over Driveways
Transformer	36' 8"			N	N	
Neutral	36' 3"			N	N	
Neutral	34' 8"			N	N	
Secondary	34' 1"			N	N	
Secondary	33' 8"			N	N	
Communication		27'6"		N	N	
Communication	26' 6"		98	N	N	
Communication	25' 4"			N	N	
Communication	24' 3"		18'8"	N	N	
Primary	32' 11"			N	Y	B:Residential/Over Driveways
Transformer	27' 6"			N	Y	
Neutral	26' 10"			N	Y	
OH Guy	25' 1"			N	Y	
Communication		22'8"		N	Y	
Communication	21' 8"		66	N	Y	
Communication	20' 3"			N	Y	
Communication	19' 2"		12'5"	N	Y	
Primary	30' 5"			N	Y	B:Residential/Over Driveways
Transformer	26' 1"			N	Y	
Neutral	25' 2"			N	Y	
Secondary	24' 9"			N	Y	
Neutral	24' 2"			N	Y	
Secondary	23' 7"			N	Y	
OH Guy	22' 11"			N	Y	
Communication		19'7"		N	Y	
Communication	18' 7"		41	N	Y	
Communication	17' 8"			N	Y	
Communication	16' 9"		14'0"	N	Y	
Primary	33' 4"			N	Y	B:Residential/Over Driveways
Transformer	27' 3"			N	Y	

Secondary	26' 5"		N	Y	
Neutral	25' 8"		N	Y	
Secondary	25' 0"		N	Y	
Communication		19'11"	N	Y	
Communication	18' 11"		53	N	Y
Communication	17' 9"			N	Y
Communication	16' 7"	14'8"		N	Y
Primary	32' 7"		N	N	B:Residential/Over Driveways
Transformer	28' 7"		N	N	
Secondary	27' 7"		N	N	
Neutral	27' 0"		N	N	
Secondary	26' 5"		N	N	
Secondary Drip Loop	25' 5"		N	N	
Communication		20'11"	N	N	
Communication	19' 11"		39	N	N
Communication	18' 11"			N	N
Communication	17' 10"	15'7"		N	N
Primary	32' 0"		N	N	B:Residential/Over Driveways
Secondary	26' 4"		N	N	
Neutral	25' 6"		N	N	
Secondary	24' 11"		N	N	
Communication		19'10"	N	N	
Communication	18' 10"		61	N	N
Communication	17' 6"			N	N
Communication	16' 5"	16'2"		N	N
Primary	32' 4"		N	N	B:Residential/Over Driveways
Transformer	26' 6"		N	N	
Secondary	24' 8"		N	N	
Neutral	24' 1"		N	N	
Secondary	23' 5"		N	N	
Communication		19'3"	N	N	
Communication	18' 3"		54	N	N
Communication	17' 2"			N	N
Communication	16' 8"	17'2"		N	N
Primary	32' 11"		N	N	B:Residential/Over Driveways
Secondary	28' 6"		N	N	
Neutral	27' 2"		N	N	
Secondary	26' 9"		N	N	
Communication		22'9"	N	N	
Communication	21' 9"		47	N	N
Communication	20' 9"			N	N
Communication	19' 8"	15'10"		N	N

Primary	33' 8"			Y	N	D: Pedestrian Only 9.5'
Primary	33' 5"			Y	N	
Neutral	26' 6"			Y	N	
OH Guy	25' 2"			Y	N	
Communication		21'9"		Y	N	
Communication	20' 9"		115	Y	N	
Communication	20' 0"			Y	N	
Communication	19' 0"		18'1"	Y	N	
Primary	47' 1"			N	N	B:Residential/Over Driveways
Communication		29'2"		N	N	
Communication	28' 2"		49	N	N	
Communication	24' 8"			N	N	
Communication	21'5"		21'2"	N	N	
Primary	46' 0"			Y	N	B:Residential/Over Driveways
Transformer	36' 2"			Y	N	
Neutral	35' 0"			Y	N	
Secondary	34' 7"			Y	N	
Secondary	33' 10"			Y	N	
Secondary	33' 0"			Y	N	
Secondary	32' 5"			Y	N	
Secondary	32' 2"			Y	N	
Secondary	31' 6"			Y	N	
Secondary Riser	30' 0"			Y	N	
Streetlight	28' 9"			Y	N	
Communication		26'0"		Y	N	
Pending Permit		25'0"		Y	N	
Communication	27' 1"	24'0"	76	Y	N	
Communication	26' 0"	23'0"	22'2"	Y	N	
Primary	46' 6"			N	N	D: Pedestrian Only 9.5'
Transformer	37' 6"			N	N	
Neutral	35' 2"			N	N	
Secondary	34' 5"			N	N	
Secondary	33' 8"			N	N	
Secondary Riser	32' 10"			N	N	
Streetlight	32' 4"			N	N	
Streetlight	31' 3"			N	N	
Communication		28'3"		N	N	
Pending Permit		27'3"		N	N	
Communication	26' 3"		71	N	N	
Communication	25' 3"		20'11"	N	N	
Primary	39' 0"			N	N	D: Pedestrian Only 9.5'
Transformer	30' 8"			N	N	
Secondary	30' 0"			N	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX167-02W
Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: LAUREN SANDEFUR 812-213-1328
EMAIL ADDRESS: lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: *LSandefur* 3-19-18

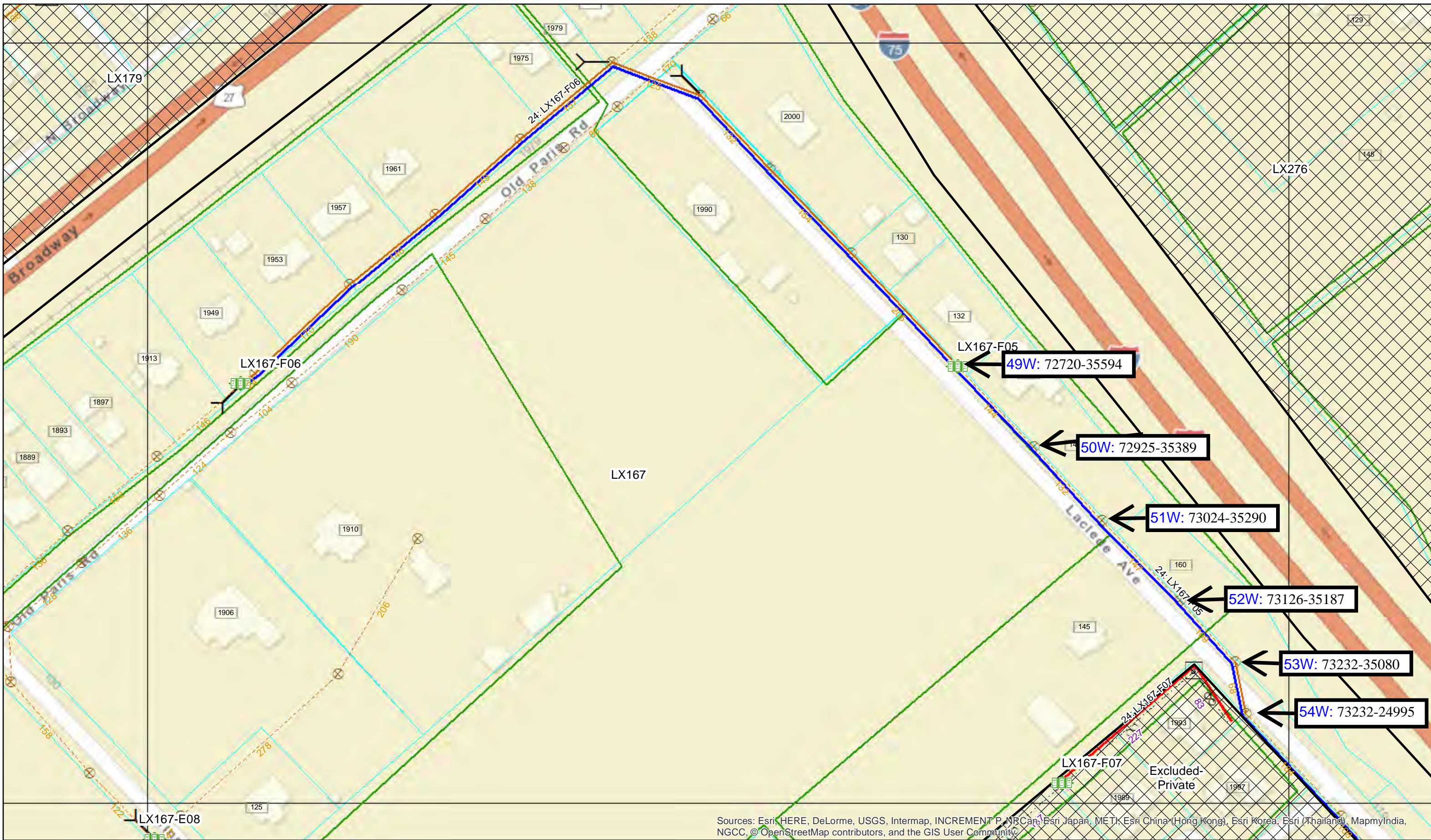
By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensor Work Description	Bill for Rent Y or N
1	73819-35495	49W	132 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	19'6"	19'5"	23'0"	(1)Fiber/Strand			
2	72925-35389	50W	134 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	18'10"	19'3"	25'0"	(1)Fiber/Strand			
3	73024-35299	51W	145 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	20'0"	N/A	26'11"	(1)Fiber/Strand			
4	73126-35187	52W	140 LACLEDE AVE, Lexington, KY 40505	40, 3, WXM	19'7"	N/A	29'4"	(1)Fiber/Strand			
5	73232-35080	53W	140 LACLEDE AVE, Lexington, KY 40505	45, 3, WXM	20'10"	N/A	26'10"	(2)Fiber/Strand			
6	73232-24995	54W	1993 LACLEDE CT, Lexington, KY 40505	40, 3, WXM	21'9"	N/A	26'0"	(2)Fiber/Strand			
7	73389-34841	55W	1941 LACLEDE CT, Lexington, KY 40505	40, 3, WXM	20'10"	N/A	22'11"	(1)Fiber/Strand			
8	73490-34744	56W	1945 LACLEDE CT, Lexington, KY 40505	40, 4, WXM	18'2"	17'1"	26'10"	(1)Fiber/Strand			
9	73559-34679	57W	1949 LACLEDE CT, Lexington, KY 40505	40, 3, WXM	22'8"	N/A	27'8"	(1)Fiber/Strand			
10	73669-33890	62W	184 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	N/A	N/A	26'10"	(2)Fiber/Strand			
11	72562-34027	63W	174 WINSTON AVE, Lexington, KY 40505	50, 2, WXM	25'4"	24'1"	33'8"	(1)Fiber/Strand			
12	72452-34137	64W	160 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	20'3"	20'3"	26'10"	(1)Fiber/Strand			
13	72326-34263	65W	154 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	17'8"	17'11"	23'7"	(1)Fiber/Strand			
14	72217-34372	66W	144 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	17'9"	17'9"	25'0"	(1)Fiber/Strand			
15	72098-34492	67W	118 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	18'11"	19'2"	25'5"	(1)Fiber/Strand			
16	72018-34572	68W	112 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	17'6"	17'6"	24'11"	(1)Fiber/Strand			
17	71971-34621	69W	112 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	17'2"	N/A	23'5"	(1)Fiber/Strand			
18	71911-34680	70W	106 WINSTON AVE, Lexington, KY 40505	40, 3, WXM	20'9"	20'9"	26'9"	(1)Fiber/Strand			
19	71813-34779	71W	104 WINSTON AVE, Lexington, KY 40505	40, 4, WXM	20'0"	20'0"	26'6"	(1)Fiber/Strand			

20	70678-34125	92W	1800 OLD PARIS RD, Lexington, KY 40505	60, 2, WXM	21'5"	N/A	47'1"		(1)Fiber/Strand			
21	27230-159	97W	127 E NEW CIRCLE RD, Lexington, KY 40504	55, 2, WXM	26'0"	N/A	28'9"		(1)Fiber/Strand			
22	27230-155	98W	145 E NEW CIRCLE RD, Lexington, KY 40504	55, 2, WXM	25'3"	N/A	31'3"		(1)Fiber/Strand			
23	27230-165	99W	145 E NEW CIRCLE RD, Lexington, KY 40504	45, 3, WXM	21'5"	21'5"	24'4"		(1)Fiber/Strand			
24	26230-175	100W	175 E NEW CIRCLE RD, BLDG 2, Lexington, KY 40504	45, 3, WXM	18'8"	N/A	24'0"		(1)Fiber/Strand			
25	27230-185	101W	185 E NEW CIRCLE RD, Lexington, KY 40504	45, 3, WXM	19'3"	18'6"	22'3"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community.

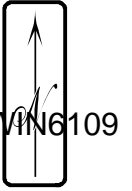
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 LXTNKXJ00437.CB
 DATE 12/11/2017
 USER NAME: arcgis
 DESIGN ENG

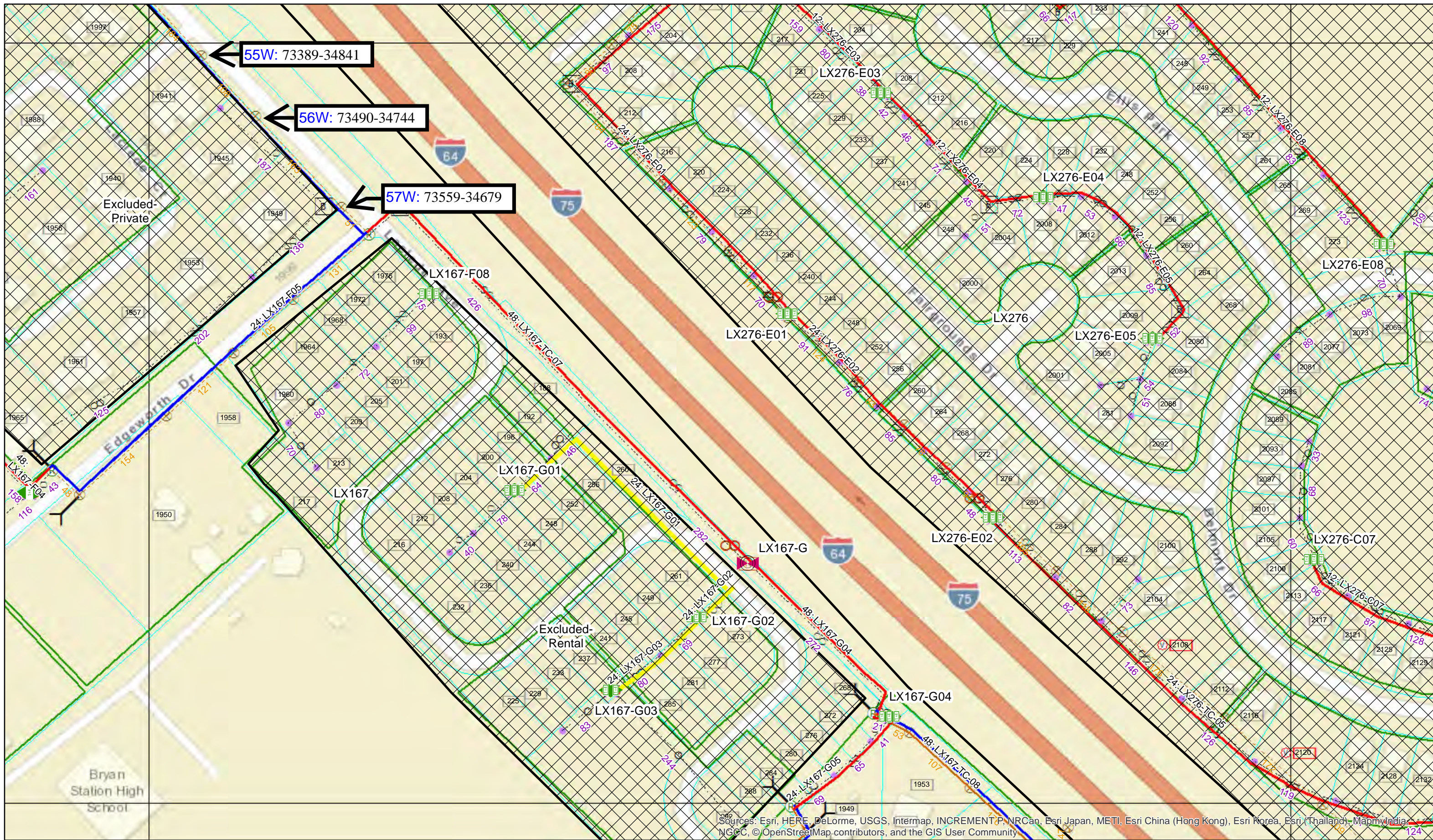
STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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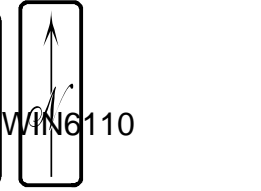
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 DATE: 12/11/2017
 USER NAME: argis
 DESIGN ENG

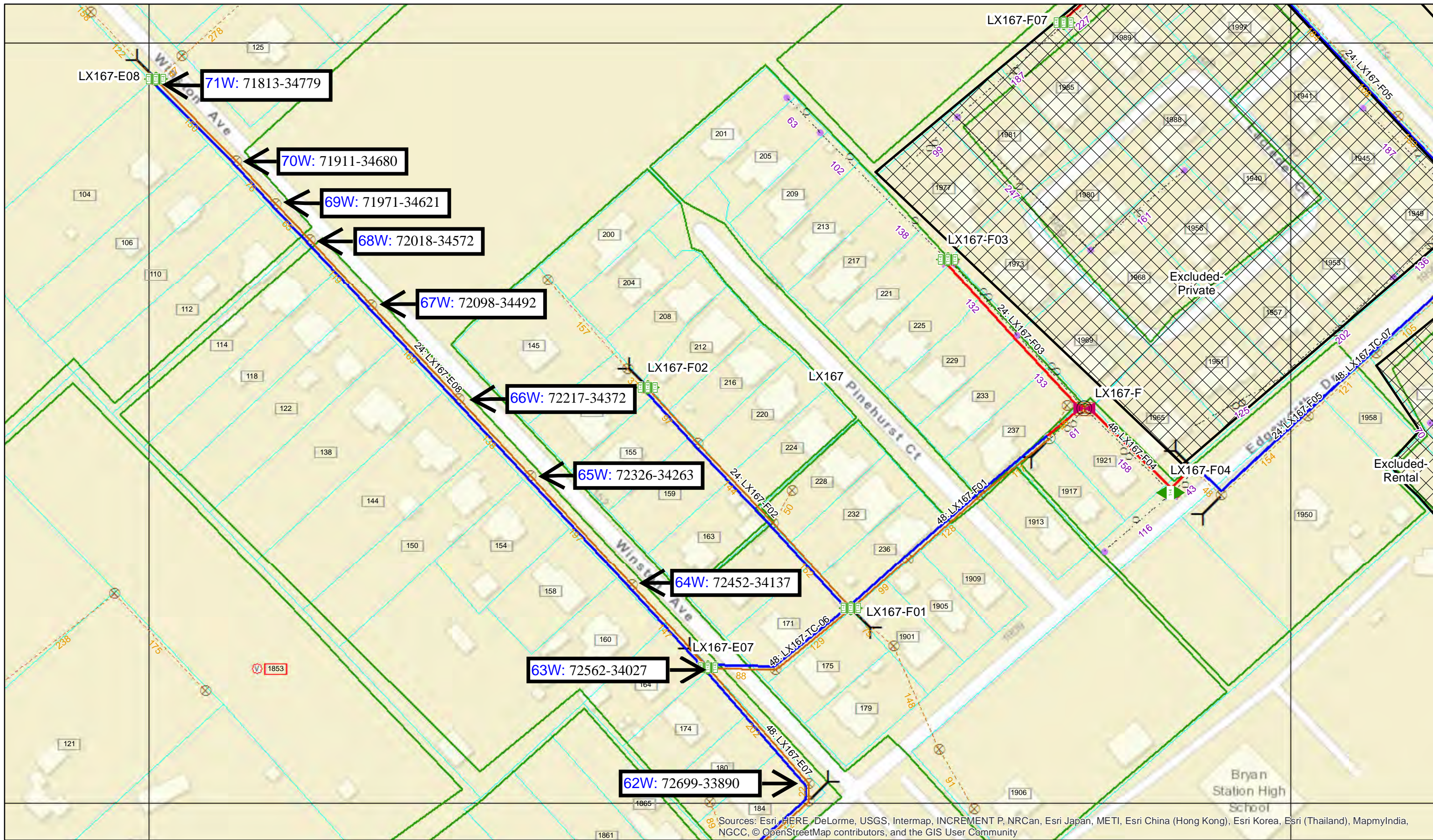
STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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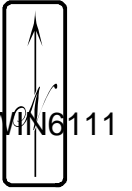
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 DATE: 12/11/2017
 USER NAME: arcgis
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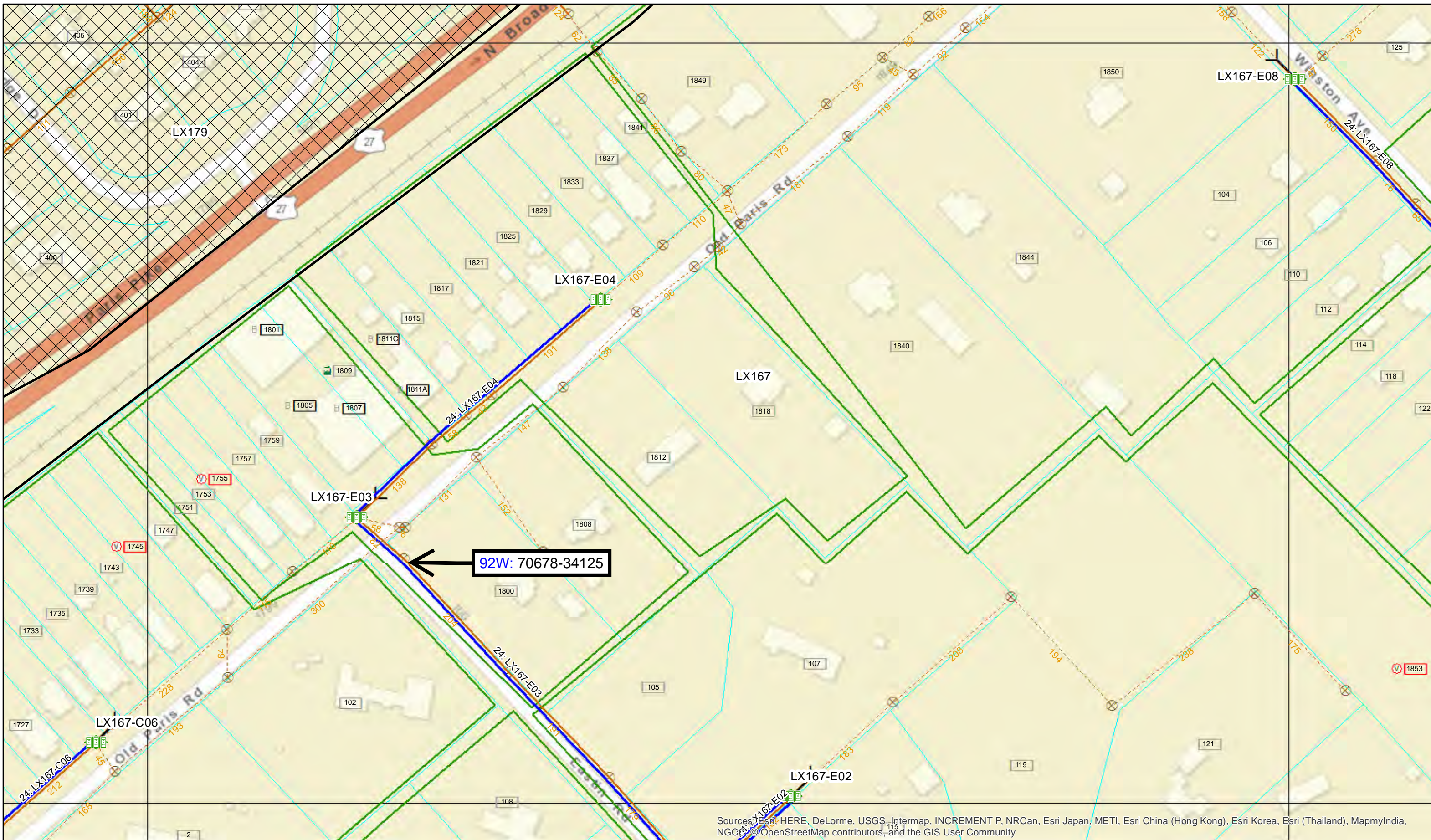
STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBN34

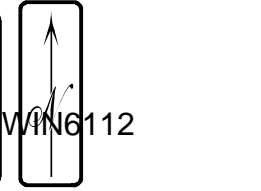
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 DATE: 12/11/2017
 PROJECT NUMBER:
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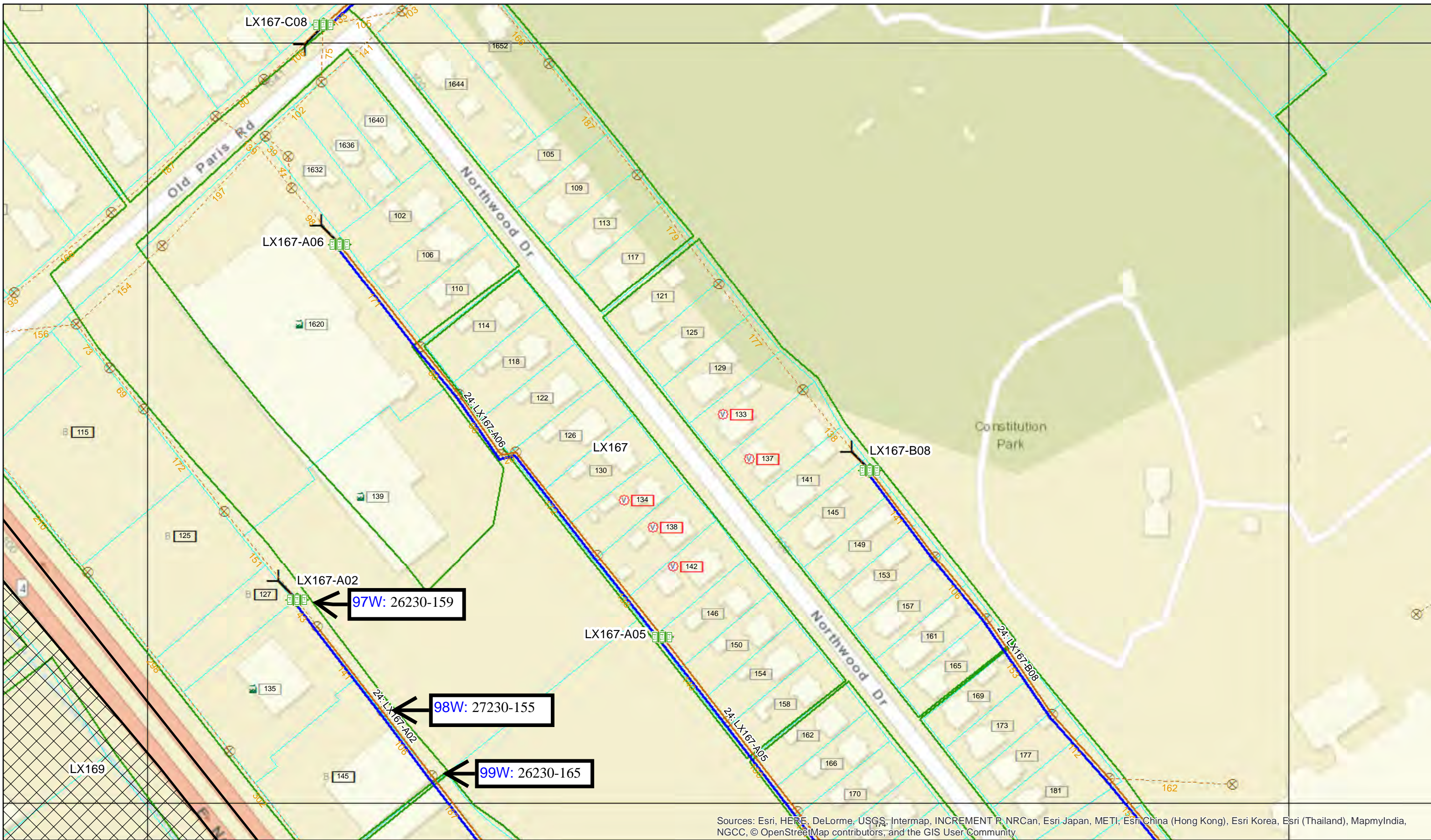
STAKING GRID DRAWING

ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBL33

DESIGN ENG
 USER NAME: arqgis
 DATE: 12/11/2017
 PROJECT NUMBER:
 LXTNXY00437.CB

STAKING GRID DRAWING

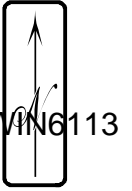
ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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WIN6113

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

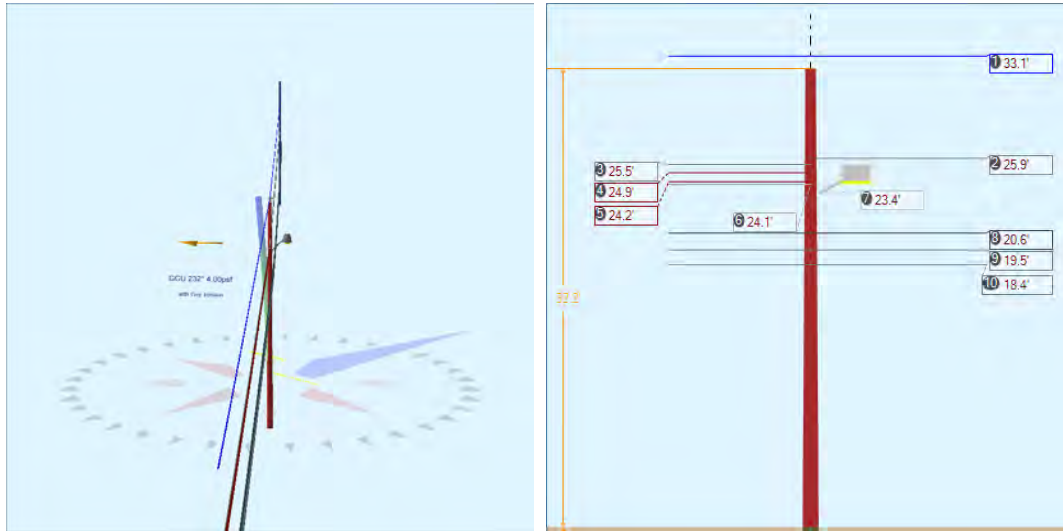
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE	POWER POLE
1X4 (1) TERMINAL	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL	JOINT USE POLE
1X4 (3) TERMINAL	JOINT USE POLE W/TRANSFORMER
FIBER SPUCE	DROP POLE
HIP CABINET	TELEPHONE POLE
LCP CABINET	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPUCE	STEEL POLE
TOTAL PHYSICAL SPUCE COUNT WITHIN CASE	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS	UTILITY BOX
RESIDENTIAL DUPLEX	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES)	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN)	ROADS
AERIAL (SLACK SPAN)	WORK POINTS
NEW / PROPOSED TRENCH	RAILROADS
EXISTING INHERITED TRENCH	

Pole Num:	49W - 73819-35495	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.80	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.31	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.073665 Deg	Longitude:	-84.454861 Deg	Elevation:	881.255219806316		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	232.0
Groundline	0.0	232.0
Vertical	18.1	135.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,079	256.1
Groundline	27,079	256.1
GL Allowable	78,997	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	213.0	315.8		0.0	232.0	0.0	0.0
? EHS 3/8 (Span/Head)			24.1	0.0	232.0	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 256.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	465	39.2	13,541	50.0	17.1	1,163	266	3	1,165	17.1
Comms	492	41.4	9,224	34.1	11.7	792	918	9	801	11.8
GuyBraces	47	4.0	1,138	4.2	1.4	98	50	1	98	1.4
Pole	159	13.4	2,645	9.8	3.4	227	1,750	18	245	3.6
Streetlights	18	1.5	368	1.4	0.5	32	86	1	32	0.5
Insulators	6	0.5	164	0.6	0.2	14	68	1	15	0.2
Pole Load	1,186	100.0	27,079	100.0	34.3	2,325	3,138	32	2,357	34.7
Pole Reserve Capacity			51,918		65.7	4,475			4,443	65.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 256.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	536	45.2	15,225	56.2	19.3	1,307	441	4	1,312	19.3
Unknown, COMMUNICATION	492	41.4	9,210	34.0	11.7	791	946	10	800	11.8
Pole	159	13.4	2,645	9.8	3.4	227	1,750	18	245	3.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,186	100.0	27,079	100.0	34.3	2,325	3,138	32	2,357	34.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.07	0.00	0.3250	0.32	0.107	139.1	136.5	139.1	1,684	-35,791	0	958	-34,833
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.07	0.00	0.3250	0.74	0.107	213.0	315.8	213.0	1,684	36,558	0	1,455	38,013
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.89	6.54	0.3250	0.74	0.107	213.0	315.8	213.0	1,684	28,605	16	1,139	29,760
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.48	6.57	0.3250	1.46	0.107	139.1	136.5	139.1	450	-7,364	-10	738	-6,636
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.88	6.61	0.3250	1.46	0.107	139.1	136.5	139.1	450	-7,191	-10	721	-6,481

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.25	6.64	0.3250	1.46	0.107	139.1	136.5	139.1	450	-7,009	-10	702	-6,317
											Totals:	7,808	-15	5,713	13,506

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.65	6.86	1.3300	1.95	0.337	139.1	136.5	139.1	925	-12,267	-54	1,326	-10,995
CATV	CATV 1.0	Unknown, COMMUNICATION	20.65	6.86	1.3300	3.41	0.337	213.0	315.8	213.0	925	12,530	-83	2,014	14,461
Telco	TELE 1.5	Unknown, COMMUNICATION	19.47	6.94	1.5000	2.29	0.900	139.1	136.5	139.1	2,000	-25,014	-96	1,367	-23,742
Telco	TELE 1.5	Unknown, COMMUNICATION	19.47	6.94	1.5000	4.07	0.900	213.0	315.8	213.1	2,000	25,549	-146	2,076	27,479
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	7.00	0.6570	1.94	0.190	139.1	136.5	139.1	750	-8,883	-32	749	-8,166
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	7.00	0.6570	3.31	0.190	213.0	315.8	213.0	750	9,073	-48	1,137	10,162
											Totals:	989	-459	8,670	9,200

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.45	4.19	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-57	424	367
											Totals:	-57	424	367

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.20	0.00	0.0	0.0	13.00	9.00	10.50	0	137	137
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.89	0.00	315.8	315.8	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.48	0.00	136.5	136.5	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.88	0.00	136.5	136.5	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.25	0.00	136.5	136.5	2.00	3.00	3.19	-1	10	9
Bolt	Three Bolt	Unknown, COMMUNICATION	20.65	0.00	46.1	136.1	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.47	0.00	46.1	136.1	5.00	3.00	0.00	-5	0	-5

Bolt	Three Bolt	Unknown, COMMUNICATION	18.44	0.00	46.1	136.1	5.00	3.00	0.00	-5	0	-5
Totals:										-16	179	163

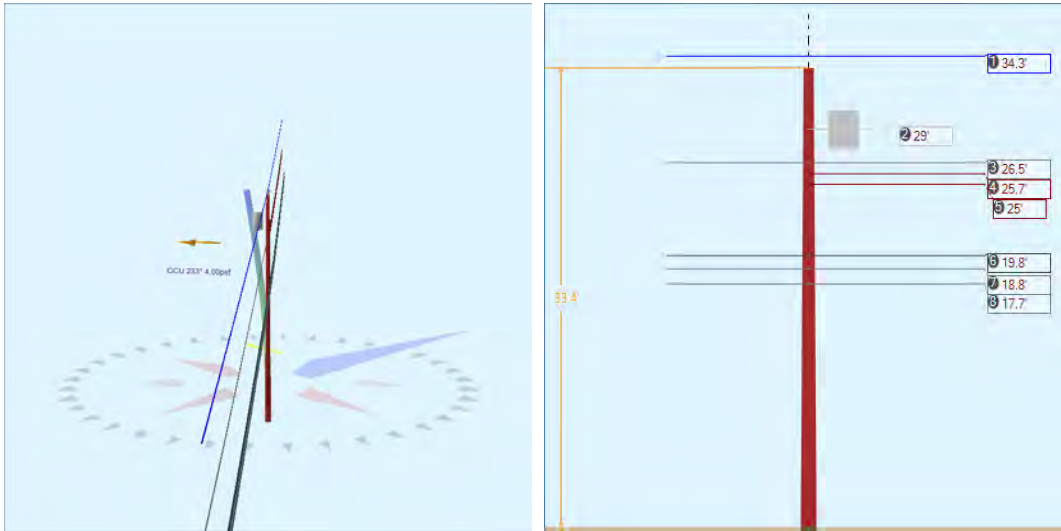
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	24.08	24.08	212.97	0.375	75.00	315.8	0.0	0.273	211.12	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	1,135	
Totals:										0	0	0	1,135

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	212.97	315.8	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.09	32.94	10.51	7.39	7.32	11.25	1.60e+6	60.00	57.00	32.20	341,707	3486.18	111.11

Pole Num:	50W - 72925-35389	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.59	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.78	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.073393 Deg	Longitude:	-84.454514 Deg	Elevation:	881.681915400003		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.8	0.0
Groundline	26.8	0.0
Vertical	9.8	20.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,589	251.7
Groundline	21,589	251.7
GL Allowable	82,161	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 251.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	353	36.9	9,473	43.9	11.5	781	223	2	783	11.5
Comms	391	40.8	7,027	32.6	8.6	580	720	7	587	8.6
PowerEquipments	35	3.6	1,952	9.0	2.4	161	636	6	167	2.5
Pole	173	18.1	2,957	13.7	3.6	244	1,847	18	262	3.9
Insulators	6	0.6	181	0.8	0.2	15	68	1	16	0.2
Pole Load	958	100.0	21,589	100.0	26.3	1,780	3,495	34	1,815	26.7
Pole Reserve Capacity			60,572		73.7	5,020			4,985	73.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 251.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	394	41.1	11,620	53.8	14.1	958	899	9	967	14.2
Unknown, COMMUNICATION	391	40.8	7,012	32.5	8.5	578	749	7	586	8.6
Pole	173	18.1	2,957	13.7	3.6	244	1,847	18	262	3.9
Totals:	958	100.0	21,589	100.0	26.3	1,780	3,495	34	1,815	26.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.29	0.00	0.3250	0.31	0.107	137.1	137.0	137.1	1,684	-24,172	0	1,022	-23,151
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.29	0.00	0.3250	0.32	0.107	139.1	316.5	139.1	1,684	24,629	0	1,031	25,660
Neutral	#4 COPPER SOLID KU, UTILITY	26.53	6.58	0.2043	0.42	0.126	137.1	137.0	137.1	982	-10,902	-8	675	-10,235
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.53	6.58	0.3250	1.46	0.107	139.1	316.5	139.1	450	5,090	9	797	5,896
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	25.73	6.63	0.3250	1.46	0.107	139.1	316.5	139.1	450	4,937	9	773	5,719
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.96	6.67	0.3250	1.46	0.107	139.1	316.5	139.1	450	4,789	9	750	5,549
Totals:											4,372	19	5,048	9,439

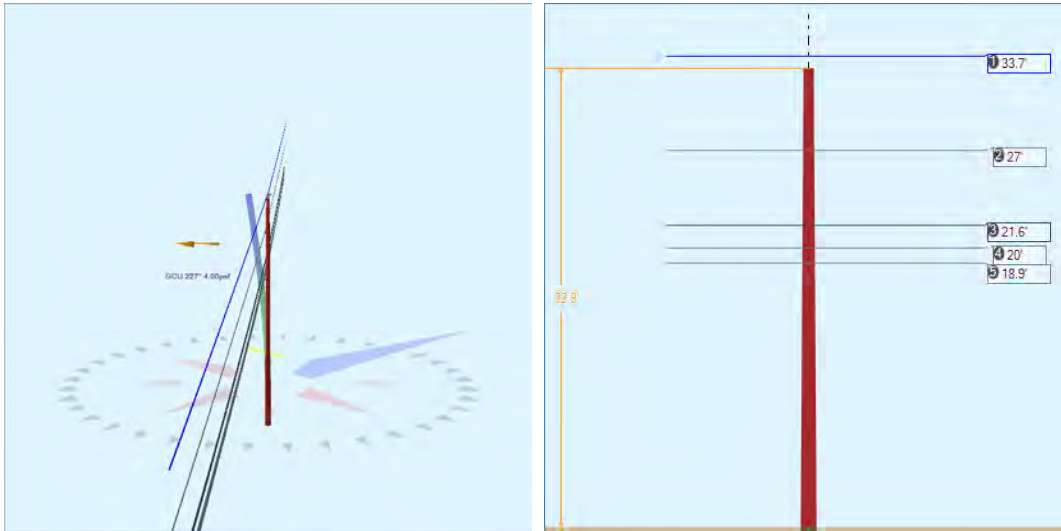
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.78	6.99	1.3300	1.92	0.337	137.1	137.0	137.1	925	-7,654	-57	1,306	-6,405
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.78	6.99	1.3300	1.95	0.337	139.1	316.5	139.1	925	7,799	-58	1,318	9,059
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.80	7.05	1.5000	2.25	0.900	137.1	137.0	137.2	2,000	-15,734	-100	1,357	-14,476
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.80	7.05	1.5000	2.29	0.900	139.1	316.5	139.1	2,000	16,031	-102	1,370	17,299
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.70	7.12	0.6570	1.91	0.190	137.1	137.0	137.1	750	-5,556	-33	739	-4,849
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.70	7.12	0.6570	1.94	0.190	139.1	316.5	139.1	750	5,661	-34	746	6,373
		COMMUNICATION													
Totals:											547	-383	6,838	7,002	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	28.99	20.93	220.0	220.0	335.00	34.00	--	22.00	--	944	1,000	1,944
Totals:											944	1,000	1,944	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.42	0.00	0.0	0.0	13.00	9.00	10.50	0	148	148	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.53	0.00	137.0	137.0	2.00	3.00	3.19	-1	12	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.53	0.00	316.5	316.5	2.00	3.00	3.19	1	12	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.73	0.00	316.5	316.5	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.96	0.00	316.5	316.5	2.00	3.00	3.19	1	11	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.78	0.00	46.7	136.7	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.80	0.00	46.7	136.7	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.70	0.00	46.7	136.7	5.00	3.00	0.00	-5	0	-5	
Totals:											-13	193	180

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.07	33.22	10.58	13.69	7.32	11.39	1.60e+6	60.00	57.00	33.42	35,533	356.58	10.20

Pole Num:	51W - 73024-35299	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.18	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.55	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.073120 Deg	Longitude:	-84.454190 Deg	Elevation:	880.972009362923		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	227.0
Groundline	0.0	227.0
Vertical	17.5	227.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,990	227.3
Groundline	17,990	227.3
GL Allowable	80,614	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	161	20.1	5,031	28.0	6.2	422	146	1	423	6.2
Comms	456	56.9	9,741	54.2	12.1	817	726	7	824	12.1
Pole	178	22.3	3,033	16.9	3.8	254	1,799	18	272	4.0
Insulators	5	0.6	185	1.0	0.2	16	57	1	16	0.2
Pole Load	801	100.0	17,990	100.0	22.3	1,508	2,728	27	1,535	22.6
Pole Reserve Capacity			62,624		77.7	5,292			5,265	77.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	166	20.8	5,199	28.9	6.5	436	175	2	438	6.4
Unknown, COMMUNICATION	456	56.9	9,758	54.2	12.1	818	754	7	825	12.1
Pole	178	22.3	3,033	16.9	3.8	254	1,799	18	272	4.0
Totals:	801	100.0	17,990	100.0	22.3	1,508	2,728	27	1,535	22.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.70	0.00	0.3250	0.33	0.107	141.2	137.8	141.2	1,684	461	0	1,145	1,606
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.70	0.00	0.3250	0.31	0.107	137.1	317.0	137.1	1,684	332	0	1,112	1,444
Neutral	#4 COPPER SOLID KU, UTILITY	26.95	6.52	0.2043	0.45	0.126	141.2	137.8	141.2	982	215	19	782	1,016
Neutral	#4 COPPER SOLID KU, UTILITY	26.95	6.52	0.2043	0.42	0.126	137.1	317.0	137.1	982	155	19	759	933
										Totals:	1,162	38	3,798	4,999

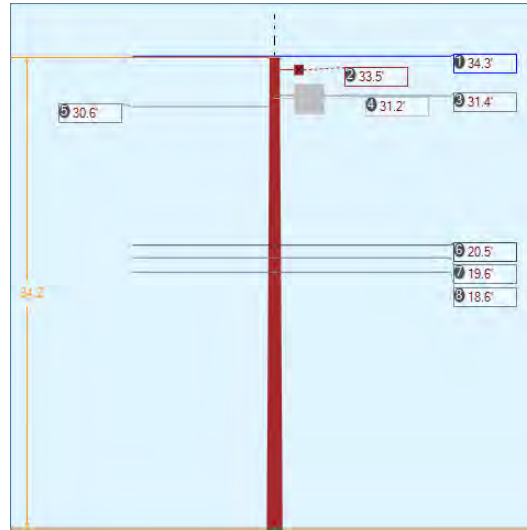
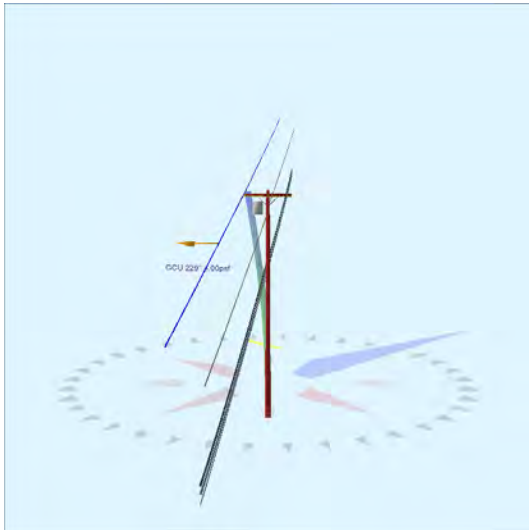
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.59	6.84	1.3300	1.99	0.337	141.2	137.8	141.2	925	162	63	1,627	1,852
CATV	CATV 1.0 Unknown, COMMUNICATION	21.59	6.84	1.3300	1.92	0.337	137.1	317.0	137.1	925	117	62	1,580	1,759
Telco	TELE 1.5 Unknown, COMMUNICATION	19.99	6.94	1.5000	2.34	0.900	141.2	137.8	141.2	2,000	324	112	1,646	2,082
Telco	TELE 1.5 Unknown, COMMUNICATION	19.99	6.94	1.5000	2.25	0.900	137.1	317.0	137.2	2,000	234	109	1,599	1,941
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) Unknown, COMMUNICATION	18.90	7.01	0.6570	1.98	0.190	141.2	137.8	141.2	750	115	37	900	1,052

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.90	7.01	0.6570	1.91	0.190	137.1	317.0	137.1	750	83	36	874	993
Totals:											1,035	419	8,226	9,679	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.82	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.95	0.00	227.4	137.4	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	21.59	0.00	227.4	137.4	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.99	0.00	227.4	137.4	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.90	0.00	227.4	137.4	5.00	3.00	0.00	6	0	6
Totals:										19	165	184

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.50	32.82	10.62	11.56	7.32	11.32	1.60e+6	60.00	57.00	32.82	47,440	470.35	17.24

Pole Num:	52W - 73126-35187	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.80	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.08	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.072841 Deg	Longitude:	-84.453851 Deg	Elevation:	884.762238681781		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.4	0.0
Groundline	21.4	0.0
Vertical	10.7	21.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,638	229.9
Groundline	17,638	229.9
GL Allowable	84,239	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	125	17.2	4,378	24.8	5.2	354	131	1	356	5.2
Comms	382	52.6	7,883	44.7	9.4	638	650	6	644	9.5
PowerEquipments	28	3.8	1,952	11.1	2.3	158	636	6	164	2.4
Pole	188	25.8	3,255	18.5	3.9	263	1,910	18	282	4.1
Crossarms	1	0.2	40	0.2	0.1	3	95	1	4	0.1
Insulators	2	0.3	131	0.7	0.2	11	48	0	11	0.2
Pole Load	726	100.0	17,638	100.0	20.9	1,427	3,470	34	1,461	21.5
Pole Reserve Capacity			66,601		79.1	5,373			5,339	78.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	155	21.4	6,444	36.5	7.7	522	786	8	529	7.8
Unknown, COMMUNICATION	382	52.6	7,900	44.8	9.4	639	679	7	646	9.5
Pole	188	25.8	3,255	18.5	3.9	263	1,910	18	282	4.1
<Undefined>	1	0.2	40	0.2	0.1	3	95	1	4	0.1
Totals:	726	100.0	17,638	100.0	20.9	1,427	3,470	34	1,461	21.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.30	45.33	0.3250	0.20	0.107	108.2	138.1	108.2	1,684	-1,835	109	892	-833
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.30	45.33	0.3250	0.33	0.107	141.2	317.8	141.2	1,684	2,137	143	1,165	3,445
Neutral	#4 COPPER SOLID	KU, UTILITY	31.41	6.33	0.2043	0.45	0.126	141.2	317.8	141.2	982	1,141	1	910	2,052
Neutral	#4 COPPER SOLID	KU, UTILITY	30.62	6.38	0.2043	0.26	0.126	108.2	138.1	108.2	982	-955	0	680	-275
										Totals:	489	253	3,647	4,389	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.53	6.99	1.3300	1.45	0.337	108.2	138.1	108.2	925	-603	50	1,184	631
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.53	6.99	1.3300	1.99	0.337	141.2	317.8	141.2	925	702	65	1,546	2,313
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.62	7.05	1.5000	1.68	0.900	108.2	138.1	108.2	2,000	-1,246	87	1,237	78
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.62	7.05	1.5000	2.34	0.900	141.2	317.8	141.2	2,000	1,451	114	1,615	3,180
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.58	7.11	0.6570	1.44	0.190	108.2	138.1	108.2	750	-442	29	678	264
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.58	7.11	0.6570	1.98	0.190	141.2	317.8	141.2	750	515	37	884	1,437
		COMMUNICATION													
Totals:											378	381	7,144	7,903	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	31.21	20.84	220.0	220.0	335.00	26.00	--	22.00	--	1,089	868	1,957
Totals:											1,089	868	1,957	

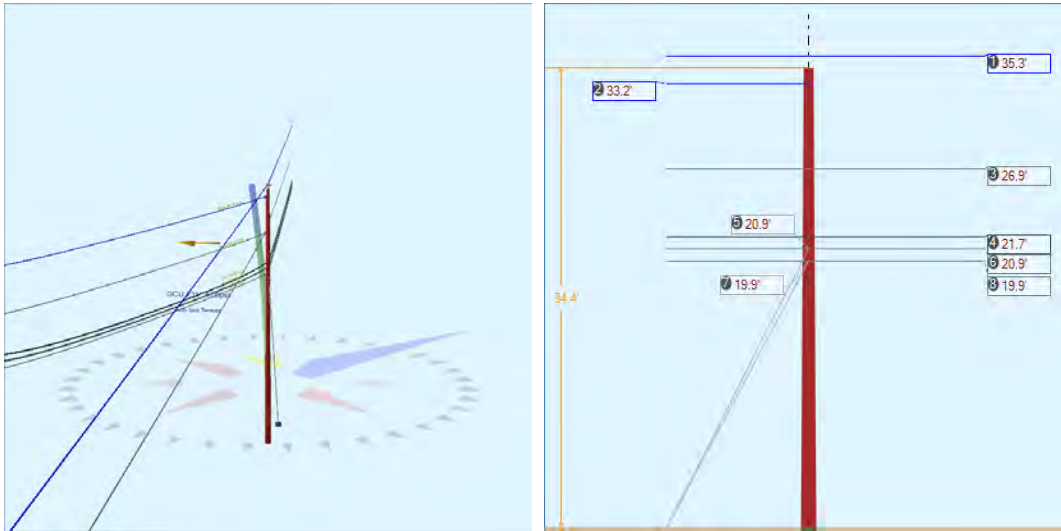
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		33.49	5.45	138.1	138.1	50.00	4.50	3.50	96.00	-1	41	40
Totals:											-1	41	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.67	45.00	221.2	0.0	6.00	3.50	7.50	43	43	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.41	0.00	317.8	317.8	2.00	3.00	3.19	0	15	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.62	0.00	138.1	138.1	2.00	3.00	3.19	0	14	14
Bolt	Three Bolt	Unknown, COMMUNICATION	20.53	0.00	227.9	137.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.62	0.00	227.9	137.9	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	18.58	0.00	227.9	137.9	5.00	3.00	0.00	6	0	6
Totals:										59	72	131

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.20	33.37	10.62	14.01	7.32	11.49	1.60e+6	60.00	57.00	34.20	32,402	324.32	9.35

Pole Num:	53W - 73232-35080	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	10.57	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.80	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.072630 Deg	Longitude:	-84.453598 Deg	Elevation:	892.911024398048		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.3	0.0 231.2
Groundline	32.3	0.0 231.2
Vertical	2.3	19.6 310.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,716	234.9 231.2
Groundline	25,716	234.9 231.2
GL Allowable	82,324	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.9	130.8		21.5	231.2	22.1	280.0
? EHS 1/4 (Down)			20.9	36.3	231.2	41.1	280.0
? EHS 1/4 (Down)			20.0	35.6	231.2	40.2	280.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 234.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	464	44.6	14,106	54.9	17.1	1,202	221	2	1,204	17.7
Comms	1,147	110.2	23,294	90.6	28.3	1,985	467	5	1,990	29.3
GuyBraces	-765	-73.4	-15,126	-58.8	-18.4	-1,289	4,348	43	-1,247	-18.3
Pole	188	18.0	3,188	12.4	3.9	272	1,904	19	290	4.3
Insulators	7	0.7	254	1.0	0.3	22	91	1	23	0.3
Pole Load	1,041	100.0	25,716	100.0	31.2	2,192	7,032	69	2,261	33.2
Pole Reserve Capacity			56,608		68.8	4,608			4,539	66.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 234.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	471	45.3	14,353	55.8	17.4	1,223	255	3	1,226	18.0
Unknown, COMMUNICATION	382	36.7	8,175	31.8	9.9	697	4,872	48	745	10.9
Pole	188	18.0	3,188	12.4	3.9	272	1,904	19	290	4.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,041	100.0	25,716	100.0	31.2	2,192	7,032	69	2,261	33.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	0.00	0.3250	0.95	0.107	242.3	140.7	242.3	1,684	-5,725	0	2,053	-3,672
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.30	0.00	0.3250	0.20	0.107	108.2	318.1	108.2	1,684	9,217	0	911	10,128
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.23	16.48	0.3250	0.08	0.107	71.0	163.5	71.0	150	2,062	2	498	2,562
Neutral	#4 COPPER SOLID KU, UTILITY	26.86	6.61	0.2043	1.30	0.126	242.3	140.7	242.3	982	-2,539	31	1,333	-1,175
Neutral	#4 COPPER SOLID KU, UTILITY	26.86	6.61	0.2043	0.11	0.126	71.0	163.5	71.0	150	1,667	9	344	2,019
Neutral	#4 COPPER SOLID KU, UTILITY	26.86	6.61	0.2043	0.26	0.126	108.2	318.1	108.2	982	4,088	14	592	4,693
Totals:										8,769	55	5,731	14,554	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.75	6.91	1.3300	0.90	0.337	71.0	163.5	71.1	150	1,349	10	723	2,083
CATV	CATV 1.0 Unknown, COMMUNICATION	21.75	6.91	1.3300	1.45	0.337	108.2	318.1	108.2	925	3,118	6	1,245	4,368
Telco	TELE 1.5 Unknown, COMMUNICATION	20.87	6.96	1.5000	1.03	0.900	71.0	163.5	71.0	500	4,317	18	758	5,093
Telco	TELE 1.5 Unknown, COMMUNICATION	20.87	6.96	1.5000	1.68	0.900	108.2	318.1	108.2	2,000	6,469	10	1,305	7,785
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) Unknown, COMMUNICATION	19.95	7.02	0.6570	0.88	0.190	71.0	163.5	71.0	150	1,238	6	419	1,663
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) Unknown, COMMUNICATION	19.95	7.02	0.6570	1.44	0.190	108.2	318.1	108.2	750	2,318	3	722	3,044
Totals:											18,810	54	5,172	24,035

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	34.43	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.23	0.00	163.5	163.5	3.00	3.80	12.75	2	78	81	
Spool	Spool Insulator - 25 kV KU, UTILITY	26.86	0.00	209.4	119.4	2.00	3.00	3.19	2	12	14	
Bolt	Single Bolt Unknown, COMMUNICATION	21.75	0.00	163.5	253.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	21.75	0.00	318.1	318.1	5.00	3.00	0.00	1	0	1	
Bolt	Single Bolt Unknown, COMMUNICATION	20.87	0.00	163.5	253.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	20.87	0.00	318.1	318.1	5.00	3.00	0.00	1	0	1	
Bolt	Single Bolt Unknown, COMMUNICATION	19.95	0.00	163.5	253.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt Unknown, COMMUNICATION	19.95	0.00	318.1	318.1	5.00	3.00	0.00	1	0	1	
Totals:										12	250	262

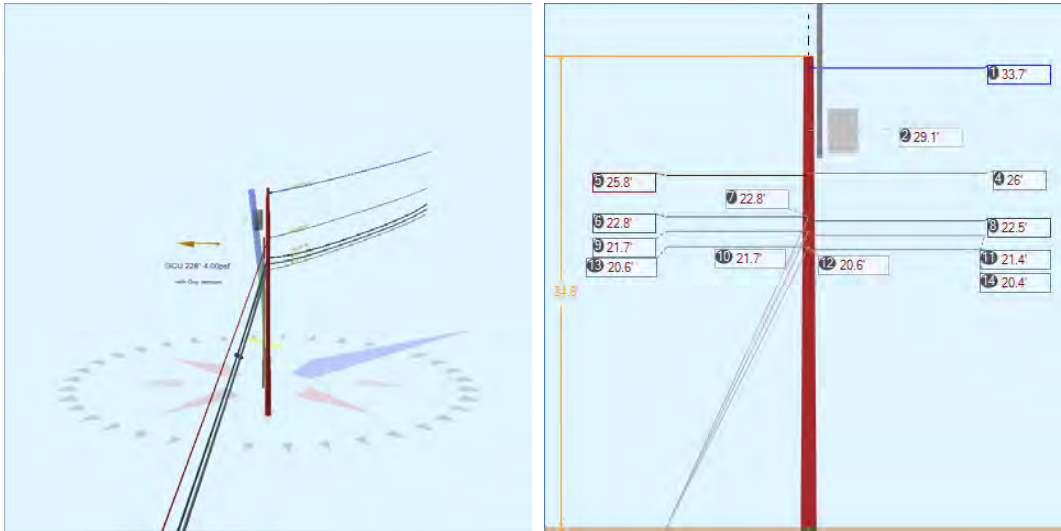
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Unknown, COMMUNICATION	20.87	0.00	22.89	0.25	75.00	130.8	42.2	0.121	29.20	0.90
EHS 1/4	Down	Unknown, COMMUNICATION	19.95	0.00	22.89	0.25	75.00	130.8	41.0	0.121	28.58	0.86

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,457	2,234	2,173	1,461	1,609	-392	-7,975
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,404	2,185	2,132	1,397	1,610	-392	-7,632
Totals:										2,858	3,219	-784	-15,607

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	22.89	130.8	20,000	1.00	20,000	4,418	4,305	22.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.65	33.06	10.63	11.24	7.32	11.40	1.60e+6	60.00	57.00	34.43	302,240	3057.30	43.48

Pole Num:	54W - 73232-24995	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.42	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.22	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.072427 Deg	Longitude:	-84.453544 Deg	Elevation:	890.040804600981		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.3	0.0 227.7
Groundline	44.3	0.0 227.7
Vertical	3.9	21.2 119.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	36,592	202.9 227.7
Groundline	36,592	202.9 227.7
GL Allowable	85,261	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.2	298.9		9.6	227.7	11.7	90.0
? EHS 1/4 (Down)			22.8	32.2	227.7	43.1	90.0
? Single Helix Anchor	19.4	299.6		20.1	227.7	22.6	100.0
? EHS 1/4 (Down)			21.7	34.2	227.7	42.4	100.0
? EHS 1/4 (Down)			20.6	32.8	227.7	40.5	100.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 202.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	289	17.3	6,199	16.9	7.3	504	114	1	505	7.4
Comms	1,562	93.4	33,642	91.9	39.5	2,735	648	6	2,741	40.3
GuyBraces	-432	-25.8	-9,177	-25.1	-10.8	-746	6,626	63	-683	-10.0
PowerEquipments	38	2.3	2,141	5.9	2.5	174	694	7	181	2.7
Pole	173	10.3	2,976	8.1	3.5	242	1,942	19	260	3.8
Risers	41	2.5	731	2.0	0.9	60	50	0	60	0.9
Insulators	3	0.2	80	0.2	0.1	7	70	1	7	0.1
Pole Load	1,673	100.0	36,592	100.0	42.9	2,975	10,143	97	3,072	45.2
Pole Reserve Capacity			48,669		57.1	3,825			3,728	54.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 202.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	371	22.2	9,156	25.0	10.7	744	870	8	753	11.1
Unknown, COMMUNICATION	1,130	67.5	24,460	66.9	28.7	1,989	7,331	70	2,059	30.3
Pole	173	10.3	2,976	8.1	3.5	242	1,942	19	260	3.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,673	100.0	36,592	100.0	42.9	2,975	10,143	97	3,072	45.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.71	16.46	0.3250	0.08	0.107	71.0	343.5	71.0	150	-5,082	-5	329	-4,757
Neutral	#4 COPPER SOLID	KU, UTILITY	25.99	6.68	0.2043	0.11	0.126	71.0	343.5	71.0	150	-3,918	-8	216	-3,709
Secondary	TRIPLEX 4 AWG	KU, UTILITY	25.81	6.69	0.6800	2.08	0.164	177.7	138.6	177.7	916	13,345	19	1,421	14,785
Totals:											4,345	6	1,967	6,318	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.78	6.88	1.3300	2.67	0.337	177.7	138.6	177.7	925	11,893	35	1,946	13,873
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.49	6.90	1.3300	0.90	0.337	71.0	343.5	71.1	150	-3,391	-25	487	-2,929
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.72	6.94	1.5000	3.16	0.900	177.7	138.6	177.7	2,000	24,520	61	2,028	26,609
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.41	6.96	1.5000	1.03	0.900	71.0	343.5	71.0	500	-10,760	-44	506	-10,297
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.58	7.01	0.6570	2.63	0.190	177.7	138.6	177.7	750	8,711	20	1,111	9,843
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.37	7.02	0.6570	0.88	0.190	71.0	343.5	71.0	150	-3,071	-14	279	-2,807
		COMMUNICATION													
Totals:											27,903	33	6,356	34,292	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.14	20.99	230.0	230.0	365.00	39.00	--	22.00	--	1,080	1,103	2,182
Totals:											1,080	1,103	2,182	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 180.0°	Riser	KU, UTILITY	26.29	5.85	180.0	180.0	26.29	315.47	4.00	4.00	315.47	24	722	746
Totals:											24	722	746	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.71	0.00	343.5	343.5	3.00	3.80	12.75	-6	72	66
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.99	0.00	343.5	343.5	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.81	0.00	138.6	138.6	2.00	3.00	3.19	1	11	12
Bolt	Single Bolt	Unknown, COMMUNICATION	22.78	0.00	138.6	228.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	22.49	0.00	343.5	433.5	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	21.72	0.00	138.6	228.6	5.00	3.00	0.00	2	0	2

Bolt	Single Bolt	Unknown, COMMUNICATION	21.41	0.00	343.5	433.5	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	20.58	0.00	138.6	228.6	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	20.37	0.00	343.5	433.5	5.00	3.00	0.00	-4	0	-4
Totals:										-12	94	82

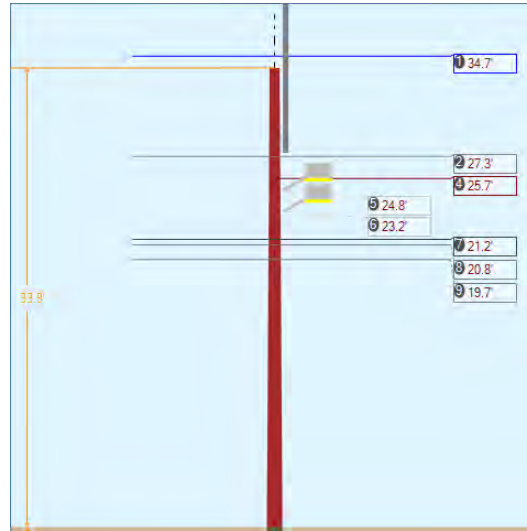
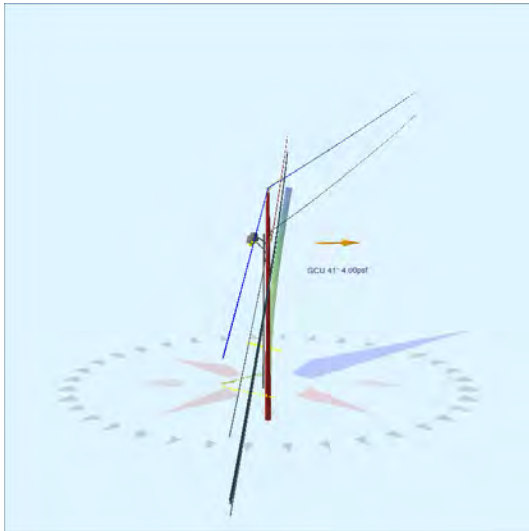
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Unknown, COMMUNICATION	22.78	0.00	21.23	0.25	75.00	298.9	46.9	0.121	29.39	0.80
EHS 1/4	Down	Unknown, COMMUNICATION	21.72	0.00	19.36	0.25	75.00	299.6	48.1	0.121	27.35	0.79
EHS 1/4	Down	Unknown, COMMUNICATION	20.58	0.00	19.36	0.25	75.00	299.6	46.6	0.121	26.50	0.74

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,577	2,343	1,927	1,406	1,318	-139	-2,979
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,540	2,309	2,047	1,524	1,366	-159	-3,289
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,422	2,202	1,966	1,428	1,351	-158	-3,086
Totals:										4,358	4,035	-456	-9,354

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.23	298.9	20,000	1.00	20,000	2,343	1,927	11.7
Single Helix Anchor			18.00	19.36	299.6	20,000	1.00	20,000	4,511	4,012	22.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.25	33.36	10.67	13.91	7.32	11.54	1.60e+6	60.00	57.00	34.58	262,421	2600.90	25.64

Pole Num:	55W - 73389-34841	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.22	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.92	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.072065 Deg	Longitude:	-84.453130 Deg	Elevation:	896.420535263901		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	49.4	0.0
Groundline	49.4	0.0
Vertical	7.5	18.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	40,687	13.9
Groundline	40,687	13.9
GL Allowable	83,137	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 13.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,020	64.0	29,213	71.8	35.1	2,385	263	3	2,387	35.1
Comms	333	20.9	7,266	17.9	8.7	593	760	7	600	8.8
Pole	164	10.3	2,829	7.0	3.4	231	1,877	18	249	3.7
Streetlights	35	2.2	572	1.4	0.7	47	171	2	48	0.7
Risers	37	2.3	629	1.6	0.8	51	51	0	52	0.8
Insulators	5	0.3	179	0.4	0.2	15	61	1	15	0.2
Pole Load	1,594	100.0	40,687	100.0	48.9	3,321	3,182	31	3,352	49.3
Pole Reserve Capacity			42,450		51.1	3,479			3,448	50.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 13.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,097	68.8	30,579	75.2	36.8	2,496	518	5	2,501	36.8
Unknown, COMMUNICATION	333	20.9	7,280	17.9	8.8	594	788	8	602	8.9
Pole	164	10.3	2,829	7.0	3.4	231	1,877	18	249	3.7
Totals:	1,594	100.0	40,687	100.0	48.9	3,321	3,182	31	3,352	49.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.66	0.00	0.3250	0.22	0.107	113.8	137.0	113.8	1,684	-31,903	0	791	-31,112
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.66	0.00	0.3250	0.92	0.107	242.3	326.7	242.3	1,684	39,686	0	1,429	41,116
Neutral	#4 COPPER SOLID	KU, UTILITY	27.28	6.56	0.2043	0.29	0.126	113.8	137.0	113.8	982	-14,636	12	531	-14,093
Neutral	#4 COPPER SOLID	KU, UTILITY	27.28	6.56	0.2043	1.29	0.126	242.3	326.7	242.3	982	18,207	26	960	19,194
Secondary	TRIPLEX 4 AWG	KU, UTILITY	25.65	6.66	0.6800	2.08	0.164	177.7	316.6	177.7	916	12,701	35	1,314	14,050
										Totals:	24,055	74	5,025	29,155	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.18	6.93	1.3300	1.54	0.337	113.8	137.0	113.8	925	-10,703	43	1,072	-9,588
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.18	6.93	1.3300	2.67	0.337	177.7	316.6	177.7	925	10,588	68	1,682	12,338
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.78	6.95	1.5000	1.79	0.900	113.8	137.0	113.8	2,000	-22,711	76	1,149	-21,485
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.78	6.95	1.5000	3.16	0.900	177.7	316.6	177.7	2,000	22,467	118	1,804	24,389
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.70	7.02	0.6570	1.52	0.190	113.8	137.0	113.8	750	-8,075	25	630	-7,419
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.70	7.02	0.6570	2.63	0.190	177.7	316.6	177.7	750	7,988	39	990	9,017
		COMMUNICATION													
Totals:											-445	369	7,327	7,251	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	24.80	4.21	170.0	170.0	45.00	24.00	20.00	3.00	36.00	-218	437	219
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.24	4.30	270.0	270.0	45.00	24.00	20.00	3.00	36.00	-57	409	352
Totals:											-275	846	571	

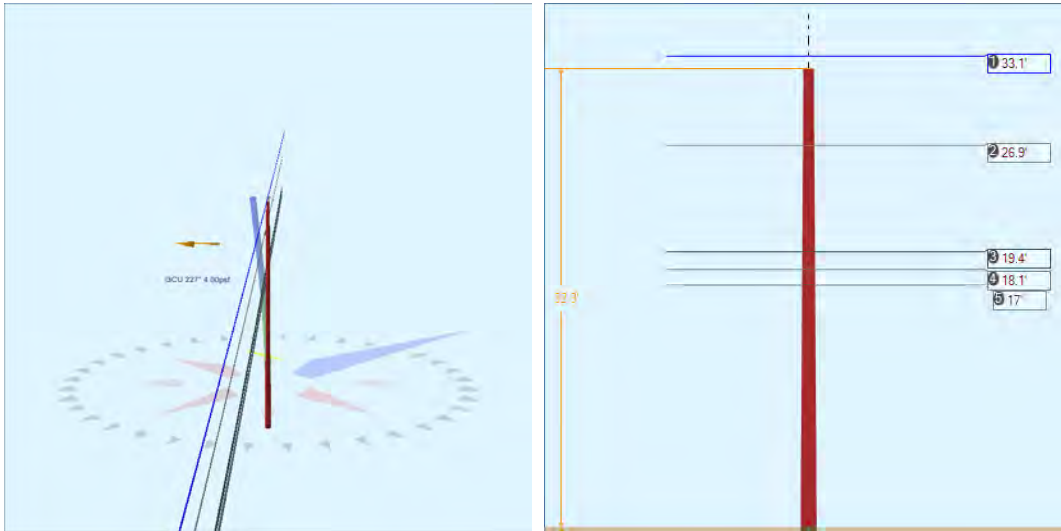
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 180.0°	Riser	KU, UTILITY	26.78	5.85	180.0	180.0	26.78	321.31	4.00	4.00	321.31	-25	653	628
Totals:											-25	653	628	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.78	0.00	0.0	0.0	13.00	9.00	10.50	0	140	140
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.28	0.00	51.8	321.8	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.65	0.00	48.6	318.6	2.00	3.00	3.19	2	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.18	0.00	47.0	137.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.78	0.00	47.0	137.0	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	19.70	0.00	47.0	137.0	5.00	3.00	0.00	5	0	5
Totals:										17	161	179

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.71	32.99	10.68	12.76	7.32	11.44	1.60e+6	60.00	57.00	33.78	42,560	424.33	13.33

Pole Num:	56W - 73490-34744	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.73	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.34	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071836 Deg	Longitude:	-84.452853 Deg	Elevation:	902.682868141552		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	227.0
Groundline	0.0	227.0
Vertical	16.8	227.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	227.1	227.0
Groundline	227.1	227.0
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	127	17.8	3,903	26.2	4.9	333	144	1	334	4.9
Comms	405	56.9	7,889	52.9	10.0	673	714	7	680	10.0
Pole	175	24.6	2,926	19.6	3.7	250	1,755	18	267	3.9
Insulators	5	0.7	183	1.2	0.2	16	57	1	16	0.2
Pole Load	711	100.0	14,901	100.0	18.8	1,271	2,670	27	1,297	19.1
Pole Reserve Capacity			64,278		81.2	5,529			5,503	80.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	132	18.5	4,069	27.3	5.1	347	172	2	349	5.1
Unknown, COMMUNICATION	405	56.9	7,906	53.1	10.0	674	742	7	682	10.0
Pole	175	24.6	2,926	19.6	3.7	250	1,755	18	267	3.9
Totals:	711	100.0	14,901	100.0	18.8	1,271	2,670	27	1,297	19.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.14	0.00	0.3250	0.42	0.107	159.9	137.1	159.9	1,684	46	0	1,276	1,322
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.14	0.00	0.3250	0.22	0.107	113.8	317.0	113.8	1,684	51	0	908	959
Neutral	#4 COPPER SOLID KU, UTILITY	26.86	6.49	0.2043	0.57	0.126	159.9	137.1	159.9	982	22	22	883	926
Neutral	#4 COPPER SOLID KU, UTILITY	26.86	6.49	0.2043	0.29	0.126	113.8	317.0	113.8	982	24	16	628	668
										Totals:	143	38	3,694	3,875

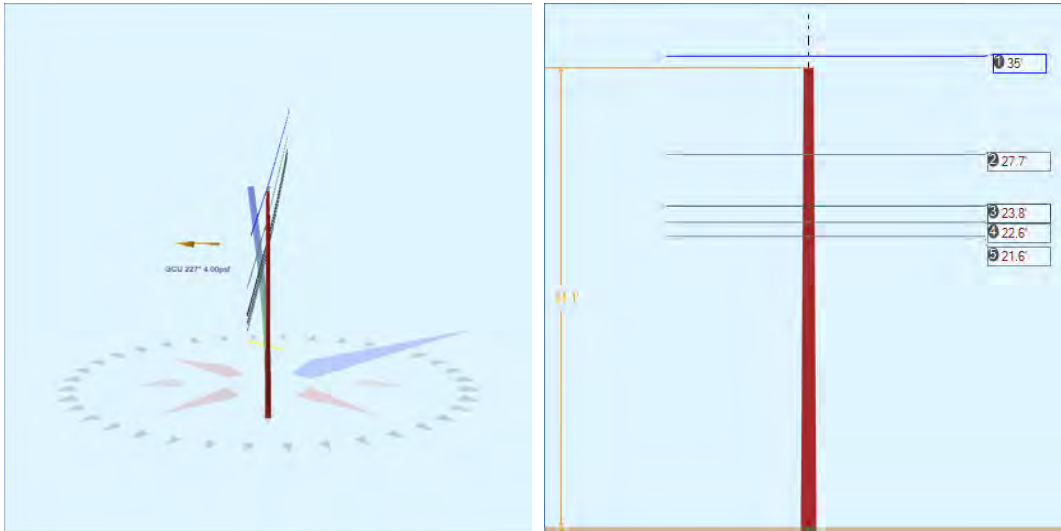
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	19.38	6.95	1.3300	2.33	0.337	159.9	137.1	160.0	925	15	73	1,654	1,742
CATV	CATV 1.0 Unknown, COMMUNICATION	19.38	6.95	1.3300	1.54	0.337	113.8	317.0	113.8	925	16	52	1,177	1,245
Telco	TELE 1.5 Unknown, COMMUNICATION	18.13	7.02	1.5000	2.75	0.900	159.9	137.1	160.0	2,000	30	128	1,692	1,850
Telco	TELE 1.5 Unknown, COMMUNICATION	18.13	7.02	1.5000	1.79	0.900	113.8	317.0	113.8	2,000	33	91	1,203	1,328
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) Unknown, COMMUNICATION	17.04	7.09	0.6570	2.30	0.190	159.9	137.1	160.0	750	11	42	919	972

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	17.04	7.09	0.6570	1.52	0.190	113.8	317.0	113.8	750	12	30	654	696
Totals:											117	417	7,299	7,833	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.27	0.00	0.0	0.0	13.00	9.00	10.50	0	150	150
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.86	0.00	227.1	137.1	2.00	3.00	3.19	2	12	15
Bolt	Three Bolt	Unknown, COMMUNICATION	19.38	0.00	227.1	137.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.13	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.04	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6
Totals:										19	163	181

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.75	32.72	10.58	11.22	7.32	11.25	1.60e+6	60.00	57.00	32.27	51,112	513.41	19.23

Pole Num:	57W - 73559-34679	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.92	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.03	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071521 Deg	Longitude:	-84.452481 Deg	Elevation:	886.608902961217		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	227.0
Groundline	0.0	227.0
Vertical	18.0	227.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	227.2	227.0
Groundline	227.2	227.0
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	117	18.1	3,761	24.6	4.5	303	110	1	304	4.5
Comms	337	52.2	8,057	52.8	9.6	648	547	5	654	9.6
Pole	187	28.9	3,262	21.4	3.9	263	1,901	18	281	4.1
Insulators	5	0.8	191	1.3	0.2	15	57	1	16	0.2
Pole Load	646	100.0	15,272	100.0	18.2	1,229	2,614	25	1,254	18.4
Pole Reserve Capacity			68,649		81.8	5,571			5,546	81.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	122	18.9	3,936	25.8	4.7	317	139	1	318	4.7
Unknown, COMMUNICATION	337	52.2	8,074	52.9	9.6	650	575	6	655	9.6
Pole	187	28.9	3,262	21.4	3.9	263	1,901	18	281	4.1
Totals:	646	100.0	15,272	100.0	18.2	1,229	2,614	25	1,254	18.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.95	0.00	0.3250	0.04	0.107	49.7	137.6	49.7	1,684	421	0	418	839
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.95	0.00	0.3250	0.42	0.107	159.9	317.1	159.9	1,684	93	0	1,346	1,439
Neutral	#4 COPPER SOLID KU, UTILITY	27.65	6.55	0.2043	0.06	0.126	49.7	137.6	49.7	982	194	7	282	483
Neutral	#4 COPPER SOLID KU, UTILITY	27.65	6.55	0.2043	0.57	0.126	159.9	317.1	159.9	982	43	22	908	974
										Totals:	751	29	2,955	3,734

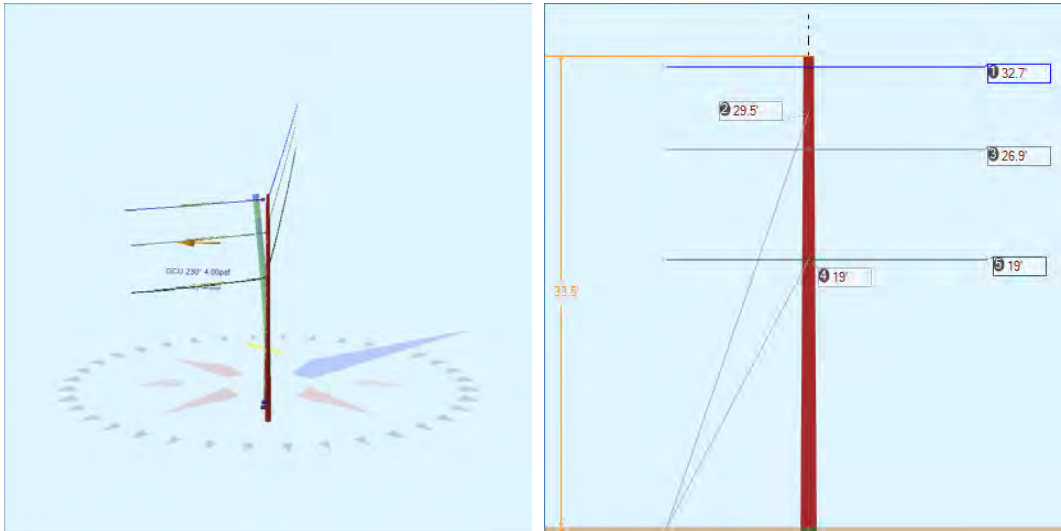
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	23.82	6.78	1.3300	0.62	0.337	49.7	137.6	49.7	925	157	22	632	811
CATV	CATV 1.0 Unknown, COMMUNICATION	23.82	6.78	1.3300	2.33	0.337	159.9	317.1	160.0	925	35	71	2,034	2,140
Telco	TELE 1.5 Unknown, COMMUNICATION	22.63	6.86	1.5000	0.70	0.900	49.7	137.6	49.7	2,000	323	39	656	1,018
Telco	TELE 1.5 Unknown, COMMUNICATION	22.63	6.86	1.5000	2.75	0.900	159.9	317.1	160.0	2,000	72	125	2,111	2,308
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) Unknown, COMMUNICATION	21.59	6.92	0.6570	0.60	0.190	49.7	137.6	49.7	750	116	13	362	491

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.59	6.92	0.6570	2.30	0.190	159.9	317.1	160.0	750	26	41	1,165	1,232
Totals:												729	312	6,960	8,000

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.08	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.65	0.00	227.3	137.3	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	23.82	0.00	227.3	137.3	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.63	0.00	227.3	137.3	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.59	0.00	227.3	137.3	5.00	3.00	0.00	5	0	5
Totals:										18	171	190

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.98	32.86	10.75	11.52	7.32	11.47	1.60e+6	60.00	57.00	34.08	47,225	475.31	18.18

Pole Num:	62W - 73669-33890	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.50	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069430 Deg	Longitude:	-84.455520 Deg	Elevation:	901.373554952831		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.4	230.0
Groundline	30.4	230.0
Vertical	9.6	318.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,304	239.4
Groundline	23,304	239.4
GL Allowable	82,378	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.7	138.0		35.3	230.0	35.9	310.0
? EHS 3/8 (Down)			29.5	50.9	230.0	57.0	310.0
? Single Helix Anchor	10.7	138.0		10.8	230.0	11.2	310.0
? EHS 1/4 (Down)			19.0	36.0	230.0	41.3	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 239.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,094	108.1	30,321	130.1	36.8	2,740	122	1	2,741	40.3
Comms	503	49.7	8,825	37.9	10.7	798	182	2	799	11.8
GuyBraces	-770	-76.1	-18,818	-80.8	-22.8	-1,701	12,488	122	-1,578	-23.2
Pole	180	17.8	2,812	12.1	3.4	254	1,853	18	272	4.0
Insulators	5	0.5	164	0.7	0.2	15	25	0	15	0.2
Pole Load	1,012	100.0	23,304	100.0	28.3	2,106	14,670	144	2,250	33.1
Pole Reserve Capacity			59,074		71.7	4,694			4,550	66.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 239.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	529	52.3	15,142	65.0	18.4	1,368	9,781	96	1,464	21.5
Unknown, COMMUNICATION	302	29.9	5,350	23.0	6.5	484	3,036	30	513	7.5
Pole	180	17.8	2,812	12.1	3.4	254	1,853	18	272	4.0
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,012	100.0	23,304	100.0	28.3	2,106	14,670	144	2,250	33.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.73	16.46	0.3250	0.01	0.107	25.1	195.7	25.1	150	4,611	2	77	4,690
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.73	16.46	0.3250	0.70	0.107	206.5	317.5	206.5	1,684	14,835	4	1,589	16,428
Neutral	#4 COPPER SOLID	KU, UTILITY	26.85	6.57	0.2043	0.01	0.126	25.1	195.7	25.1	150	3,782	3	54	3,840
Neutral	#4 COPPER SOLID	KU, UTILITY	26.85	6.57	0.2043	0.95	0.126	206.5	317.5	206.5	982	7,096	27	1,113	8,236
Totals:											30,324	36	2,833	33,193	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.01	7.04	1.3300	0.30	0.337	25.1	195.7	25.1	150	2,678	11	99	2,789
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.01	7.04	1.3300	3.27	0.337	206.5	317.5	206.5	925	4,733	91	2,048	6,872
		COMMUNICATION													
Totals:											7,412	102	2,147	9,661	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.73	0.00	195.7	195.7	3.00	3.80	12.75	6	76	82
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.73	0.00	317.5	317.5	3.00	3.80	12.75	2	76	78
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.85	0.00	256.6	166.6	2.00	3.00	3.19	2	12	14
Bolt	Single Bolt	Unknown, COMMUNICATION	19.01	0.00	256.6	256.6	5.00	3.00	0.00	5	0	5
Totals:										15	164	179

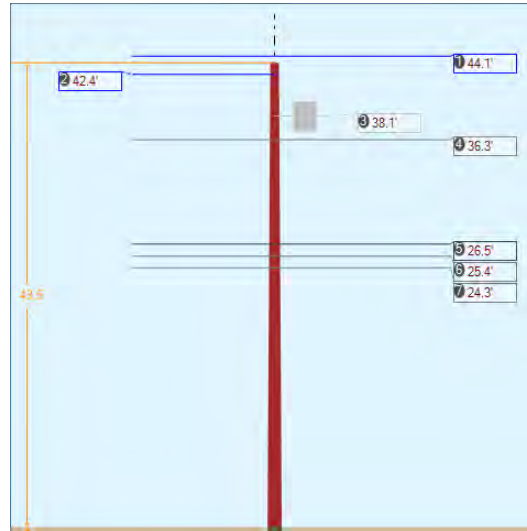
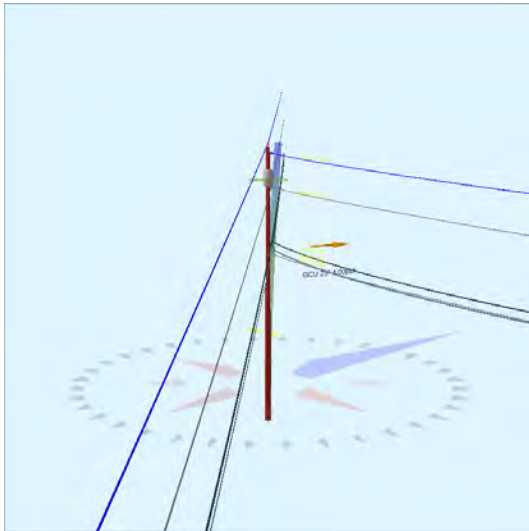
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	29.47	0.00	13.68	0.375	75.00	138.0	64.9	0.273	30.86	1.37
EHS 1/4	Down	Unknown, COMMUNICATION	19.01	0.00	10.74	0.25	75.00	138.0	60.3	0.121	20.15	0.62

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,906	7,187	7,051	6,383	2,995	-594	-16,791
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,470	2,245	2,156	1,873	1,068	-212	-3,810
Totals:										8,257	4,063	-806	-20,601

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	13.68	138.0	20,000	1.00	20,000	7,187	7,051	35.9
Single Helix Anchor		18.00	10.74	138.0	20,000	1.00	20,000	2,245	2,156	11.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.09	34.18	10.31	18.37	7.32	11.40	1.60e+6	60.00	57.00	33.50	152,129	1528.10	10.42

Pole Num:	63W - 72562-34027	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.79	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069853 Deg	Longitude:	-84.456020 Deg	Elevation:	902.868081385479		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	49.1	0.0
Groundline	49.1	0.0
Vertical	11.3	24.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	63,561	357.3
Groundline	63,561	357.3
GL Allowable	130,926	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 357.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	51	2.0	2,096	3.3	1.6	109	232	2	110	1.6
Comms	2,197	86.9	55,650	87.6	42.5	2,887	861	6	2,893	42.5
PowerEquipments	33	1.3	416	0.7	0.3	22	636	5	26	0.4
Pole	244	9.6	5,232	8.2	4.0	271	3,117	22	294	4.3
Insulators	4	0.1	167	0.3	0.1	9	59	0	9	0.1
Pole Load	2,528	100.0	63,561	100.0	48.6	3,297	4,906	35	3,333	49.0
Pole Reserve Capacity			67,365		51.5	3,503			3,467	51.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 357.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	88	3.5	2,668	4.2	2.0	138	889	6	145	2.1
Unknown, COMMUNICATION	2,197	86.9	55,661	87.6	42.5	2,888	899	6	2,894	42.6
Pole	244	9.6	5,232	8.2	4.0	271	3,117	22	294	4.3
Totals:	2,528	100.0	63,561	100.0	48.6	3,297	4,906	35	3,333	49.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	44.08	0.00	0.3250	0.64	0.107	206.5	137.5	206.5	1,684	-57,044	0	1,272	-55,772
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	44.08	0.00	0.3250	0.33	0.107	145.5	316.5	145.5	1,684	56,206	0	923	57,129
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	42.35	16.80	0.3250	0.12	0.107	87.1	97.1	87.1	150	-1,082	-1	843	-240
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	36.26	6.92	0.3250	0.12	0.107	87.1	97.1	87.1	150	-926	9	721	-196
Neutral	#4 COPPER SOLID	KU, UTILITY	36.26	6.92	0.2043	0.92	0.126	206.5	137.5	206.5	982	-27,360	20	893	-26,447
Neutral	#4 COPPER SOLID	KU, UTILITY	36.26	6.92	0.2043	0.46	0.126	145.5	316.5	145.5	982	26,958	14	648	27,620
Totals:											-3,248	41	5,300	2,093	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	26.50	7.52	1.3300	1.13	0.337	87.1	97.1	87.3	150	-677	28	1,169	521
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	26.50	7.52	1.3300	3.25	0.337	206.5	137.5	206.5	925	-18,834	67	1,696	-17,071
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	26.50	7.52	1.3300	2.06	0.337	145.5	316.5	145.6	925	18,558	47	1,230	19,835
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	25.37	7.59	1.5000	1.30	0.900	87.1	97.1	87.3	350	-1,512	-13	1,224	-301
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	25.37	7.59	1.5000	2.42	0.900	145.5	316.5	145.6	2,000	38,411	83	1,287	39,781
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.28	7.66	0.6570	1.11	0.190	87.1	97.1	87.2	150	-620	16	677	74
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.28	7.66	0.6570	3.14	0.190	206.5	137.5	206.5	150	-2,798	39	983	-1,777
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.28	7.66	0.6570	2.03	0.190	145.5	316.5	145.6	750	13,785	27	713	14,525
		COMMUNICATION													
Totals:											46,313	293	8,980	55,586	

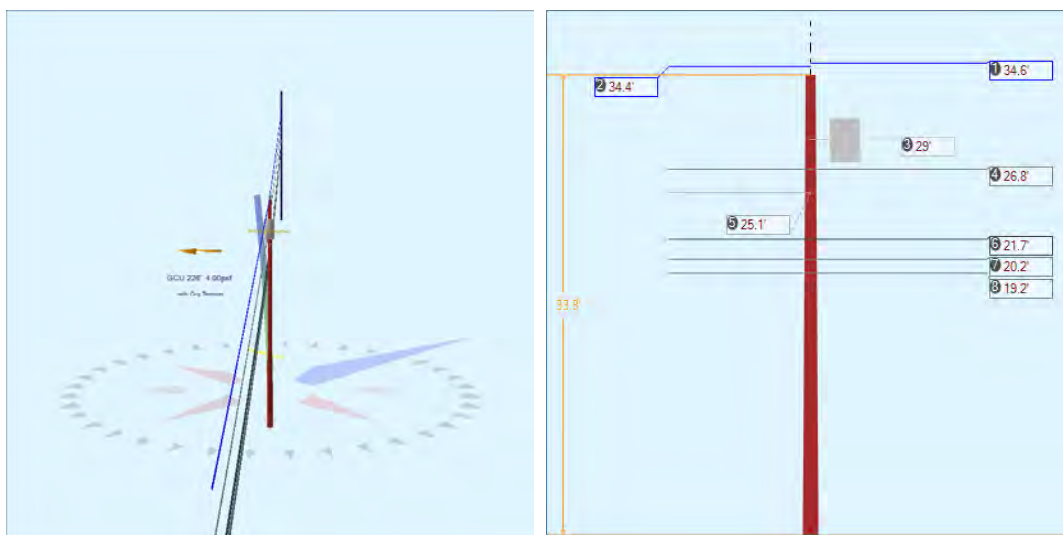
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	38.10	21.31	135.0	135.0	335.00	34.00	--	22.00	--	-836	1,252	416
Totals:											-836	1,252	416	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	43.45	0.00	0.0	0.0	6.00	3.50	7.50	0	50	50
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	42.35	0.00	97.1	97.1	3.00	3.80	12.75	-1	90	89
Spool	Spool Insulator - 25 kV	KU, UTILITY	36.26	0.00	47.0	137.0	2.00	3.00	3.19	1	15	17
Bolt	Three Bolt	Unknown, COMMUNICATION	26.50	0.00	46.5	316.5	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	25.37	0.00	97.1	187.1	5.00	3.00	0.00	-1	0	-1
Bolt	Three Bolt	Unknown, COMMUNICATION	25.37	0.00	46.5	316.5	5.00	3.00	0.00	4	0	4

Bolt	Three Bolt	Unknown, COMMUNICATION	24.28	0.00	46.5	316.5	5.00	3.00	0.00	4	0	4
Totals:										11	156	167

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.54	33.40	12.29	18.09	7.96	13.31	1.60e+6	60.00	57.00	43.45	43,390	434.14	8.85

Pole Num:	64W - 72452-34137	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.24	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.070145 Deg	Longitude:	-84.456370 Deg	Elevation:	911.464849706732		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.6	0.0 226.3
Groundline	28.6	0.0 226.3
Vertical	1.4	20.7 136.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,347	226.8 226.3
Groundline	23,347	226.8 226.3
GL Allowable	83,069	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	196.4	316.0		0.2	226.3	1.0	140.0
? EHS 3/8 (Span/Head)			25.1	0.3	226.3	1.5	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 226.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	183	18.2	5,759	24.7	6.9	470	180	2	471	6.9
Comms	539	53.6	11,615	49.8	14.0	947	891	9	956	14.1
GuyBraces	51	5.0	1,273	5.5	1.5	104	46	0	104	1.5
PowerEquipments	42	4.2	1,283	5.5	1.5	105	694	7	111	1.6
Pole	185	18.4	3,185	13.6	3.8	260	1,875	18	278	4.1
Insulators	6	0.6	233	1.0	0.3	19	68	1	20	0.3
Pole Load	1,005	100.0	23,347	100.0	28.1	1,904	3,753	37	1,941	28.5
Pole Reserve Capacity			59,722		71.9	4,896			4,859	71.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 226.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	281	28.0	8,530	36.5	10.3	696	959	9	705	10.4
Unknown, COMMUNICATION	539	53.6	11,631	49.8	14.0	949	920	9	958	14.1
Pole	185	18.4	3,185	13.6	3.8	260	1,875	18	278	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,005	100.0	23,347	100.0	28.1	1,904	3,753	37	1,941	28.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.63	0.00	0.3250	0.63	0.107	196.4	316.0	196.4	1,684	1,051	0	1,637	2,688
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.38	0.00	0.3250	0.35	0.107	145.5	136.5	145.5	1,684	-386	0	1,205	818
Neutral	#4 COPPER SOLID	KU, UTILITY	26.84	6.58	0.2043	0.48	0.126	145.5	136.5	145.5	982	-176	20	802	647
Neutral	#4 COPPER SOLID	KU, UTILITY	26.84	6.58	0.2043	0.86	0.126	196.4	316.0	196.4	982	475	27	1,083	1,585
Totals:											964	48	4,727	5,738	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.69	6.90	1.3300	2.07	0.337	145.5	136.5	145.6	925	-134	66	1,685	1,617
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.69	6.90	1.3300	3.05	0.337	196.4	316.0	196.4	925	361	89	2,273	2,723
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.22	6.98	1.5000	2.43	0.900	145.5	136.5	145.6	2,000	-270	116	1,716	1,563
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.22	6.98	1.5000	3.63	0.900	196.4	316.0	196.5	2,000	728	157	2,316	3,201
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.20	7.05	0.6570	2.05	0.190	145.5	136.5	145.6	750	-96	38	943	885
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.20	7.05	0.6570	2.99	0.190	196.4	316.0	196.4	750	259	52	1,272	1,583
		COMMUNICATION													
Totals:											850	518	10,206	11,573	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.03	20.95	140.0	140.0	365.00	39.00	--	22.00	--	68	1,211	1,278
Totals:											68	1,211	1,278	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.76	0.00	0.0	0.0	13.00	9.00	10.50	0	157	157
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.76	0.00	0.0	0.0	6.00	3.50	7.50	0	43	43
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.84	0.00	226.2	136.2	2.00	3.00	3.19	2	12	15
Bolt	Three Bolt	Unknown, COMMUNICATION	21.69	0.00	226.2	136.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.22	0.00	226.2	136.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.20	0.00	226.2	136.2	5.00	3.00	0.00	6	0	6
Totals:										19	213	232

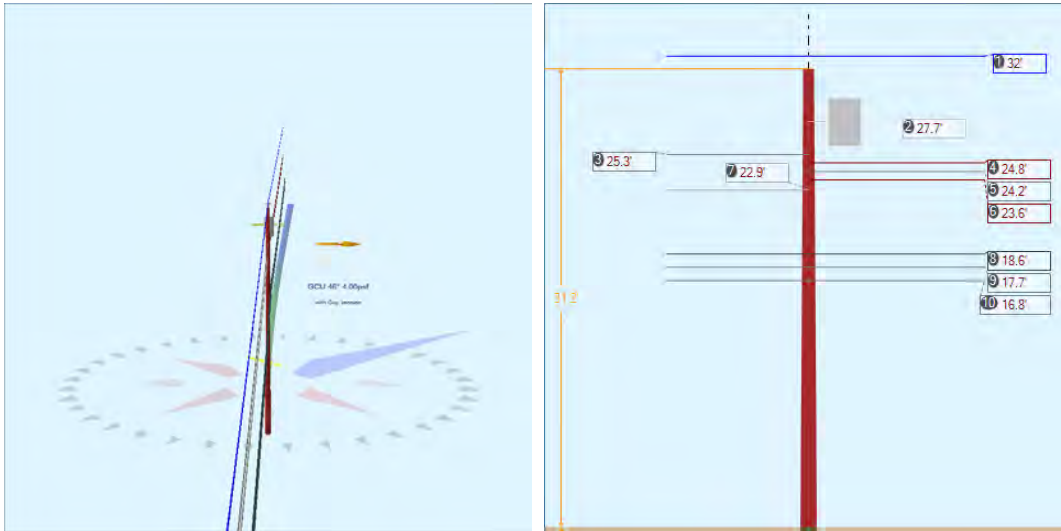
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.10	25.10	196.39	0.375	75.00	316.0	0.0	0.273	194.54	0.04

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	212	193	36	0	36	1	1,269
Totals:									0	36	0	1,269

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	196.39	316.0	20,000	1.00	20,000	193	36	1.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.71	33.31	10.59	8.54	7.32	11.44	1.60e+6	60.00	57.00	33.76	268,461	2680.82	71.43

Pole Num:	65W - 72326-34263	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.070550 Deg	Longitude:	-84.456826 Deg	Elevation:	903.044824012828		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	46.3
Groundline	0.0	46.3
Vertical	19.5	316.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	42.4	46.3
Groundline	42.4	46.3
GL Allowable	76,340	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	196.4	136.0		2.1	46.3	2.9	310.0
? EHS 3/8 (Span/Head)			22.9	3.1	46.3	4.6	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 42.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	285	27.0	7,689	34.3	10.1	683	249	3	685	10.1
Comms	533	50.5	10,019	44.6	13.1	890	868	9	899	13.2
GuyBraces	23	2.2	524	2.3	0.7	47	46	0	47	0.7
PowerEquipments	42	3.9	1,317	5.9	1.7	117	694	7	124	1.8
Pole	167	15.8	2,694	12.0	3.5	239	1,669	17	256	3.8
Insulators	6	0.6	208	0.9	0.3	18	68	1	19	0.3
Pole Load	1,057	100.0	22,449	100.0	29.4	1,994	3,594	37	2,031	29.9
Pole Reserve Capacity			53,891		70.6	4,806			4,769	70.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 42.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	243	23.0	6,663	29.7	8.7	592	296	3	595	8.7
Unknown, COMMUNICATION	605	57.3	11,776	52.5	15.4	1,046	935	10	1,056	15.5
<Undefined>	42	3.9	1,317	5.9	1.7	117	694	7	124	1.8
Pole	167	15.8	2,694	12.0	3.5	239	1,669	17	256	3.8
Totals:	1,057	100.0	22,449	100.0	29.4	1,994	3,594	37	2,031	29.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.03	0.00	0.3250	0.63	0.107	196.4	136.0	196.4	1,684	-4,453	0	1,511	-2,942
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.03	0.00	0.3250	0.31	0.107	136.7	316.6	136.7	1,684	5,185	0	1,051	6,236
Neutral	#4 COPPER SOLID	KU, UTILITY	25.34	6.51	0.2043	0.86	0.126	196.4	136.0	196.4	982	-2,054	-2	1,020	-1,035
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	24.77	6.55	0.3250	1.42	0.107	136.7	316.6	136.7	450	1,071	2	812	1,885
Neutral	#4 COPPER SOLID	Unknown, COMMUNICATION	24.18	6.58	0.2043	1.12	0.126	136.7	316.6	136.7	450	1,046	1	677	1,724

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.61	6.62	0.3250	1.42	0.107	136.7	316.6	136.7	450	1,021	2	775	1,797
											Totals:	1,817	3	5,846	7,666

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.58	6.93	1.3300	3.05	0.337	196.4	136.0	196.4	925	-1,418	89	1,943	614
CATV	CATV 1.0	Unknown, COMMUNICATION	18.58	6.93	1.3300	1.91	0.337	136.7	316.6	136.7	925	1,651	62	1,352	3,065
Telco	TELE 1.5	Unknown, COMMUNICATION	17.68	6.98	1.5000	3.63	0.900	196.4	136.0	196.5	2,000	-2,918	156	2,021	-740
Telco	TELE 1.5	Unknown, COMMUNICATION	17.68	6.98	1.5000	2.24	0.900	136.7	316.6	136.7	2,000	3,398	109	1,406	4,913
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.76	7.04	0.6570	2.99	0.190	196.4	136.0	196.4	750	-1,038	52	1,109	123
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.76	7.04	0.6570	1.90	0.190	136.7	316.6	136.7	750	1,208	36	771	2,015
											Totals:	884	503	8,602	9,989

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	27.70	20.87	320.0	320.0	365.00	39.00	--	22.00	--	160	1,153	1,313	
											Totals:	160	1,153	1,313

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	31.15	0.00	0.0	0.0	13.00	9.00	10.50	0	145	145
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.34	0.00	136.0	136.0	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.77	0.00	316.6	316.6	2.00	3.00	3.19	0	11	12
Spool	Spool Insulator - 25 kV	Unknown, COMMUNICATION	24.18	0.00	316.6	316.6	2.00	3.00	3.19	0	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.61	0.00	316.6	316.6	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	18.58	0.00	46.3	316.3	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.68	0.00	46.3	316.3	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	16.76	0.00	46.3	316.3	5.00	3.00	0.00	6	0	6
Totals:										17	190	207

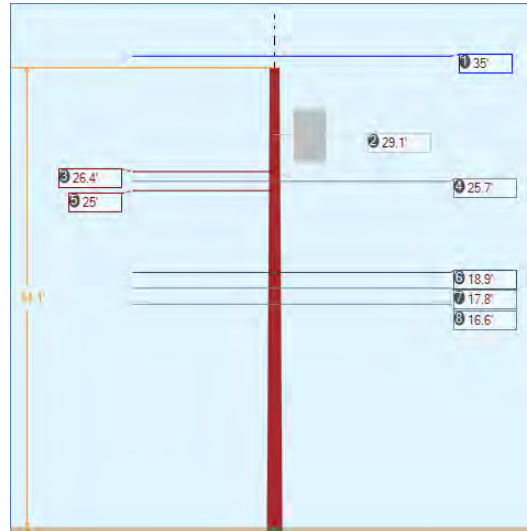
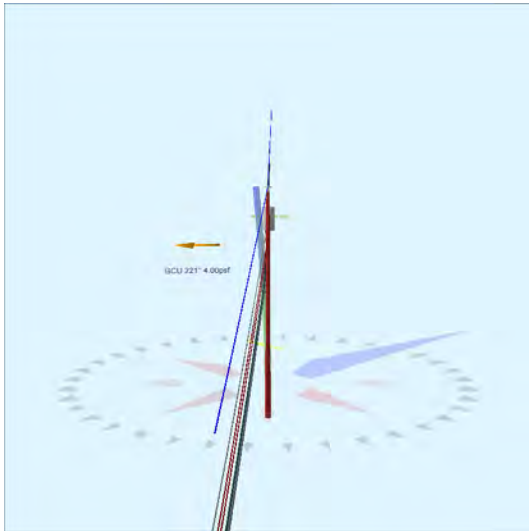
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	22.92	22.92	196.39	0.375	75.00	136.0	0.0	0.273	194.54	0.52

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	636	578	428	0	428	-27	522
Totals:										0	428	-27	522

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	196.39	136.0	20,000	1.00	20,000	578	428	2.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.49	33.20	10.32	8.09	7.32	11.12	1.60e+6	60.00	57.00	31.15	273,739	2764.28	76.92

Pole Num:	66W - 72217-34372	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.90	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.04	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.070806 Deg	Longitude:	-84.457137 Deg	Elevation:	902.278282813789		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.2	220.5
Groundline	29.2	220.5
Vertical	13.4	220.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,996	207.1
Groundline	23,996	207.1
GL Allowable	83,981	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 207.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	370	33.4	10,572	44.1	12.6	853	234	2	855	12.6
Comms	497	44.8	9,363	39.0	11.2	756	794	8	763	11.2
PowerEquipments	53	4.8	687	2.9	0.8	55	1,216	12	67	1.0
Pole	182	16.4	3,165	13.2	3.8	255	1,902	18	274	4.0
Insulators	6	0.5	209	0.9	0.3	17	65	1	18	0.3
Pole Load	1,107	100.0	23,996	100.0	28.6	1,937	4,211	41	1,977	29.1
Pole Reserve Capacity			59,985		71.4	4,863			4,823	70.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 207.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	429	38.7	11,452	47.7	13.6	924	1,486	14	939	13.8
Unknown, COMMUNICATION	497	44.8	9,379	39.1	11.2	757	823	8	765	11.2
Pole	182	16.4	3,165	13.2	3.8	255	1,902	18	274	4.0
Totals:	1,107	100.0	23,996	100.0	28.6	1,937	4,211	41	1,977	29.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.98	0.00	0.3250	0.31	0.107	136.7	136.6	136.7	1,684	19,688	0	1,079	20,767
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.98	0.00	0.3250	0.47	0.107	168.0	315.3	168.0	1,684	-18,423	0	1,339	-17,085
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.39	6.63	0.3250	1.42	0.107	136.7	136.6	136.7	450	3,968	7	814	4,789
Neutral	#4 COPPER SOLID KU, UTILITY	25.68	6.67	0.2043	1.12	0.126	136.7	136.6	136.7	450	3,861	18	676	4,555
Neutral	#4 COPPER SOLID KU, UTILITY	25.68	6.67	0.2043	0.63	0.126	168.0	315.3	168.0	982	-7,883	22	839	-7,022
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.98	6.72	0.3250	1.42	0.107	136.7	136.6	136.7	450	3,757	7	770	4,534
										Totals:	4,967	54	5,515	10,537

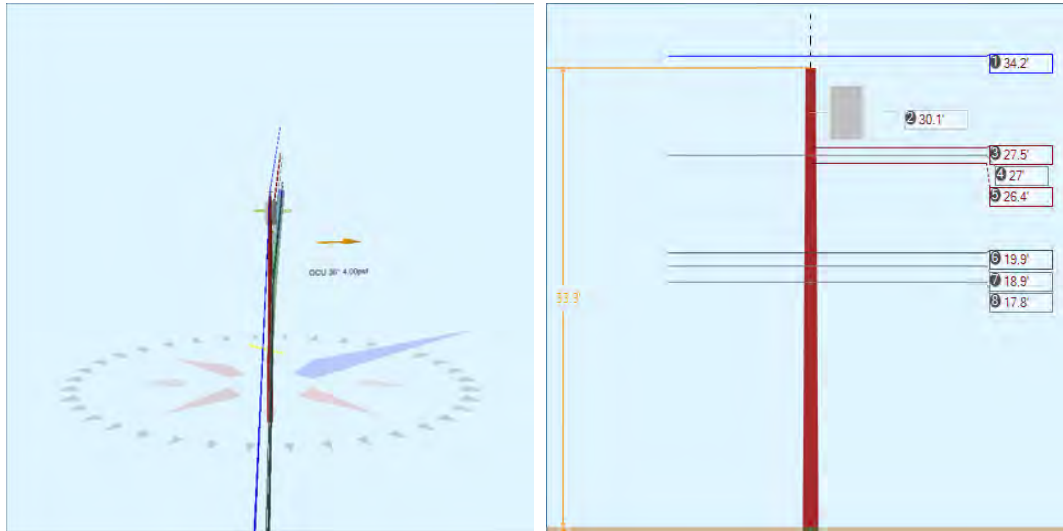
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.91	7.08	1.3300	1.91	0.337	136.7	136.6	136.7	925	5,846	60	1,293	7,199
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.91	7.08	1.3300	2.48	0.337	168.0	315.3	168.0	925	-5,470	74	1,605	-3,791
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.76	7.15	1.5000	2.24	0.900	136.7	136.6	136.7	2,000	11,870	106	1,327	13,304
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.76	7.15	1.5000	2.93	0.900	168.0	315.3	168.0	2,000	-11,108	130	1,647	-9,330
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.57	7.23	0.6570	1.90	0.190	136.7	136.6	136.7	750	4,153	35	716	4,904
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.57	7.23	0.6570	2.45	0.190	168.0	315.3	168.0	750	-3,886	43	889	-2,954
		COMMUNICATION													
Totals:											1,405	447	7,479	9,331	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.09	21.97	320.0	320.0	640.00	47.00	--	24.00	--	-867	1,551	684
Totals:											-867	1,551	684	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.10	0.00	0.0	0.0	13.00	9.00	10.50	0	154	154
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.39	0.00	136.6	136.6	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.68	0.00	226.0	136.0	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.98	0.00	136.6	136.6	2.00	3.00	3.19	1	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	18.91	0.00	226.0	136.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.76	0.00	226.0	136.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.57	0.00	226.0	136.0	5.00	3.00	0.00	5	0	5
Totals:										19	189	209

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.44	33.41	10.60	15.40	7.32	11.48	1.60e+6	60.00	57.00	34.10	31,414	314.28	7.46

Pole Num:	67W - 72098-34492	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.74	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071158 Deg	Longitude:	-84.457553 Deg	Elevation:	908.090690516171		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.1	0.0
Groundline	31.1	0.0
Vertical	14.4	22.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,011	14.5
Groundline	25,011	14.5
GL Allowable	81,878	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 14.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	385	38.1	11,067	44.3	13.5	916	215	2	918	13.5
Comms	402	39.7	8,046	32.2	9.8	666	749	7	673	9.9
PowerEquipments	51	5.0	2,830	11.3	3.5	234	1,216	12	246	3.6
Pole	169	16.7	2,871	11.5	3.5	238	1,838	18	256	3.8
Insulators	6	0.5	198	0.8	0.2	16	65	1	17	0.3
Pole Load	1,012	100.0	25,011	100.0	30.6	2,070	4,083	40	2,110	31.0
Pole Reserve Capacity			56,867		69.5	4,730			4,690	69.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 14.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	442	43.7	14,080	56.3	17.2	1,166	1,467	14	1,180	17.4
Unknown, COMMUNICATION	402	39.7	8,060	32.2	9.8	667	777	8	675	9.9
Pole	169	16.7	2,871	11.5	3.5	238	1,838	18	256	3.8
Totals:	1,012	100.0	25,011	100.0	30.6	2,070	4,083	40	2,110	31.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.18	0.00	0.3250	0.46	0.107	168.0	135.3	168.0	1,684	-29,505	0	1,172	-28,332
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.18	0.00	0.3250	0.23	0.107	119.2	316.2	119.2	1,684	30,278	0	822	31,100
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	27.55	6.51	0.3250	1.18	0.107	119.2	316.2	119.2	450	6,517	9	662	7,188
Neutral	#4 COPPER SOLID KU, UTILITY	26.98	6.55	0.2043	0.63	0.126	168.0	135.3	168.0	982	-13,576	20	790	-12,766
Neutral	#4 COPPER SOLID KU, UTILITY	26.98	6.55	0.2043	0.87	0.126	119.2	316.2	119.2	450	6,384	14	554	6,952
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.40	6.58	0.3250	1.18	0.107	119.2	316.2	119.2	450	6,245	9	634	6,889
										Totals:	6,344	53	4,634	11,030

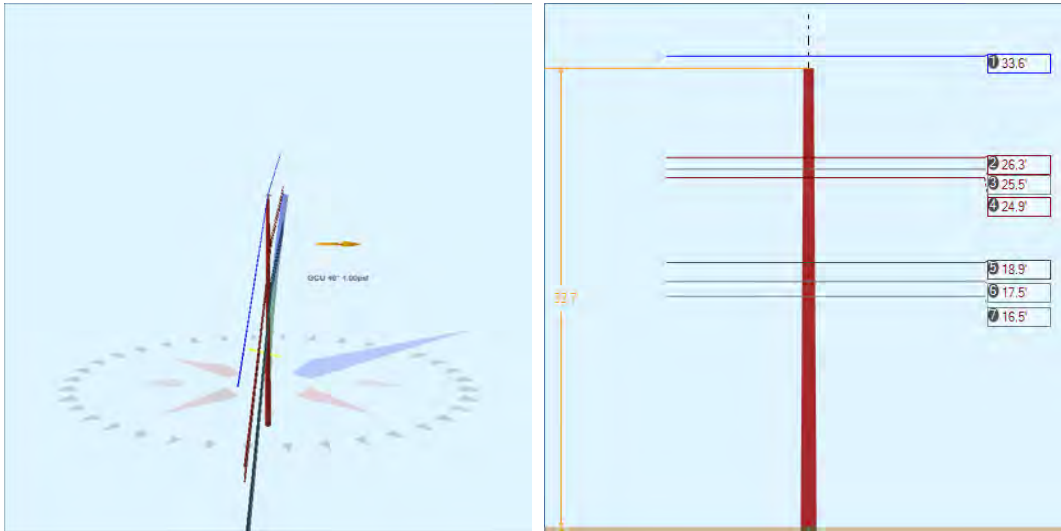
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.91	6.98	1.3300	2.48	0.337	168.0	135.3	168.0	925	-9,437	66	1,514	-7,857
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.91	6.98	1.3300	1.62	0.337	119.2	316.2	119.2	925	9,684	47	1,061	10,792
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.95	7.03	1.5000	2.93	0.900	168.0	135.3	168.0	2,000	-19,413	115	1,575	-17,723
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.95	7.03	1.5000	1.89	0.900	119.2	316.2	119.2	2,000	19,922	82	1,104	21,108
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.80	7.10	0.6570	2.45	0.190	168.0	135.3	168.0	750	-6,838	38	856	-5,944
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.80	7.10	0.6570	1.61	0.190	119.2	316.2	119.2	750	7,017	27	600	7,644
		COMMUNICATION													
Totals:											935	375	6,709	8,019	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.14	21.85	320.0	320.0	640.00	47.00	--	24.00	--	1,287	1,534	2,820
Totals:											1,287	1,534	2,820	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.31	0.00	0.0	0.0	13.00	9.00	10.50	0	144	144
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.55	0.00	316.2	316.2	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.98	0.00	45.8	315.8	2.00	3.00	3.19	2	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.40	0.00	316.2	316.2	2.00	3.00	3.19	1	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	19.91	0.00	45.8	315.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.95	0.00	45.8	315.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.80	0.00	45.8	315.8	5.00	3.00	0.00	5	0	5
Totals:										18	179	197

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.07	33.54	10.47	15.34	7.32	11.38	1.60e+6	60.00	57.00	33.31	28,259	283.51	6.94

Pole Num:	68W - 72018-34572	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.31	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071388 Deg	Longitude:	-84.457833 Deg	Elevation:	893.731128984626		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	46.3
Groundline	0.0	46.3
Vertical	16.6	46.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	46.6	46.3
Groundline	46.6	46.3
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 46.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	232	30.7	6,698	41.1	8.3	564	194	2	566	8.3
Comms	342	45.1	6,378	39.1	7.9	537	475	5	542	8.0
Pole	178	23.4	3,006	18.5	3.7	253	1,789	18	271	4.0
Insulators	6	0.8	212	1.3	0.3	18	65	1	19	0.3
Pole Load	758	100.0	16,294	100.0	20.3	1,372	2,523	25	1,397	20.5
Pole Reserve Capacity			63,983		79.7	5,428			5,403	79.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 46.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	238	31.5	6,893	42.3	8.6	581	230	2	583	8.6
Unknown, COMMUNICATION	342	45.1	6,395	39.3	8.0	539	503	5	544	8.0
Pole	178	23.4	3,006	18.5	3.7	253	1,789	18	271	4.0
Totals:	758	100.0	16,294	100.0	20.3	1,372	2,523	25	1,397	20.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.57	0.00	0.3250	0.24	0.107	119.2	136.2	119.2	1,684	393	0	963	1,356
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.57	0.00	0.3250	0.07	0.107	62.9	317.4	62.9	1,684	791	0	508	1,299
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.34	6.55	0.3250	1.19	0.107	119.2	136.2	119.2	450	82	18	755	855
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.34	6.55	0.3250	0.52	0.107	62.9	317.4	62.9	450	166	9	399	574
Neutral	#4 COPPER SOLID KU, UTILITY	25.52	6.60	0.2043	0.87	0.126	119.2	136.2	119.2	450	80	17	625	721
Neutral	#4 COPPER SOLID KU, UTILITY	25.52	6.60	0.2043	0.26	0.126	62.9	317.4	62.9	450	161	9	330	499
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.91	6.63	0.3250	1.19	0.107	119.2	136.2	119.2	450	78	18	714	810
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.91	6.63	0.3250	0.52	0.107	62.9	317.4	62.9	450	157	9	377	543
Totals:										1,908	80	4,671	6,658	

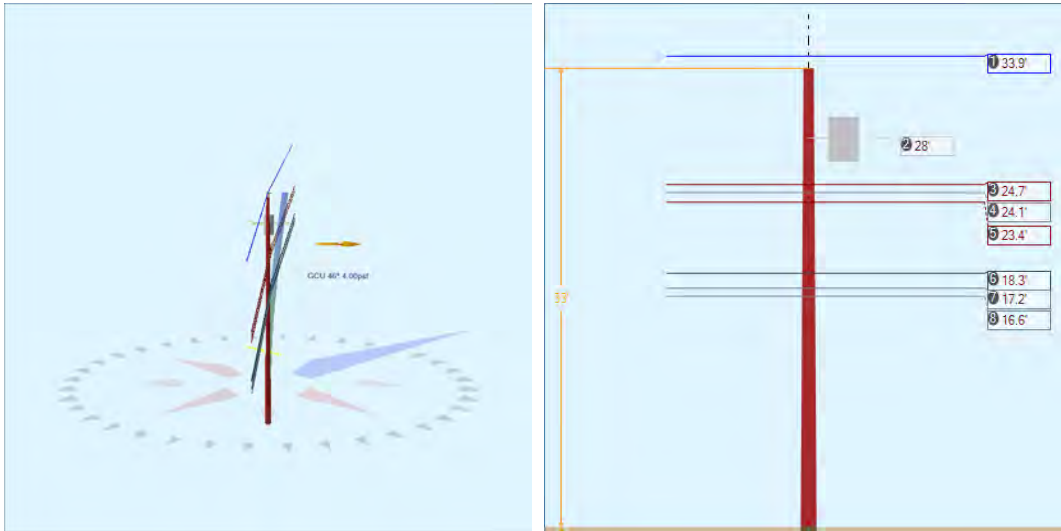
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	18.86	7.00	1.3300	1.62	0.337	119.2	136.2	119.2	925	121	55	1,200	1,376
CATV	CATV 1.0 Unknown, COMMUNICATION	18.86	7.00	1.3300	0.79	0.337	62.9	317.4	62.9	925	244	29	633	906
Telco	TELE 1.5 Unknown, COMMUNICATION	17.51	7.08	1.5000	1.89	0.900	119.2	136.2	119.2	2,000	244	97	1,217	1,557

Telco	TELE 1.5	Unknown, COMMUNICATION	17.51	7.08	1.5000	0.90	0.900	62.9	317.4	62.9	2,000	490	51	642	1,183
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.46	7.15	0.6570	1.61	0.190	119.2	136.2	119.2	750	86	32	662	779
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.46	7.15	0.6570	0.77	0.190	62.9	317.4	62.9	750	173	17	349	539
Totals:											1,357	280	4,703	6,340	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.69	0.00	0.0	0.0	13.00	9.00	10.50	0	152	152
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.34	0.00	46.8	316.8	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.52	0.00	46.8	316.8	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.91	0.00	46.8	316.8	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	18.86	0.00	46.8	316.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.51	0.00	46.8	316.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.46	0.00	46.8	316.8	5.00	3.00	0.00	6	0	6
Totals:										23	188	211

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.62	32.69	10.64	10.94	7.32	11.31	1.60e+6	60.00	57.00	32.69	53,036	525.56	20.83

Pole Num:	69W - 71971-34621	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.97	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.63	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071522 Deg	Longitude:	-84.457986 Deg	Elevation:	895.128174952877		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	20.3	0.0
Groundline	20.3	0.0
Vertical	8.2	19.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,146	43.4
Groundline	16,146	43.4
GL Allowable	81,147	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	213	28.6	6,022	37.3	7.4	501	149	1	503	7.4
Comms	304	40.9	5,554	34.4	6.8	462	364	4	466	6.9
PowerEquipments	42	5.6	1,314	8.1	1.6	109	694	7	116	1.7
Pole	180	24.1	3,044	18.9	3.8	253	1,816	18	271	4.0
Insulators	6	0.8	212	1.3	0.3	18	65	1	18	0.3
Pole Load	745	100.0	16,146	100.0	19.9	1,344	3,086	31	1,374	20.2
Pole Reserve Capacity			65,001		80.1	5,456			5,426	79.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	219	29.4	6,217	38.5	7.7	517	185	2	519	7.6
Unknown, COMMUNICATION	304	40.9	5,571	34.5	6.9	464	392	4	467	6.9
<Undefined>	42	5.6	1,314	8.1	1.6	109	694	7	116	1.7
Pole	180	24.1	3,044	18.9	3.8	253	1,816	18	271	4.0
Totals:	745	100.0	16,146	100.0	19.9	1,344	3,086	31	1,374	20.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.90	0.00	0.3250	0.07	0.107	62.9	137.4	62.9	1,684	-3,975	0	512	-3,463
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.90	0.00	0.3250	0.10	0.107	76.5	319.0	76.5	1,684	5,565	0	621	6,186
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.67	0.3250	0.52	0.107	62.9	137.4	62.9	450	-772	9	372	-391
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.66	6.67	0.3250	0.67	0.107	76.5	319.0	76.5	450	1,081	11	452	1,544
Neutral	#4 COPPER SOLID KU, UTILITY	24.09	6.70	0.2043	0.26	0.126	62.9	137.4	62.9	450	-754	9	311	-435
Neutral	#4 COPPER SOLID KU, UTILITY	24.09	6.70	0.2043	0.38	0.126	76.5	319.0	76.5	450	1,056	11	376	1,443
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	23.40	6.75	0.3250	0.52	0.107	62.9	137.4	62.9	450	-733	10	353	-370

Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.40	6.75	0.3250	0.67	0.107	76.5	319.0	76.5	450	1,026	12	428	1,466
											Totals:	2,493	62	3,426	5,981

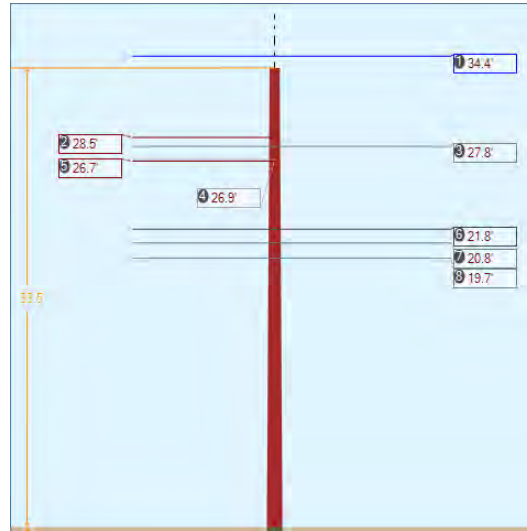
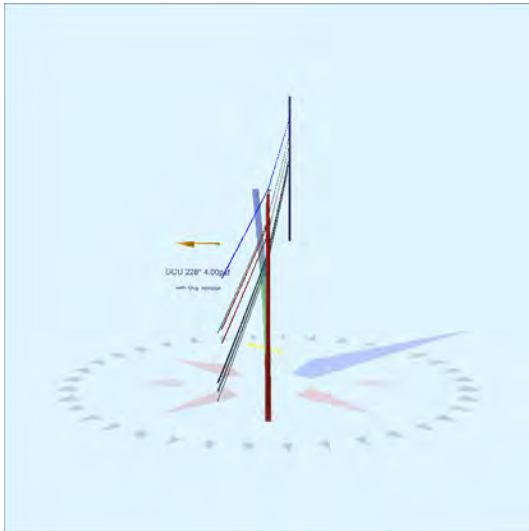
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.27	7.06	1.3300	0.79	0.337	62.9	137.4	62.9	925	-1,176	29	612	-535
CATV	CATV 1.0	Unknown, COMMUNICATION	18.27	7.06	1.3300	0.98	0.337	76.5	319.0	76.5	925	1,647	35	742	2,424
Telco	TELE 1.5	Unknown, COMMUNICATION	17.20	7.12	1.5000	0.90	0.900	62.9	137.4	62.9	2,000	-2,395	51	630	-1,714
Telco	TELE 1.5	Unknown, COMMUNICATION	17.20	7.12	1.5000	1.12	0.900	76.5	319.0	76.5	2,000	3,352	62	763	4,178
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.63	7.16	0.6570	0.77	0.190	62.9	137.4	62.9	750	-868	17	352	-499
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.63	7.16	0.6570	0.96	0.190	76.5	319.0	76.5	750	1,215	20	427	1,662
											Totals:	1,775	215	3,526	5,516

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	28.00	20.97	320.0	320.0	365.00	39.00	--	22.00	--	139	1,166	1,305	
											Totals:	139	1,166	1,305

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.03	0.00	0.0	0.0	13.00	9.00	10.50	0	154	154		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.66	0.00	48.2	318.2	2.00	3.00	3.19	2	11	14		
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.09	0.00	48.2	318.2	2.00	3.00	3.19	2	11	13		
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.40	0.00	48.2	318.2	2.00	3.00	3.19	2	11	13		
Bolt	Three Bolt	Unknown, COMMUNICATION	18.27	0.00	48.2	318.2	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	17.20	0.00	48.2	318.2	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	16.63	0.00	48.2	318.2	5.00	3.00	0.00	6	0	6		
											Totals:	23	187	210

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.47	33.13	10.56	12.74	7.32	11.35	1.60e+6	60.00	57.00	33.03	37,465	376.36	12.20

Pole Num:	70W - 71911-34680	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.46	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071658 Deg	Longitude:	-84.458158 Deg	Elevation:	886.844061989577		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.5	227.7
Groundline	27.5	227.7
Vertical	0.7	137.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,389	225.1
Groundline	22,389	225.1
GL Allowable	82,493	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	147.0	317.3		2.2	227.7	2.8	130.0
? EHS 3/8 (Span/Head)			26.9	3.2	227.7	4.4	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 225.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	271	28.6	8,371	37.4	10.2	687	159	2	689	10.1
Comms	466	49.2	10,102	45.1	12.3	829	583	6	835	12.3
GuyBraces	21	2.2	562	2.5	0.7	46	34	0	46	0.7
Pole	183	19.3	3,139	14.0	3.8	258	1,857	18	276	4.1
Insulators	6	0.6	214	1.0	0.3	18	65	1	18	0.3
Pole Load	947	100.0	22,389	100.0	27.1	1,838	2,697	26	1,865	27.4
Pole Reserve Capacity			60,104		72.9	4,962			4,935	72.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 225.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	298	31.5	9,131	40.8	11.1	750	229	2	752	11.1
Unknown, COMMUNICATION	466	49.2	10,119	45.2	12.3	831	611	6	837	12.3
Pole	183	19.3	3,139	14.0	3.8	258	1,857	18	276	4.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	947	100.0	22,389	100.0	27.1	1,838	2,697	26	1,865	27.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.42	0.00	0.3250	0.10	0.107	76.5	139.0	76.5	1,684	5,080	0	632	5,712
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	34.42	0.00	0.3250	0.36	0.107	147.0	317.3	147.0	1,684	-2,846	0	1,217	-1,629
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.48	6.47	0.3250	0.67	0.107	76.5	139.0	76.5	450	1,123	1	523	1,647
Neutral	#4 COPPER SOLID KU, UTILITY	27.83	6.51	0.2043	0.38	0.126	76.5	139.0	76.5	450	1,097	11	436	1,544
Neutral	#4 COPPER SOLID KU, UTILITY	27.83	6.51	0.2043	0.48	0.126	147.0	317.3	147.0	982	-1,342	20	840	-482
Secondary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	26.73	6.57	0.3250	0.67	0.107	76.5	139.0	76.5	450	1,054	1	491	1,546
										Totals:	4,165	32	4,140	8,338

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.78	6.88	1.3300	0.98	0.337	76.5	139.0	76.5	925	1,765	34	887	2,687
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.78	6.88	1.3300	2.09	0.337	147.0	317.3	147.0	925	-989	66	1,708	785
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.78	6.94	1.5000	1.12	0.900	76.5	139.0	76.5	2,000	3,641	61	925	4,626
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.78	6.94	1.5000	2.46	0.900	147.0	317.3	147.0	2,000	-2,040	116	1,780	-143
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.66	7.01	0.6570	0.96	0.190	76.5	139.0	76.5	750	1,292	20	506	1,818
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.66	7.01	0.6570	2.08	0.190	147.0	317.3	147.0	750	-724	38	974	289
		COMMUNICATION													
Totals:											2,944	336	6,781	10,062	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.54	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.48	0.00	139.0	139.0	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.83	0.00	228.1	138.1	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.73	0.00	139.0	139.0	2.00	3.00	3.19	0	12	13
Bolt	Three Bolt	Unknown, COMMUNICATION	21.78	0.00	228.1	138.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.78	0.00	228.1	138.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.66	0.00	228.1	138.1	5.00	3.00	0.00	6	0	6
Totals:										19	195	213

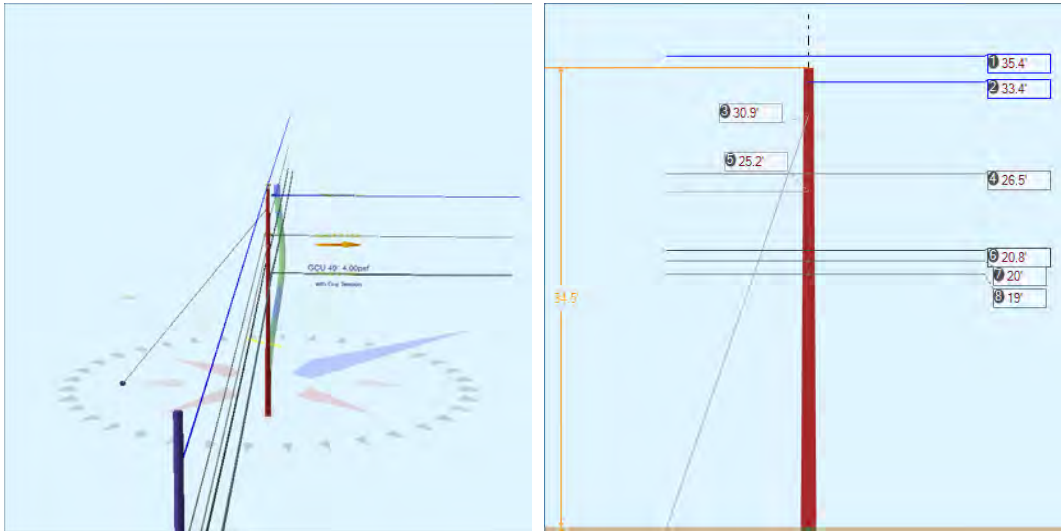
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	26.85	26.85	147.01	0.375	75.00	317.3	0.0	0.273	145.17	0.41

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	606	551	446	0	446	-17	560
Totals:										0	446	-17	560

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	147.01	317.3	20,000	1.00	20,000	551	446	2.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	17.85	32.86	10.69	6.91	7.32	11.41	1.60e+6	60.00	57.00	33.54	374,852	3853.41	142.86

Pole Num:	71W - 71813-34779	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.51	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.19	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.071967 Deg	Longitude:	-84.458525 Deg	Elevation:	881.025701498468		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.8	48.6
Groundline	31.8	56.9
Vertical	8.7	2.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,961	48.6
Groundline	27,030	56.9
GL Allowable	85,028	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	25.5	227.2		36.4	48.6	36.4	47.2
? EHS 3/8 (Down)			30.9	52.5	48.6	57.7	47.2
? Single Helix Anchor	147.0	137.3		0.0	48.6	0.3	320.0
? EHS 3/8 (Span/Head)			25.2	0.0	48.6	0.5	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 53.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,583	158.3	86,810	321.2	102.1	8,850	172	2	8,852	130.2
Comms	3,011	133.0	47,401	175.4	55.8	4,832	804	8	4,840	71.2
GuyBraces	-4,526	-199.9	-109,995	-406.9	-129.4	-11,214	8,508	82	-11,132	-163.7
Pole	189	8.3	2,597	9.6	3.1	265	1,934	19	283	4.2
Insulators	8	0.3	217	0.8	0.3	22	66	1	23	0.3
Pole Load	2,264	100.0	27,030	100.0	31.8	2,756	11,486	110	2,866	42.1
Pole Reserve Capacity			57,998		68.2	4,044			3,934	57.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 53.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-936	-41.3	-22,973	-85.0	-27.0	-2,342	8,718	84	-2,258	-33.2
Unknown, COMMUNICATION	3,011	133.0	47,406	175.4	55.8	4,833	833	8	4,841	71.2
Pole	189	8.3	2,597	9.6	3.1	265	1,934	19	283	4.2
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	2,264	100.0	27,030	100.0	31.8	2,756	11,486	110	2,866	42.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.37	0.00	0.3250	0.36	0.107	147.0	137.3	147.0	1,684	8,867	0	1,243	10,110
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	35.37	0.00	0.3250	0.33	0.107	139.9	317.4	139.9	1,684	-8,733	0	1,183	-7,550
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	33.42	16.48	0.3250	0.02	0.107	41.0	48.3	41.0	1,684	72,812	3	0	72,815
Neutral	#4 COPPER SOLID KU, UTILITY	26.53	6.65	0.2043	0.48	0.126	147.0	137.3	147.0	982	3,877	-20	796	4,653
Neutral	#4 COPPER SOLID KU, UTILITY	26.53	6.65	0.2043	0.44	0.126	139.9	317.4	139.9	982	-3,819	-19	758	-3,080
Neutral	#4 COPPER SOLID KU, UTILITY	26.53	6.65	0.2043	0.03	0.126	41.0	48.3	41.0	982	33,707	6	0	33,713
										Totals:	106,712	-30	3,980	110,661

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 20.78	6.99	1.3300	2.09	0.337	147.0	137.3	147.0	925	2,861	-67	1,620	4,414
	COMMUNICATION													
CATV	CATV 1.0	Unknown, 20.78	6.99	1.3300	1.97	0.337	139.9	317.4	139.9	925	-2,818	-64	1,542	-1,340
	COMMUNICATION													
Telco	TELE 1.5	Unknown, 19.99	7.04	1.5000	0.57	0.900	41.0	48.3	41.0	2,000	51,739	33	0	51,772
	COMMUNICATION													
Telco	TELE 1.5	Unknown, 19.99	7.04	1.5000	2.46	0.900	147.0	137.3	147.0	2,000	5,951	118	1,703	7,772
	COMMUNICATION													
Telco	TELE 1.5	Unknown, 19.99	7.04	1.5000	2.31	0.900	139.9	317.4	140.0	2,000	-5,861	112	1,621	-4,128
	COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 19.00	7.10	0.6570	2.08	0.190	147.0	137.3	147.0	750	2,121	39	936	3,096
	COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 19.00	7.10	0.6570	1.96	0.190	139.9	317.4	139.9	750	-2,089	37	891	-1,161
	COMMUNICATION													
Totals:											51,905	207	8,313	60,425

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.49	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.42	0.00	48.3	48.3	3.00	3.80	12.75	8	78	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.53	0.00	220.0	220.0	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.53	0.00	40.0	40.0	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	20.78	0.00	227.3	317.3	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.99	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.00	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6
Totals:										13	263	276

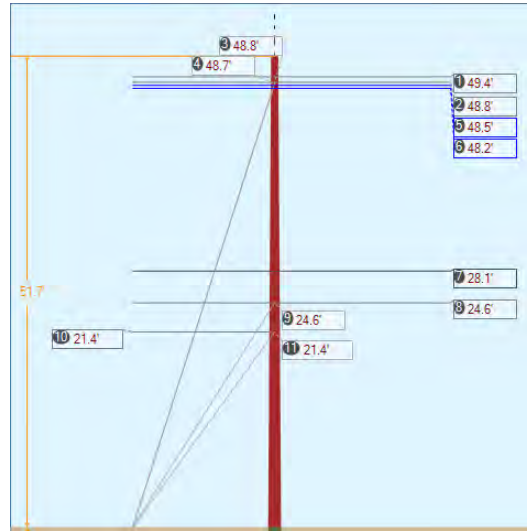
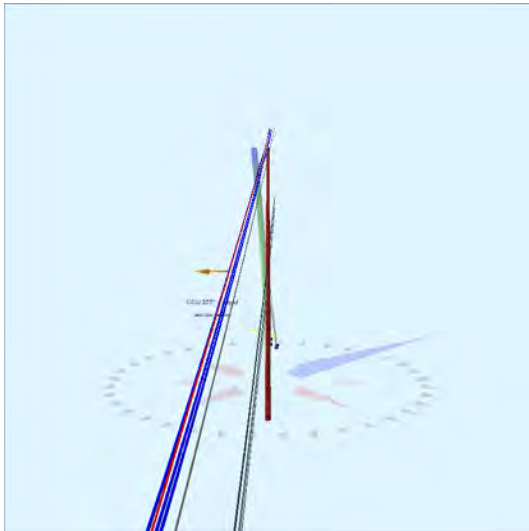
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	30.93	0.00	25.51	0.375	75.00	227.2	50.3	0.273	38.39	1.76
EHS 3/8	Span/Head	KU, UTILITY	25.19	25.19	147.01	0.375	75.00	137.3	0.0	0.273	145.16	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,002	7,275	7,275	5,598	4,645	-4,614	-141,156
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	63	57	0	0	0	0	940
Totals:										5,598	4,645	-4,614	-140,217

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	25.51	227.2	20,000	1.00	20,000	7,275	7,275	36.4
Single Helix Anchor		18.00	147.01	137.3	20,000	1.00	20,000	57	0	0.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	28.14	34.46	10.34	16.91	7.32	11.52	1.60e+6	60.00	57.00	34.49	132,043	1320.18	11.49

Pole Num:	92W - 70678-34125	Pole Length / Class:	60 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.28	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	44.15	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.070215 Deg	Longitude:	-84.462559 Deg	Elevation:	873.055646791348		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.2	0.0
Groundline	34.2	0.0
Vertical	2.6	29.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,700	225.3
Groundline	51,700	225.3
GL Allowable	154,450	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	38.2	316.0	48.8	0.0	227.0	0.6	100.0
? Single Helix Anchor ? EHS 3/8 (Down)	33.1	316.0	48.7	0.0	227.0	0.6	100.0
? Single Helix Anchor ? EHS 1/4 (Down)	32.0	319.0	24.6	2.7	227.0	3.1	200.0
? Single Helix Anchor ? EHS 1/4 (Down)	29.9	319.0	21.4	9.1	227.0	11.4	200.0
				2.5	227.0	2.8	190.0
				8.4	227.0	10.4	190.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 225.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	644	46.3	31,840	61.6	20.6	1,400	1,483	10	1,409	20.7
Comms	414	29.8	10,520	20.4	6.8	463	704	5	467	6.9
GuyBraces	-7	-0.5	640	1.2	0.4	28	999	6	35	0.5
Pole	332	23.9	8,310	16.1	5.4	365	3,995	26	391	5.8
Insulators	7	0.5	390	0.8	0.3	17	80	1	18	0.3
Pole Load	1,391	100.0	51,700	100.0	33.5	2,273	7,261	47	2,320	34.1
Pole Reserve Capacity			102,750		66.5	4,527			4,480	65.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 225.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	120	8.6	5,934	11.5	3.8	261	143	1	262	3.8
Power, UTILITY	562	40.4	27,795	53.8	18.0	1,222	1,410	9	1,231	18.1
Unknown, COMMUNICATION	377	27.1	9,661	18.7	6.3	425	1,713	11	436	6.4
Pole	332	23.9	8,310	16.1	5.4	365	3,995	26	391	5.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,391	100.0	51,700	100.0	33.5	2,273	7,261	47	2,320	34.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	49.45	16.86	0.3980	0.65	0.145	188.0	136.3	188.0	2,128	2,354	0	2,435	4,789
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	49.45	16.86	0.3980	0.19	0.145	99.2	316.1	99.2	2,128	-1,876	0	1,284	-593
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	48.83	15.65	0.5630	0.45	0.291	188.0	136.3	188.0	5,010	5,472	33	2,846	8,352
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	48.83	15.65	0.5630	0.13	0.291	99.2	316.1	99.2	5,010	-4,362	18	1,502	-2,843
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.50	11.65	1.1080	2.54	1.093	188.0	136.3	188.0	3,200	3,472	94	4,275	7,841
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.50	19.65	1.1080	2.54	1.093	188.0	136.3	188.0	3,200	3,472	94	4,275	7,841
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.50	11.65	1.1080	1.09	1.093	99.2	316.1	99.2	3,200	-2,767	49	2,256	-462
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.50	19.65	1.1080	1.09	1.093	99.2	316.1	99.2	3,200	-2,767	49	2,256	-462
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.17	15.65	1.1080	2.54	1.093	188.0	136.3	188.0	3,200	3,448	94	4,246	7,788
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.17	15.65	1.1080	1.09	1.093	99.2	316.1	99.2	3,200	-2,748	50	2,240	-458
										Totals:	3,695	481	27,615	31,792	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	28.13	7.87	1.3300	2.88	0.337	188.0	136.3	188.1	925	582	2	2,823	3,406

CATV	CATV 1.0	Unknown, COMMUNICATION	28.13	7.87	1.3300	1.31	0.337	99.2	316.1	99.2	925	-464	-1	1,488	1,024
Telco	TELE 1.5	Unknown, COMMUNICATION	24.64	8.07	1.5000	3.42	0.900	188.0	136.3	188.1	2,000	1,102	3	2,702	3,808
Telco	TELE 1.5	Unknown, COMMUNICATION	24.64	8.07	1.5000	1.51	0.900	99.2	316.1	99.2	2,000	-879	-1	1,425	545
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.44	8.26	0.6570	2.83	0.190	188.0	136.3	188.1	750	360	1	1,360	1,721
Totals:											701	4	9,799	10,504	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.45	0.00	136.3	136.3	3.00	3.80	12.75	0	116	117
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.45	0.00	316.1	316.1	3.00	3.80	12.75	0	116	116
Suspension	Suspension 11.50"	Power, UTILITY	48.83	0.00	230.0	230.0	11.00	4.75	11.50	27	130	157
Bolt	Single Bolt	Unknown, COMMUNICATION	28.13	0.00	136.3	226.3	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	28.13	0.00	316.1	316.1	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	24.64	0.00	136.3	226.3	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	24.64	0.00	316.1	316.1	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	21.44	0.00	136.3	226.3	5.00	3.00	0.00	0	0	0
Totals:										27	362	390

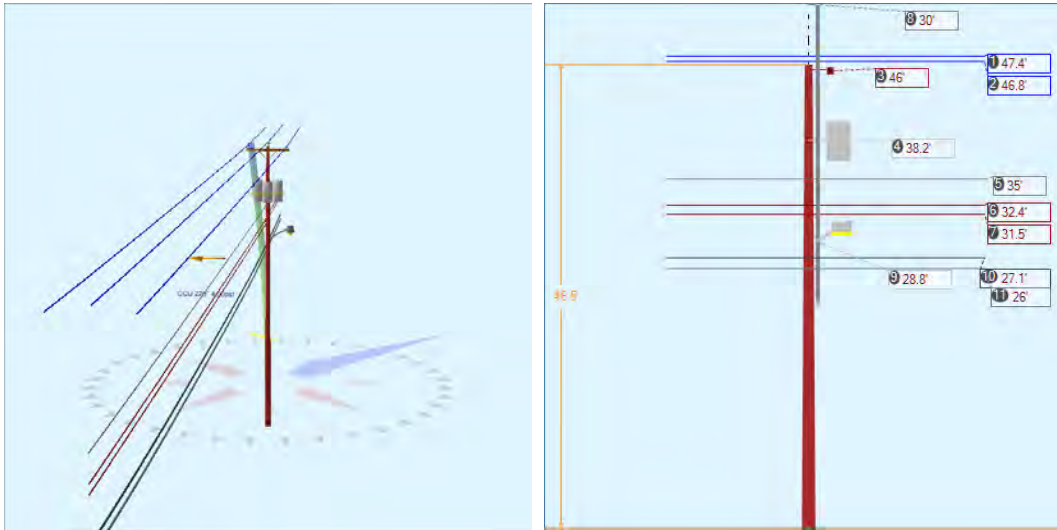
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	48.82	0.00	38.16	0.375	75.00	316.0	51.8	0.273	60.25	0.00
EHS 3/8	Down	KU, UTILITY	48.66	0.00	33.11	0.375	75.00	316.0	55.6	0.273	57.16	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	24.64	0.00	32.00	0.25	75.00	319.0	37.5	0.121	38.52	0.30
EHS 1/4	Down	Unknown, COMMUNICATION	21.44	0.00	29.85	0.25	75.00	319.0	35.6	0.121	34.87	0.25

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	123	112	0	0	0	0	768
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	121	110	0	0	0	0	728
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	684	622	543	330	431	-28	-464
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	622	565	504	294	410	-26	-393
Totals:										624	841	-54	639

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	38.16	316.0	20,000	1.00	20,000	112	0	0.6
Single Helix Anchor		18.00	33.11	316.0	20,000	1.00	20,000	110	0	0.6
Single Helix Anchor		18.00	32.00	319.0	20,000	1.00	20,000	622	543	3.1
Single Helix Anchor		18.00	29.85	319.0	20,000	1.00	20,000	565	504	2.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.82	33.75	12.87	14.28	7.96	14.06	1.60e+6	60.00	57.00	51.72	282,166	2792.85	38.46

Pole Num:	97W - 27230-159	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.48	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.56	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.064527 Deg	Longitude:	-84.468236 Deg	Elevation:	839.637382239091		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.8	0.0
Groundline	43.8	0.0
Vertical	32.5	31.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	59,490	227.6
Groundline	59,490	227.6
GL Allowable	138,361	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	863	51.3	36,928	62.1	26.7	1,810	581	4	1,814	26.7
Comms	266	15.8	7,325	12.3	5.3	359	396	3	362	5.3
PowerEquipments	164	9.8	6,390	10.7	4.6	313	3,648	25	338	5.0
Pole	292	17.3	6,672	11.2	4.8	327	3,420	24	351	5.2
Crossarms	1	0.1	59	0.1	0.0	3	95	1	4	0.1
Streetlights	20	1.2	330	0.6	0.2	16	86	1	17	0.2
Risers	69	4.1	1,385	2.3	1.0	68	57	0	68	1.0
Insulators	9	0.5	401	0.7	0.3	20	78	1	20	0.3
Pole Load	1,683	100.0	59,490	100.0	43.0	2,915	8,360	58	2,973	43.7
Pole Reserve Capacity			78,871		57.0	3,885			3,827	56.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,273	75.6	49,475	83.2	35.8	2,424	4,691	33	2,457	36.1
Unknown, COMMUNICATION	117	7.0	3,284	5.5	2.4	161	154	1	162	2.4
Pole	292	17.3	6,672	11.2	4.8	327	3,420	24	351	5.2
<Undefined>	1	0.1	59	0.1	0.0	3	95	1	4	0.1
Totals:	1,683	100.0	59,490	100.0	43.0	2,915	8,360	58	2,973	43.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.40	0.00	0.7200	0.36	0.462	140.0	140.7	140.0	6,210	15,906	0	2,359	18,265
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.40	0.00	0.7200	0.04	0.462	43.5	319.5	43.5	6,210	-9,743	0	734	-9,009
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	46.85	45.37	0.7200	0.36	0.462	140.0	140.7	140.0	6,210	15,721	383	2,331	18,435
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	46.85	45.37	0.7200	0.04	0.462	43.5	319.5	43.5	6,210	-9,630	119	725	-8,786

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	46.85	45.37	0.7200	0.36	0.462	140.0	140.7	140.0	6,210	15,721	-378	2,331	17,674
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	46.85	45.37	0.7200	0.04	0.462	43.5	319.5	43.5	6,210	-9,630	-118	725	-9,022
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	7.17	0.3980	0.37	0.145	140.0	140.7	140.0	2,128	4,026	28	1,282	5,336
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.03	7.17	0.3980	0.04	0.145	43.5	319.5	43.5	2,128	-2,466	9	399	-2,059
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.40	7.33	0.3980	0.37	0.145	140.0	140.7	140.0	2,128	3,724	28	1,186	4,938
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.40	7.33	0.3980	0.04	0.145	43.5	319.5	43.5	2,128	-2,281	9	369	-1,903
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.49	7.38	0.3980	0.37	0.145	140.0	140.7	140.0	2,128	3,619	28	1,153	4,801
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.49	7.38	0.3980	0.04	0.145	43.5	319.5	43.5	2,128	-2,217	9	359	-1,850
Totals:											22,749	116	13,955	36,819	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	27.11	7.65	1.3300	1.97	0.337	140.0	140.7	140.0	925	1,354	70	2,023	3,447
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	27.11	7.65	1.3300	0.54	0.337	43.5	319.5	43.5	925	-830	22	629	-179
		COMMUNICATION													
Telco	TELE 1.5	KU, UTILITY	26.04	7.71	1.5000	2.31	0.900	140.0	140.7	140.1	2,000	2,812	123	2,123	5,058
Telco	TELE 1.5	KU, UTILITY	26.04	7.71	1.5000	0.61	0.900	43.5	319.5	43.5	2,000	-1,723	38	660	-1,024
Totals:											1,614	254	5,435	7,303	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	38.17	22.48	140.0	140.0	640.00	47.00	--	24.00	--	95	6,276	6,371
Totals:											95	6,276	6,371	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	46.03	5.76	140.1	140.1	50.00	4.50	3.50	96.00	2	57	59	
Totals:											2	57	59

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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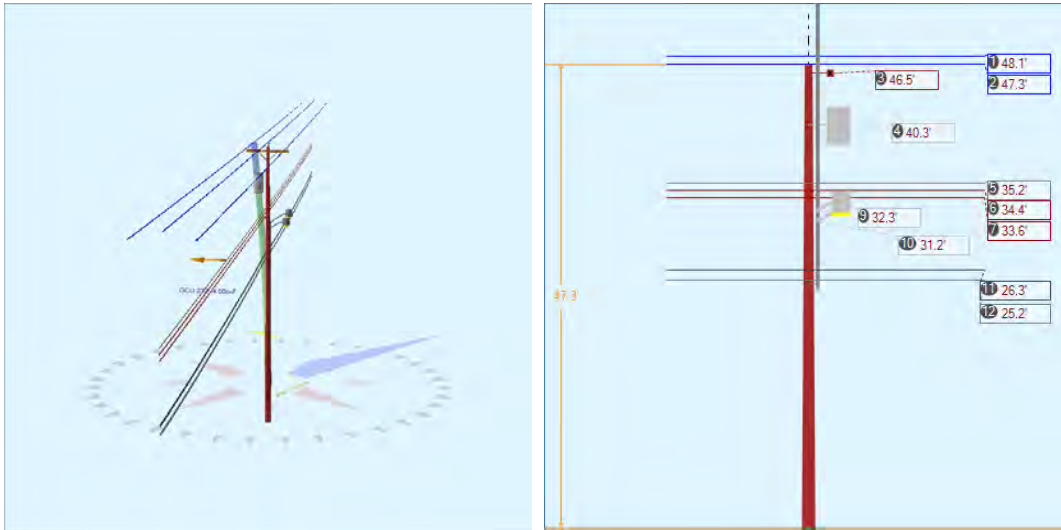
General	Streetlight - 3 ft. Arm	KU, UTILITY	28.77	5.05	42.0	42.0	45.00	24.00	20.00	3.00	36.00	-241	570	329
Totals:												-241	570	329

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 150.0°	Riser	KU, UTILITY	29.99	7.04	150.0	150.0	29.99	359.93	4.00	4.00	359.93	7	1,375	1,381
Totals:												7	1,375	1,381

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	46.52	0.00	0.0	0.0	13.00	9.00	10.50	0	216	216
Pin	Pin Insulator - 5 kV	KU, UTILITY	46.22	45.00	222.8	0.0	6.00	3.50	7.50	43	59	102
Pin	Pin Insulator - 5 kV	KU, UTILITY	46.22	-45.00	57.4	0.0	6.00	3.50	7.50	-42	59	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.03	0.00	230.1	140.1	2.00	3.00	3.19	2	16	19
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.40	0.00	230.1	140.1	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.49	0.00	230.1	140.1	2.00	3.00	3.19	2	15	17
Bolt	Three Bolt	Unknown, COMMUNICATION	27.11	0.00	230.1	140.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	KU, UTILITY	26.04	0.00	230.1	140.1	5.00	3.00	0.00	6	0	6
Totals:										20	380	399

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	31.65	34.21	12.25	26.11	7.96	13.56	1.60e+6	60.00	57.00	46.52	25,696	257.24	3.08

Pole Num:	98W - 27230-155	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.84	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.064229 Deg	Longitude:	-84.467956 Deg	Elevation:	853.057611958356		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.4	0.0 232.0
Groundline	35.4	0.0 232.0
Vertical	21.0	29.8 232.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	48,987	230.6 232.0
Groundline	48,987	230.6 232.0
GL Allowable	141,079	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 230.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	631	45.4	27,068	55.3	19.2	1,303	779	5	1,309	19.2
Comms	295	21.3	7,952	16.2	5.6	383	531	4	386	5.7
PowerEquipments	55	3.9	4,474	9.1	3.2	215	1,216	8	224	3.3
Pole	298	21.4	6,893	14.1	4.9	332	3,504	24	356	5.2
Crossarms	1	0.1	57	0.1	0.0	3	95	1	3	0.0
Streetlights	40	2.9	824	1.7	0.6	40	171	1	41	0.6
Risers	60	4.4	1,313	2.7	0.9	63	62	0	64	0.9
Insulators	9	0.6	406	0.8	0.3	20	78	1	20	0.3
Pole Load	1,388	100.0	48,987	100.0	34.7	2,359	6,437	44	2,403	35.3
Pole Reserve Capacity			92,092		65.3	4,441			4,397	64.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 230.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	952	68.6	38,280	78.1	27.1	1,843	2,634	18	1,861	27.4
Unknown, COMMUNICATION	138	9.9	3,757	7.7	2.7	181	203	1	182	2.7
Pole	298	21.4	6,893	14.1	4.9	332	3,504	24	356	5.2
<Undefined>	1	0.1	57	0.1	0.0	3	95	1	3	0.0
Totals:	1,388	100.0	48,987	100.0	34.7	2,359	6,437	44	2,403	35.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.13	0.00	0.7200	0.21	0.462	106.1	141.1	106.1	6,210	2,503	0	1,819	4,321
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.13	0.00	0.7200	0.36	0.462	140.0	320.7	140.0	6,210	-415	0	2,399	1,984
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.31	45.37	0.7200	0.21	0.462	106.1	141.1	106.1	6,210	2,460	289	1,788	4,537
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.31	45.37	0.7200	0.36	0.462	140.0	320.7	140.0	6,210	-408	381	2,358	2,332

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.31	45.37	0.7200	0.21	0.462	106.1	141.1	106.1	6,210	2,460	-289	1,788	3,959
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.31	45.37	0.7200	0.36	0.462	140.0	320.7	140.0	6,210	-408	-381	2,358	1,570
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.16	7.21	0.3980	0.21	0.145	106.1	141.1	106.1	2,128	626	21	977	1,624
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.16	7.21	0.3980	0.37	0.145	140.0	320.7	140.0	2,128	-104	28	1,289	1,213
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.42	7.25	0.3980	0.21	0.145	106.1	141.1	106.1	2,128	613	21	957	1,591
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.42	7.25	0.3980	0.37	0.145	140.0	320.7	140.0	2,128	-102	28	1,262	1,188
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.65	7.30	0.3980	0.21	0.145	106.1	141.1	106.1	2,128	599	21	935	1,556
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.65	7.30	0.3980	0.37	0.145	140.0	320.7	140.0	2,128	-99	28	1,234	1,162
Totals:											7,726	148	19,163	27,037	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	26.28	7.74	1.3300	1.42	0.337	106.1	141.1	106.1	925	203	54	1,488	1,746
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	26.28	7.74	1.3300	1.97	0.337	140.0	320.7	140.0	925	-34	71	1,963	2,001
		COMMUNICATION													
Telco	TELE 1.5	KU, UTILITY	25.25	7.80	1.5000	1.64	0.900	106.1	141.1	106.2	2,000	423	95	1,563	2,080
Telco	TELE 1.5	KU, UTILITY	25.25	7.80	1.5000	2.31	0.900	140.0	320.7	140.1	2,000	-70	125	2,062	2,116
Totals:											522	344	7,076	7,943	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	40.33	22.40	225.0	225.0	640.00	47.00	--	24.00	--	2,258	2,211	4,469
Totals:											2,258	2,211	4,469	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	46.50	5.77	140.9	140.9	50.00	4.50	3.50	96.00	0	57	57	
Totals:											0	57	57

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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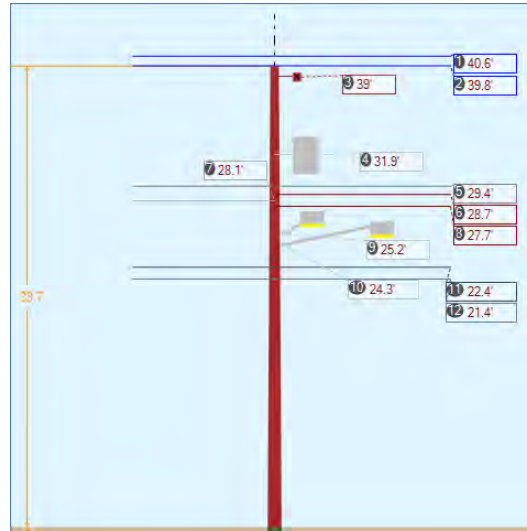
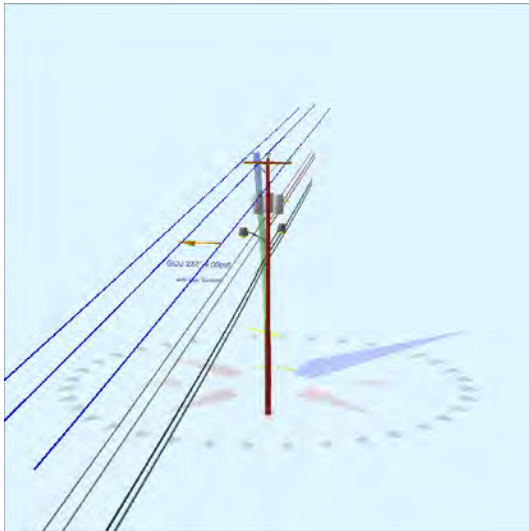
General	Streetlight - 3 ft. Arm	KU, UTILITY	32.30	4.88	30.0	30.0	45.00	24.00	20.00	3.00	36.00	-226	640	414
General	Streetlight - 3 ft. Arm	KU, UTILITY	31.23	4.94	80.0	80.0	45.00	24.00	20.00	3.00	36.00	-211	619	408
Totals:												-437	1,260	823

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	32.87	7.04	360.0	360.0	32.87	394.49	4.00	4.00	394.49	-12	1,324	1,312
Totals:												-12	1,324	1,312

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	47.26	0.00	0.0	0.0	13.00	9.00	10.50	0	219	219
Pin	Pin Insulator - 5 kV	KU, UTILITY	46.69	45.00	223.5	0.0	6.00	3.50	7.50	43	60	102
Pin	Pin Insulator - 5 kV	KU, UTILITY	46.69	-45.00	58.2	0.0	6.00	3.50	7.50	-43	60	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.16	0.00	230.9	140.9	2.00	3.00	3.19	2	16	19
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.42	0.00	230.9	140.9	2.00	3.00	3.19	2	16	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.65	0.00	230.9	140.9	2.00	3.00	3.19	2	16	18
Bolt	Three Bolt	Unknown, COMMUNICATION	26.28	0.00	230.9	140.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	KU, UTILITY	25.25	0.00	230.9	140.9	5.00	3.00	0.00	6	0	6
Totals:										19	386	406

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.79	33.94	12.42	22.49	7.96	13.64	1.60e+6	60.00	57.00	47.26	30,686	306.52	4.76

Pole Num:	99W - 27230-165	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.26	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.78	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.064004 Deg	Longitude:	-84.467702 Deg	Elevation:	850.739914624616		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.6	232.0
Groundline	39.6	232.0
Vertical	3.4	321.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,561	232.0
Groundline	37,561	232.0
GL Allowable	96,715	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	158.4	141.2		25.8	232.0	27.6	320.0
? EHS 3/8 (Span/Head)			28.1	37.2	232.0	43.8	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 251.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,325	183.3	69,372	184.7	71.7	4,867	733	6	4,873	71.7
Comms	284	22.4	6,552	17.4	6.8	460	571	5	465	6.8
GuyBraces	-1,725	-136.0	-48,640	-129.5	-50.3	-3,412	37	0	-3,412	-50.2
PowerEquipments	118	9.3	4,214	11.2	4.4	296	2,080	18	314	4.6
Pole	212	16.7	4,201	11.2	4.3	295	2,357	21	316	4.6
Crossarms	1	0.1	37	0.1	0.0	3	95	1	3	0.1
Streetlights	46	3.6	1,508	4.0	1.6	106	228	2	108	1.6
Insulators	8	0.6	318	0.9	0.3	22	78	1	23	0.3
Pole Load	1,268	100.0	37,561	100.0	38.8	2,635	6,179	54	2,689	39.6
Pole Reserve Capacity			59,154		61.2	4,165			4,111	60.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 251.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	772	60.8	26,760	71.3	27.7	1,877	3,137	28	1,905	28.0
Unknown, COMMUNICATION	284	22.4	6,562	17.5	6.8	460	590	5	466	6.8
Pole	212	16.7	4,201	11.2	4.3	295	2,357	21	316	4.6
<Undefined>	1	0.1	37	0.1	0.0	3	95	1	3	0.1
Totals:	1,268	100.0	37,561	100.0	38.8	2,635	6,179	54	2,689	39.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.62	0.00	0.7200	0.46	0.462	158.4	141.2	158.4	6,210	-112,007	0	2,153 -109,854
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.62	0.00	0.7200	0.21	0.462	106.1	321.1	106.1	6,210	112,545	0	1,442 113,987
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.78	45.33	0.7200	0.46	0.462	158.4	141.2	158.4	6,210	-109,704	387	2,109 -107,208
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.78	45.33	0.7200	0.21	0.462	106.1	321.1	106.1	6,210	110,231	259	1,412 111,902

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.78	45.33	0.7200	0.46	0.462	158.4	141.2	158.4	6,210	-109,704	-423	2,109	-108,018
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.78	45.33	0.7200	0.21	0.462	106.1	321.1	106.1	6,210	110,231	-283	1,412	111,360
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.39	6.77	0.3980	0.46	0.145	158.4	141.2	158.4	2,128	-27,752	28	1,146	-26,578
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.39	6.77	0.3980	0.21	0.145	106.1	321.1	106.1	2,128	27,885	19	767	28,671
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.68	6.82	0.3980	0.21	0.145	106.1	321.1	106.1	2,128	27,212	7	749	27,967
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.67	6.87	0.3980	0.21	0.145	106.1	321.1	106.1	2,128	26,259	7	723	26,988
Totals:											55,196	0	14,022	69,218	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.43	7.19	1.3300	2.30	0.337	158.4	141.2	158.4	925	-9,206	70	1,782	-7,353
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.43	7.19	1.3300	1.42	0.337	106.1	321.1	106.1	925	9,250	47	1,193	10,490
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.40	7.25	1.5000	2.71	0.900	158.4	141.2	158.4	2,000	-18,995	123	1,859	-17,013
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.40	7.25	1.5000	1.64	0.900	106.1	321.1	106.2	2,000	19,086	83	1,245	20,414
		COMMUNICATION													
Totals:											135	323	6,079	6,537	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	31.85	21.13	320.0	320.0	365.00	39.00	--	22.00	--	441	3,764	4,204
Totals:											441	3,764	4,204	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		38.97	5.46	141.1	141.1	50.00	4.50	3.50	96.00	-15	51	37
Totals:											-15	51	37

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	25.24	4.52	220.0	220.0	45.00	24.00	20.00	3.00	36.00	205	473	678

General	Streetlight - 8 ft. Arm	KU, UTILITY	24.33	4.57	330.0	330.0	75.00	24.00	20.00	3.00	96.00	169	657	826
Totals:											375	1,130	1,504	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.74	0.00	0.0	0.0	13.00	9.00	10.50	0	174	174
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.15	45.00	224.2	0.0	6.00	3.50	7.50	38	47	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.15	-45.00	58.0	0.0	6.00	3.50	7.50	-42	47	5
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.39	0.00	231.1	141.1	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.68	0.00	321.1	321.1	2.00	3.00	3.19	1	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.67	0.00	321.1	321.1	2.00	3.00	3.19	1	12	13
Bolt	Three Bolt	Unknown, COMMUNICATION	22.43	0.00	231.1	141.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.40	0.00	231.1	141.1	5.00	3.00	0.00	5	0	5
Totals:										11	307	317

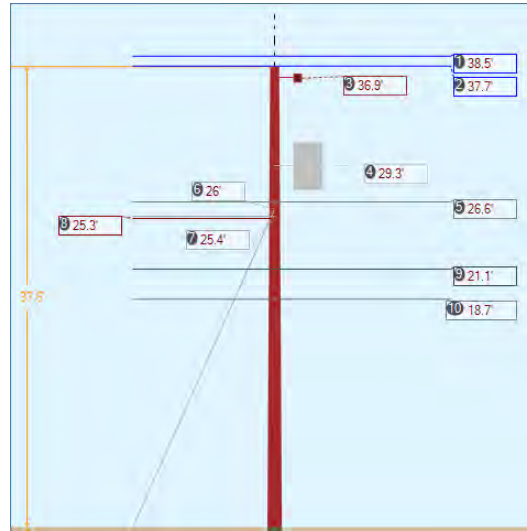
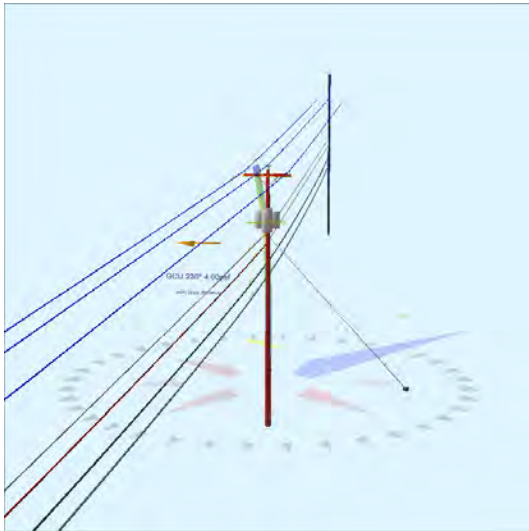
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	28.13	28.13	158.40	0.375	75.00	141.2	0.0	0.273	156.54	5.08

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	6,072	5,520	5,156	0	5,156	-1,763	-48,532
Totals:										0	5,156	-1,763	-48,532

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load² (lbs)	Load at Pole MCU³ (lbs)	Max Required Capacity² (%)
Single Helix Anchor		18.00	158.40	141.2	20,000	1.00	20,000	5,520	5,156	27.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.99	33.98	10.94	12.32	7.32	12.03	1.60e+6	60.00	57.00	39.74	179,835	1817.47	29.41

Pole Num:	100W - 26230-175	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.00	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.063657 Deg	Longitude:	-84.467367 Deg	Elevation:	848.767020063409		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	64.0	230.0
Groundline	10.2	102.7
Vertical	7.1	186.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,820	230.0
Groundline	8,283	102.7
GL Allowable	90,864	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	24.0	51.0		28.7	230.0	28.7	232.8
? EHS 3/8 (Down)			26.0	41.5	230.0	45.6	232.8
? Single Helix Anchor	158.4	321.2		11.7	230.0	13.5	140.0
? EHS 3/8 (Span/Head)			25.4	16.8	230.0	21.5	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 91.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-118	-20.6	-43,942	-530.5	-48.4	-1,550	897	8	-1,542	-22.7
Comms	-447	-78.4	-19,343	-233.5	-21.3	-682	673	6	-676	-9.9
GuyBraces	1,394	244.2	78,821	951.6	86.8	2,781	6,426	59	2,839	41.8
PowerEquipments	-95	-16.7	-544	-6.6	-0.6	-19	2,489	23	4	0.1
Pole	-157	-27.5	-6,302	-76.1	-6.9	-222	2,173	20	-202	-3.0
Crossarms	0	0.0	65	0.8	0.1	2	95	1	3	0.0
Insulators	-6	-1.1	-473	-5.7	-0.5	-17	74	1	-16	-0.2
Pole Load	571	100.0	8,283	100.0	9.1	292	12,828	118	410	6.0
Pole Reserve Capacity			82,581		90.9	6,508			6,390	94.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 91.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,175	205.8	33,882	409.1	37.3	1,195	9,868	91	1,286	18.9
Unknown, COMMUNICATION	-447	-78.4	-19,362	-233.8	-21.3	-683	692	6	-677	-10.0
Pole	-157	-27.5	-6,302	-76.1	-6.9	-222	2,173	20	-202	-3.0
<Undefined>	0	0.0	65	0.8	0.1	2	95	1	3	0.0
Totals:	571	100.0	8,283	100.0	9.1	292	12,828	118	410	6.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.52	0.00	0.7200	0.43	0.462	153.4	144.6	153.4	6,210	187,251	0	-1,676	185,575
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.52	0.00	0.7200	0.46	0.462	158.4	321.2	158.4	6,210	-201,665	0	-1,655	-203,320
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.71	45.33	0.7200	0.43	0.462	153.4	144.6	153.4	6,210	183,280	-294	-1,640	181,346
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.71	45.33	0.7200	0.46	0.462	158.4	321.2	158.4	6,210	-197,389	-304	-1,620	-199,312
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.71	45.33	0.7200	0.43	0.462	153.4	144.6	153.4	6,210	183,280	357	-1,640	181,997

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.71	45.33	0.7200	0.46	0.462	158.4	321.2	158.4	6,210	-197,389	369	-1,620	-198,640
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.60	6.81	0.3980	0.44	0.145	153.4	144.6	153.4	2,128	44,270	-22	-851	43,397
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.60	6.81	0.3980	0.46	0.145	158.4	321.2	158.4	2,128	-47,678	-23	-840	-48,541
Secondary	TRIPLEX 1/0	KU, UTILITY	25.26	6.89	1.0300	1.77	0.399	153.4	144.6	153.4	1,930	38,123	40	-1,377	36,787
Totals:											-7,918	123	-12,918	-20,713	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.11	7.14	1.3300	2.21	0.337	153.4	144.6	153.4	925	15,273	-56	-1,376	13,841
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.11	7.14	1.3300	2.30	0.337	158.4	321.2	158.4	925	-16,449	-58	-1,359	-17,866
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.66	7.28	1.5000	2.60	0.900	153.4	144.6	153.5	2,000	29,191	-100	-1,330	27,762
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.66	7.28	1.5000	2.71	0.900	158.4	321.2	158.4	2,000	-31,438	-103	-1,313	-32,854
		COMMUNICATION													
Totals:											-3,423	-317	-5,378	-9,118	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.34	22.15	140.0	140.0	640.00	47.00	--	24.00	--	1,490	-1,203	287
Transformer	1PH-15KVA	KU, UTILITY	29.34	21.15	140.0	140.0	335.00	34.00	--	22.00	--	1,053	-1,596	-543
Totals:											2,543	-2,799	-256	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		36.89	5.46	142.9	142.9	50.00	4.50	3.50	96.00	27	4	31
Totals:											27	4	31

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	37.65	0.00	0.0	0.0	13.00	9.00	10.50	0	-131	-131
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.08	45.00	226.0	0.0	6.00	3.50	7.50	-30	-36	-66

Pin	Pin Insulator - 5 kV	KU, UTILITY	37.08	-45.00	59.8	0.0	6.00	3.50	7.50	37	-36	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.60	0.00	232.9	142.9	2.00	3.00	3.19	-2	-9	-11
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.26	0.00	144.6	144.6	2.00	3.00	3.19	1	-9	-7
Bolt	Three Bolt	Unknown, COMMUNICATION	21.11	0.00	232.9	142.9	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	18.66	0.00	232.9	142.9	5.00	3.00	0.00	-4	0	-4
Totals:										-3	-220	-223

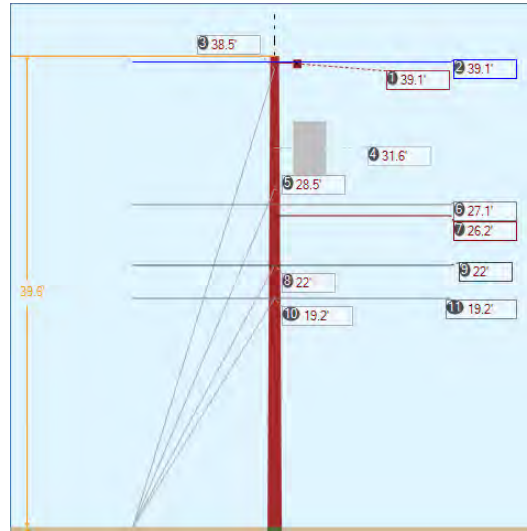
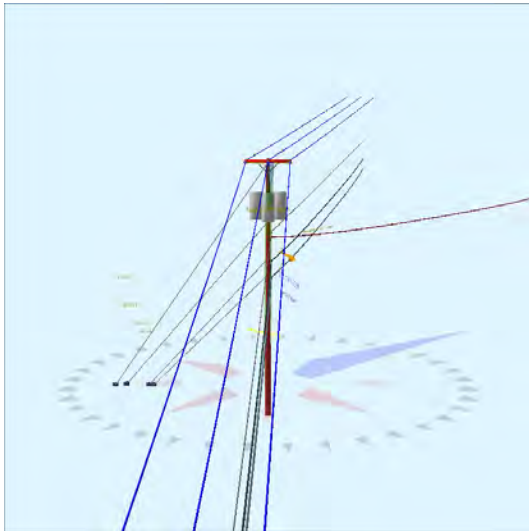
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	26.01	0.00	24.01	0.375	75.00	51.0	47.1	0.273	33.66	1.22
EHS 3/8	Span/Head	KU, UTILITY	25.43	25.43	158.40	0.375	75.00	321.2	0.0	0.273	156.54	2.30

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,323	5,748	5,747	4,212	3,909	2,968	76,389
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	2,974	2,704	2,331	0	2,331	-1,511	-39,235
Totals:										4,212	6,240	1,457	37,154

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	24.01	51.0	20,000	1.00	20,000	5,748	5,747	28.7
Single Helix Anchor			18.00	158.40	321.2	20,000	1.00	20,000	2,704	2,331	13.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.95	33.91	10.74	17.20	7.32	11.78	1.60e+6	60.00	57.00	37.65	180,496	1806.75	14.08

Pole Num:	101W - 27230-185	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.37	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.73	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.063319 Deg	Longitude:	-84.467034 Deg	Elevation:	854.616248446998		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.2	28.7
Groundline	28.3	0.0
Vertical	17.2	32.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,932	101.5
Groundline	27,061	135.8
GL Allowable	96,390	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	26.6	225.6		26.6	118.6	29.2	40.0
? EHS 3/8 (Down)			38.6	38.4	118.6	46.3	40.0
? Single Helix Anchor	24.8	226.8		12.3	118.6	13.6	60.0
? EHS 3/8 (Down)			28.5	17.7	118.6	21.6	60.0
? Single Helix Anchor	20.8	225.8		1.6	118.6	2.7	30.0
? EHS 1/4 (Down)			22.0	5.2	118.6	9.8	30.0
? Single Helix Anchor	19.9	226.0		1.2	118.6	2.2	40.0
? EHS 1/4 (Down)			19.3	4.1	118.6	7.9	40.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 135.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	125	17.6	7,120	26.3	7.4	502	886	8	510	7.5
Comms	56	7.9	1,172	4.3	1.2	83	710	6	89	1.3
GuyBraces	16	2.2	584	2.2	0.6	41	10,023	88	130	1.9
PowerEquipments	218	30.7	10,715	39.6	11.1	756	5,700	50	806	11.9
Pole	213	30.0	4,212	15.6	4.4	297	2,347	21	318	4.7
Crossarms	64	9.0	2,505	9.3	2.6	177	190	2	178	2.6
Insulators	20	2.7	753	2.8	0.8	53	61	1	54	0.8
Pole Load	712	100.0	27,061	100.0	28.1	1,910	19,917	176	2,085	30.7
Pole Reserve Capacity			69,329		71.9	4,890			4,715	69.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 135.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	367	51.5	18,931	70.0	19.6	1,336	16,038	142	1,477	21.7
Unknown, COMMUNICATION	68	9.5	1,413	5.2	1.5	100	1,342	12	112	1.6
Pole	213	30.0	4,212	15.6	4.4	297	2,347	21	318	4.7
<Undefined>	64	9.0	2,505	9.3	2.6	177	190	2	178	2.6
Totals:	712	100.0	27,061	100.0	28.1	1,910	19,917	176	2,085	30.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.13	22.57	0.7200	0.50	0.462	175.6	136.3	175.6	6,210	315,866	39	6	315,911
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.13	50.34	0.7200	0.50	0.462	175.6	136.3	175.6	6,210	315,866	17	6	315,889
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.13	50.34	0.7200	0.50	0.462	175.6	136.3	175.6	6,210	315,866	18	6	315,890
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.13	50.34	0.7200	0.39	0.462	153.4	324.6	153.4	6,210	-312,187	-15	143	-312,059
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.13	22.57	0.7200	0.39	0.462	153.4	324.6	153.4	6,210	-312,187	-34	143	-312,078
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.13	50.34	0.7200	0.39	0.462	153.4	324.6	153.4	6,210	-312,187	-16	143	-312,060
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.14	6.90	0.3980	0.43	0.145	175.6	136.3	175.6	2,128	75,078	3	3	75,083
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.14	6.90	0.3980	0.33	0.145	153.4	324.6	153.4	2,128	-74,203	2	73	-74,128
Secondary	TRIPLEX 1/0	KU, UTILITY	26.21	6.95	1.0300	0.86	0.399	82.0	1.6	82.1	250	-5,943	5	612	-5,326
										Totals:	5,968	20	1,134	7,122	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.04	7.20	1.3300	2.59	0.337	175.6	136.3	175.6	925	26,506	7	5	26,518
CATV	CATV 1.0	Unknown, COMMUNICATION	22.04	7.20	1.3300	2.18	0.337	153.4	324.6	153.4	925	-26,198	6	121	-26,071

Telco	TELE 1.5	Unknown, COMMUNICATION	19.25	7.37	1.5000	3.09	0.900	175.6	136.3	175.7	2,000	50,046	12	5	50,063
Telco	TELE 1.5	Unknown, COMMUNICATION	19.25	7.37	1.5000	2.58	0.900	153.4	324.6	153.5	2,000	-49,463	10	115	-49,338
Totals:											892	35	246	1,172	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-100KVA KU, UTILITY	31.58	24.14	135.0	135.0	1000.00	56.00	--	28.00	--	3,821	6,896	10,717
Totals:											3,821	6,896	10,717

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	39.13	5.44	136.3	136.3	50.00	4.50	3.50	96.00	0	2,505	2,505	
Totals:											0	2,505	2,505

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 17.13" KU, UTILITY	39.13	0.00	136.3	0.0	3.00	3.90	17.13	11	121	132	
Deadend	Deadend 17.13" KU, UTILITY	39.13	45.00	219.4	0.0	3.00	3.90	17.13	11	121	132	
Deadend	Deadend 17.13" KU, UTILITY	39.13	-45.00	53.2	0.0	3.00	3.90	17.13	11	121	132	
Deadend	Deadend 17.13" KU, UTILITY	39.13	-45.00	39.4	180.0	3.00	3.90	17.13	-11	121	111	
Deadend	Deadend 17.13" KU, UTILITY	39.13	0.00	316.3	180.0	3.00	3.90	17.13	-11	121	111	
Deadend	Deadend 17.13" KU, UTILITY	39.13	45.00	233.2	180.0	3.00	3.90	17.13	-11	121	110	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.14	0.00	50.4	320.4	2.00	3.00	3.19	0	12	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	26.21	0.00	54.6	324.6	2.00	3.00	3.19	0	12	12	
Bolt	Three Bolt Unknown, COMMUNICATION	22.04	0.00	50.4	320.4	5.00	3.00	0.00	0	0	0	
Bolt	Three Bolt Unknown, COMMUNICATION	19.25	0.00	50.4	320.4	5.00	3.00	0.00	0	0	0	
Totals:										1	752	753

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	38.55	0.00	26.62	0.375	75.00	225.6	55.2	0.273	45.17	1.51
EHS 3/8	Down	KU, UTILITY	28.46	0.00	24.77	0.375	75.00	226.8	48.8	0.273	35.99	0.56
EHS 1/4	Down	Unknown, COMMUNICATION	22.04	0.00	20.81	0.25	75.00	225.8	46.5	0.121	28.55	0.13
EHS 1/4	Down	Unknown, COMMUNICATION	19.25	0.00	19.93	0.25	75.00	226.0	43.9	0.121	25.92	0.09

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,422	5,838	5,317	4,365	3,036	12	892
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,991	2,719	2,456	1,848	1,617	-29	-548
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	587	534	313	227	216	0	140
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	473	430	245	170	177	-1	100
Totals:										6,610	5,045	-17	584

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	26.62	225.6	20,000	1.00	20,000	5,838	5,317	29.2
Single Helix Anchor			18.00	24.77	226.8	20,000	1.00	20,000	2,719	2,456	13.6
Single Helix Anchor			18.00	20.81	225.8	20,000	1.00	20,000	534	313	2.7
Single Helix Anchor			18.00	19.93	226.0	20,000	1.00	20,000	430	245	2.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	32.13	34.75	10.69	23.73	7.32	12.02	1.60e+6	60.00	57.00	39.63	115,775	1157.97	5.81

32' 2" - 49W - 73819-35495

23' - Lowest Power

20' 8" - Proposed Metronet

19' 6" - Highest Tel Cable

19' 5" - Highest Tel Drop

4' - Base offset

Base



33' 5" - 50W - 72925-35389

25' - Lowest Power

20' 9" - Proposed Metronet

19' 3" - Highest Tel Drop

18' 10" - Highest Tel Cable

4' - Base offset

Base

32' 10" - 51W - 73024-35299

26' 11" - Lowest Power

22' 7" - Proposed Metronet

20' - Highest Tel Cable

4' - Base offset

Base

34' 2" - 52W - 73126-35187

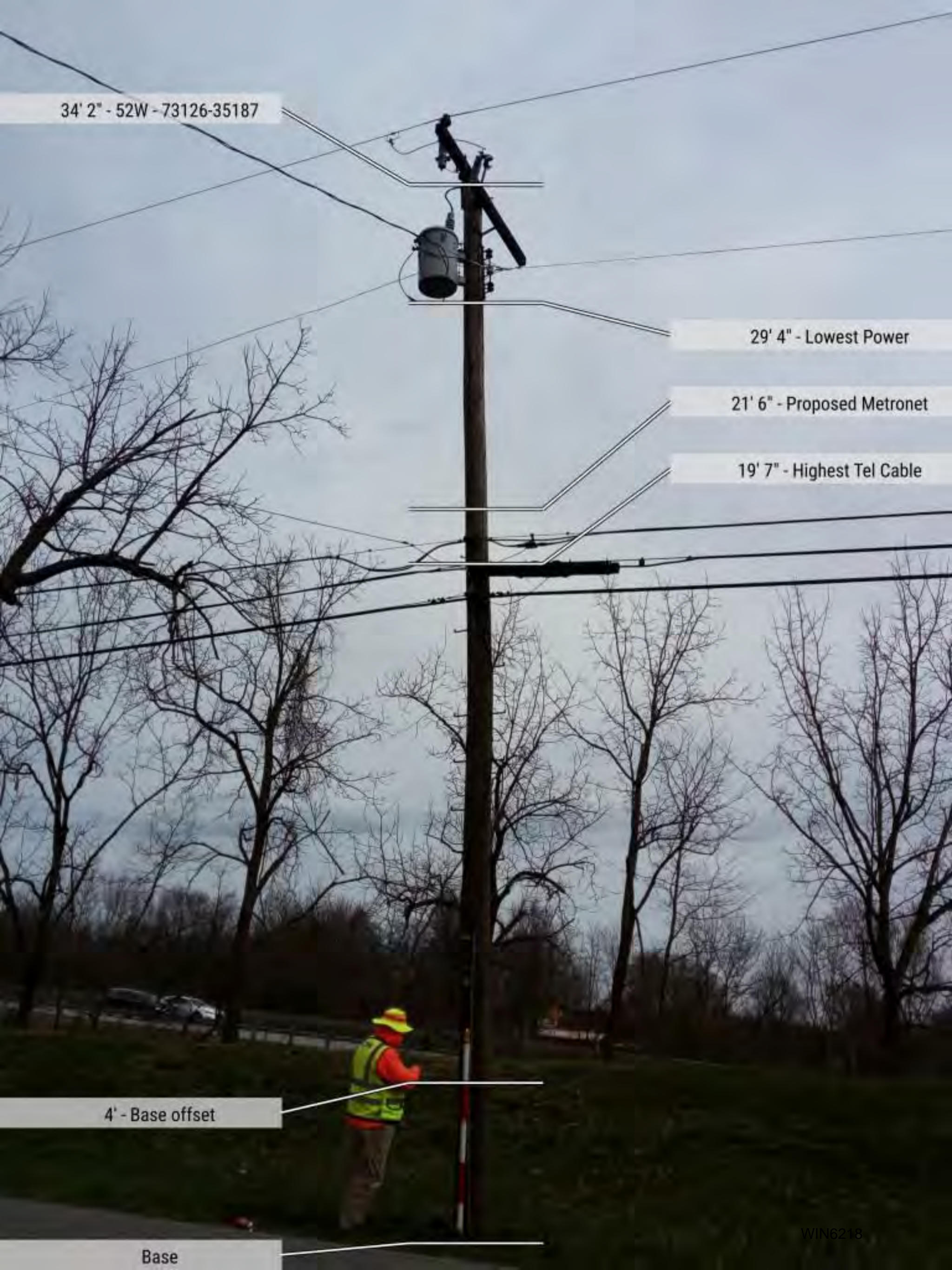
29' 4" - Lowest Power

21' 6" - Proposed Metronet

19' 7" - Highest Tel Cable

4' - Base offset

Base



34' 5" - 53W - 73232-35080

26' 10" - Lowest Power

22' 9" - Proposed Metronet

22' 5" - Proposed Metronet

20' 10" - Highest Tel Cable

4' - Base offset

Base

34' 7" - 54W - 73232-24995

26' - Lowest Power

22' 3" - Proposed Metronet

22' - Proposed Metronet

21' 9" - Highest Tel Cable

4' - Base offset

Base

33' 9" - 55W - 73389-34841

22' 11" - Lowest Power

22' 2" - Proposed Metronet

20' 10" - Highest Tel Cable

4' - Base offset

Base

WIN6221

32' 3" - 56W - 73490-34744

26' 10" - Lowest Power

20' 4" - Proposed Metronet

18' 2" - Highest Tel Cable

17' 1" - Highest Tel Drop

4' - Base offset

Base

34' 1" - 57W - 73559-34679

27' 8" - Lowest Power

23' 10" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

Base

WIN6223

33' 6" - 62W - 73669-33890

26' 10" - Lowest Power

20' - Proposed Metronet

19' 8" - Proposed Metronet

4' - Base offset

Base

43' 5" - 63W - 72562-34027

33' 8" - Lowest Power

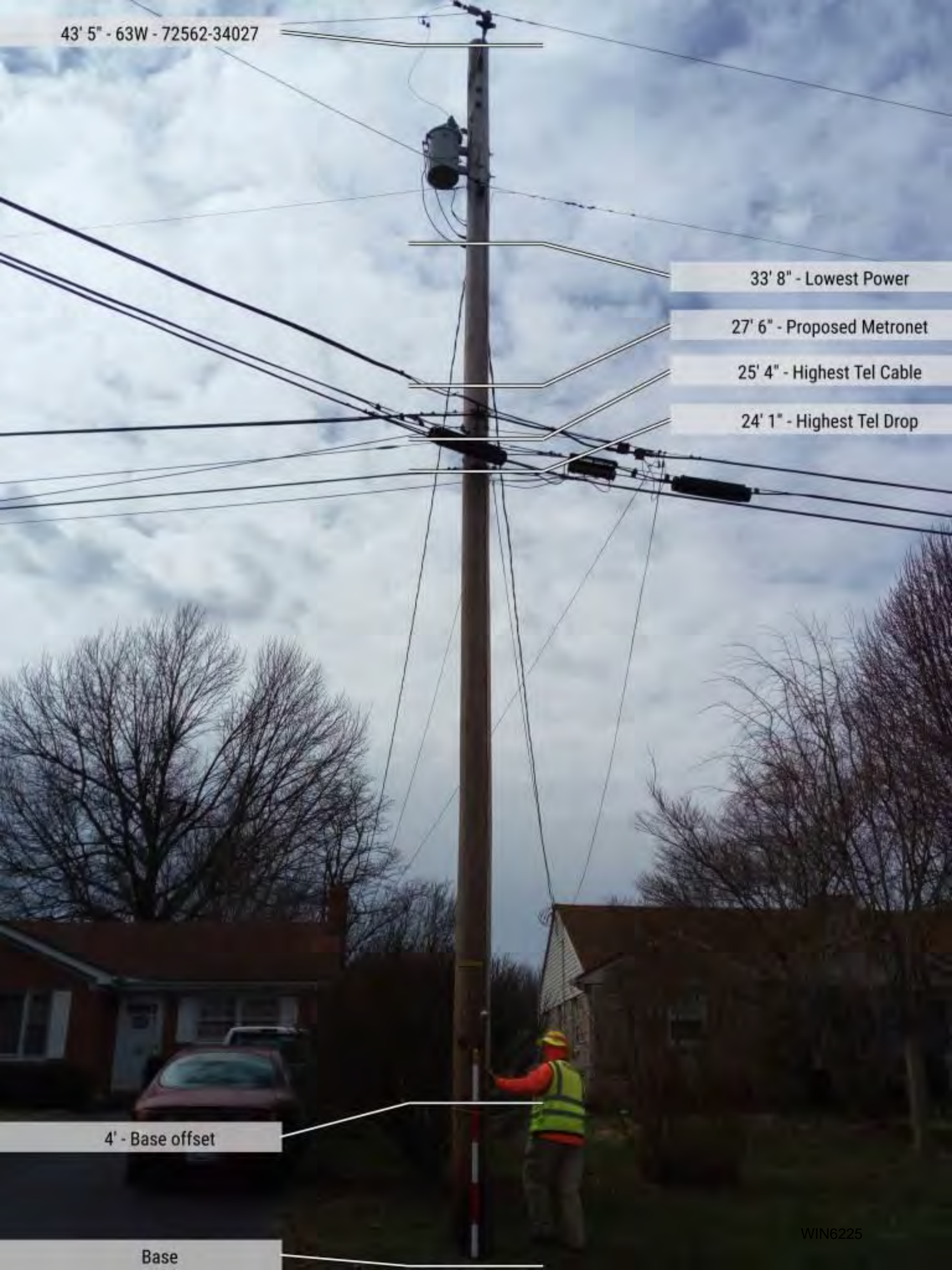
27' 6" - Proposed Metronet

25' 4" - Highest Tel Cable

24' 1" - Highest Tel Drop

4' - Base offset

Base



33' 9" - 64W - 72452-34137

26' 10" - Lowest Power

22' 8" - Proposed Metronet

20' 3" - Highest Tel Cable

20' 3" - Highest Tel Drop

4' - Base offset

Base

31' 2" - 65W - 72326-34263

23' 7" - Lowest Power

19' 7" - Proposed Metronet

17' 11" - Highest Tel Drop

17' 8" - Highest Tel Cable

4' - Base offset

Base

34' 1" - 66W - 72217-34372

25' - Lowest Power

19' 11" - Proposed Metronet

17' 9" - Highest Tel Cable

17' 9" - Highest Tel Drop

4' - Base offset

Base

WIN6228

33' 4" - 67W - 72098-34492

25' 5" - Lowest Power

20' 11" - Proposed Metronet

19' 2" - Highest Tel Drop

18' 11" - Highest Tel Cable

4' - Base offset

Base

32' 8" - 68W - 72018-34572

24' 11" - Lowest Power

19' 10" - Proposed Metronet

17' 6" - Highest Tel Cable

17' 6" - Highest Tel Drop

4' - Base offset

Base

33' - 69W - 71971-34621

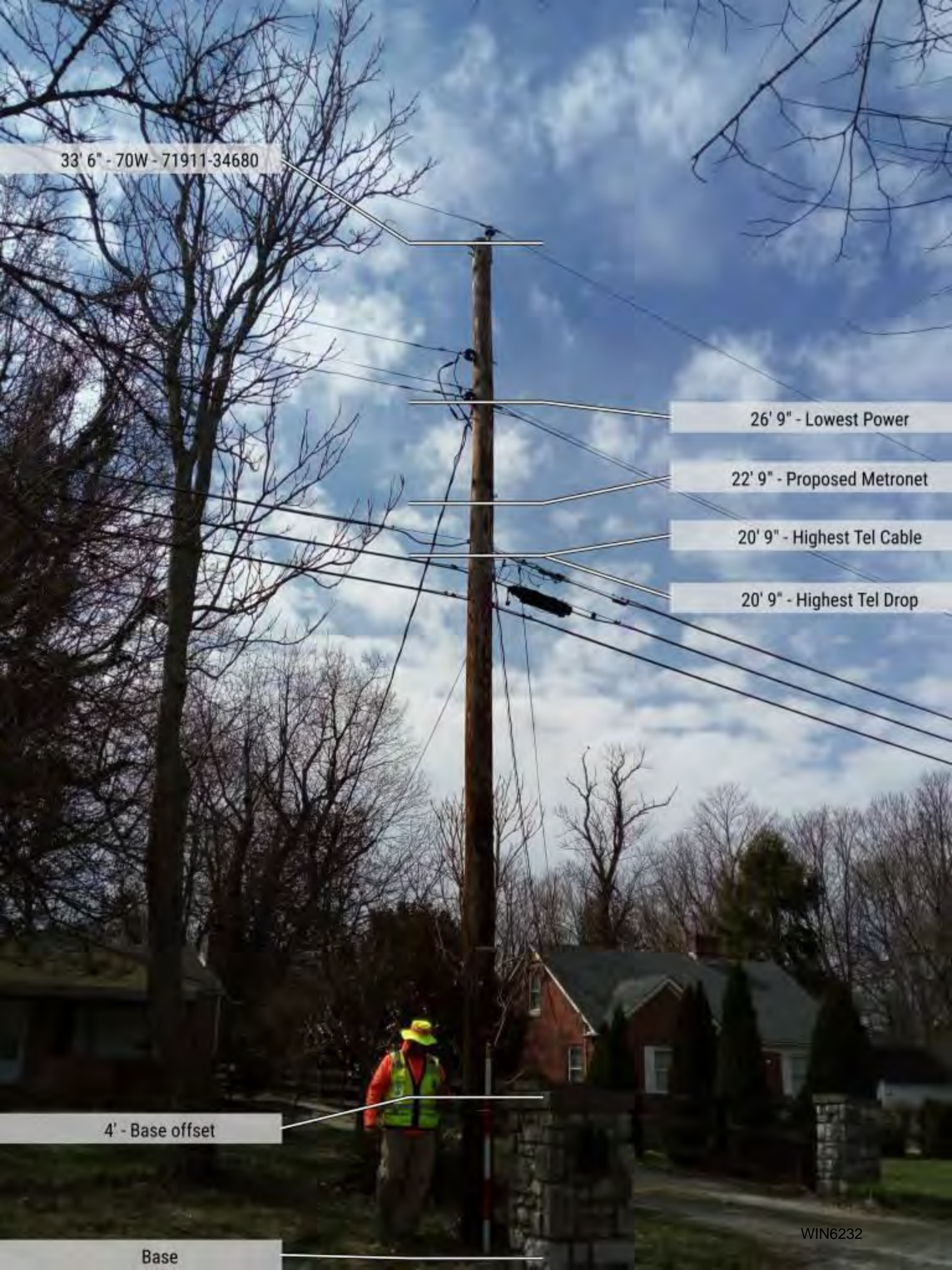
23' 5" - Lowest Power

19' 3" - Proposed Metronet

17' 2" - Highest Tel Cable

4' - Base offset

Base



33' 6" - 70W - 71911-34680

26' 9" - Lowest Power

22' 9" - Proposed Metronet

20' 9" - Highest Tel Cable

20' 9" - Highest Tel Drop

4' - Base offset

Base

34' 6" - 71W - 71813-34779

26' 6" - Lowest Power

21' 9" - Proposed Metronet

20' - Highest Tel Cable

20' - Highest Tel Drop

4' - Base offset

Base



51' 9" - 92W - 70678-34125

47' 1" - Lowest Power

29' 2" - Proposed Metronet

21' 5" - Highest Tel Cable

4' - Base offset

Base

46' 9" - 97W - 27230-159

28' 9" - Lowest Power
26' - Proposed Metronet
26' - Highest Tel Cable

4' - Base offset

Base

47' 2" - 98W - 27230-155

31' 3" - Lowest Power

28' 3" - Proposed Metronet

25' 3" - Highest Tel Cable

4' - Base offset

Base

39' 10" - 99W - 27230-165

24' 4" - Lowest Power

23' 4" - Proposed Metronet

21' 5" - Highest Tel Cable

21' 5" - Highest Tel Drop

4' - Base offset

Base

37' 6" - 100W - 26230-175

24' - Lowest Power

20' 8" - Proposed Metronet

18' 8" - Highest Tel Cable

4' - Base offset

Base

39' 10" - 101W - 27230-185

22' 3" - Lowest Power

19' 3" - Highest Tel Cable

18' 11" - Proposed Metronet

18' 6" - Highest Tel Drop

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, March 19, 2018 3:05 PM
To: Windstream Jointuse
Cc: Permits; Hays, Sarah K
Subject: LX167-03W
Attachments: LX167-03W - Windstream Inventory Report.pdf; LX167-03W POLE APP MAP 102-170.pdf; O-Calcs.pdf; Pole Photos.pdf; LX167-03W - METRONET POLE INVENTORY REPORT.XLSX; Map Key.pdf

Good Afternoon,
Please see attached for proposal titled LX167-03W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX167-03W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		102W NT	50/2	WS	2=Comms	
KU	0	102W NT		WS		
Windstream	25	102W NT		WS		
Total Pole Count	25	102W NT		WS		
Total Needing Make Ready	22	102W NT		WS		
		102W NT		WS		
		103W 236-315	45/3	WS	2=Comms	
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		103W 236-315		WS		
		104W 236-217	40/2	WS	2=Comms	
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		104W 236-217		WS		
		105W NT	35/5	WS	2=Comms	
		105W NT		WS		
		105W NT		WS		
		105W NT		WS		

105W NT			WS	
105W NT			WS	
105W NT			WS	
105W NT			WS	
105W NT			WS	
105W NT			WS	
105W NT			WS	
105W NT			WS	
105W NT			WS	
105W NT			WS	
106W 27230-245	40/3		WS	2=Comms
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
106W 27230-245			WS	
107W 26230-241-01	40/4		WS	2=Comms
107W 26230-241-01			WS	
107W 26230-241-01			WS	
107W 26230-241-01			WS	
107W 26230-241-01			WS	
107W 26230-241-01			WS	
107W 26230-241-01			WS	
107W 26230-241-01			WS	
107W 26230-241-01			WS	
107W 26230-241-01			WS	
108W 27230-243	40/4		WS	3=Elec
108W 27230-243			WS	
108W 27230-243			WS	
108W 27230-243			WS	
108W 27230-243			WS	
108W 27230-243			WS	
108W 27230-243			WS	
108W 27230-243			WS	
108W 27230-243			WS	
108W 27230-243			WS	
109W NT	40/4		WS	2=Comms
109W NT			WS	
109W NT			WS	
109W NT			WS	
109W NT			WS	
109W NT			WS	
109W NT			WS	
109W NT			WS	
109W NT			WS	
109W NT			WS	

109W NT		WS	
109W NT		WS	
109W NT		WS	
110W NT	40/3	WS	2=Comms
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
110W NT		WS	
111W 27230-265	40/3	WS	2=Comms
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
111W 27230-265		WS	
112W 26230-283	40/4	WS	3=Elec
112W 26230-283		WS	
112W 26230-283		WS	
112W 26230-283		WS	
112W 26230-283		WS	
112W 26230-283		WS	
112W 26230-283		WS	
112W 26230-283		WS	
157W 75128-32621	40/4	WS	2=Comms
157W 75128-32621		WS	
157W 75128-32621		WS	
157W 75128-32621		WS	
157W 75128-32621		WS	
157W 75128-32621		WS	
157W 75128-32621		WS	
157W 75128-32621		WS	

162W 73777-3300		WS	
162W 73777-3300		WS	
162W 73777-3300		WS	
162W 73777-3300		WS	
162W 73777-3300		WS	
162W 73777-3300		WS	
162W 73777-3300		WS	
162W 73777-3300		WS	
162W 73777-3300		WS	
163W 73685-33103	40/4	WS	2=Comms
163W 73685-33103		WS	
163W 73685-33103		WS	
163W 73685-33103		WS	
163W 73685-33103		WS	
163W 73685-33103		WS	
163W 73685-33103		WS	
163W 73685-33103		WS	
163W 73685-33103		WS	
163W 73685-33103		WS	
164W 73555-33260	45/3	WS	2=Comms
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
164W 73555-33260		WS	
165W 73666-33365	40/4	WS	2=Comms
165W 73666-33365		WS	
165W 73666-33365		WS	
165W 73666-33365		WS	
165W 73666-33365		WS	
165W 73666-33365		WS	
165W 73666-33365		WS	
165W 73666-33365		WS	
166W 73746-33441	40/4	WS	2=Comms
166W 73746-33441		WS	
166W 73746-33441		WS	
166W 73746-33441		WS	

166W	73746-33441		WS	
166W	73746-33441		WS	
166W	73746-33441		WS	
166W	73746-33441		WS	
166W	73746-33441		WS	
166W	73746-33441		WS	
167W	73826-33517	40/4	WS	2=Comms
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
167W	73826-33517		WS	
168W	73906-33593	40/4	WS	2=Comms
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
168W	73906-33593		WS	
169W	73985-33669	40/4	WS	2=Comms
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
169W	73985-33669		WS	
170W	74065-33744	45/4	WS	1=None
170W	74065-33744		WS	
170W	74065-33744		WS	
170W	74065-33744		WS	

170W 74065-33744	WS
170W 74065-33744	WS
170W 74065-33744	WS
170W 74065-33744	WS
170W 74065-33744	WS
170W 74065-33744	WS
170W 74065-33744	WS

END

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
35.20	185 E NEW CIRCLE RD	38.06299	-84.46661	KU		
		38.06299	-84.46661	KU		
		38.06299	-84.46661	Metronet		
		38.06299	-84.46661	B&V		
Lower Charter		38.06299	-84.46661	Charter		
Lower Windstream		38.06299	-84.46661	Windstream		
14.30	200 BRYAN CENTER DR	38.06258	-84.46629	KU		
		38.06258	-84.46629	KU		
		38.06258	-84.46629	KU		
		38.06258	-84.46629	KU		
		38.06258	-84.46629	KU		
		38.06258	-84.46629	Metronet		
		38.06258	-84.46629	B&V		
Lower Charter		38.06258	-84.46629	Charter		
Lower Windstream		38.06258	-84.46629	Windstream		
		38.06258	-84.46629	Windstream		
54.80	273 E NEW CIRCLE RD	38.06238	-84.46608	KU		
		38.06238	-84.46608	KU		
		38.06238	-84.46608	KU		
		38.06238	-84.46608	KU		
		38.06238	-84.46608	KU		
		38.06238	-84.46608	KU		
		38.06238	-84.46608	KU		
		38.06238	-84.46608	KU		
		38.06238	-84.46608	Metronet		
		38.06238	-84.46608	B&V		
Lower Charter		38.06238	-84.46608	Charter		
Lower Windstream		38.06238	-84.46608	Windstream		
Lower Windstream		38.06238	-84.46608	Windstream		
41.10	273 E NEW CIRCLE RD	38.06213	-84.46585	KU		
		38.06213	-84.46585	KU		
		38.06213	-84.46585	KU		
		38.06213	-84.46585	KU		

		38.06213	-84.46585	KU
		38.06213	-84.46585	KU
		38.06213	-84.46585	KU
		38.06213	-84.46585	Metronet
		38.06213	-84.46585	B&V
Lower Charter		38.06213	-84.46585	Charter
Lower Windstream		38.06213	-84.46585	Windstream
Lower Windstream		38.06213	-84.46585	Windstream
	34.80 273 E NEW CIRCLE RD	38.06204	-84.46575	KU
		38.06204	-84.46575	KU
		38.06204	-84.46575	KU
		38.06204	-84.46575	KU
		38.06204	-84.46575	KU
		38.06204	-84.46575	Metronet
		38.06204	-84.46575	B&V
Lower Charter		38.06204	-84.46575	Charter
Lower Windstream		38.06204	-84.46575	Windstream
Lower Windstream		38.06204	-84.46575	Windstream
	57.10 273 E NEW CIRCLE RD	38.06179	-84.46548	KU
		38.06179	-84.46548	KU
		38.06179	-84.46548	KU
		38.06179	-84.46548	KU
		38.06179	-84.46548	Metronet
		38.06179	-84.46548	B&V
Lower Charter		38.06179	-84.46548	Charter
Lower Windstream		38.06179	-84.46548	Windstream
Attach to pole		38.06179	-84.46548	Windstream
	34.10 273 E NEW CIRCLE RD	38.06171	-84.46543	KU
		38.06171	-84.46543	KU
Raise OH Guy		38.06171	-84.46543	KU
Raise OH Guy		38.06171	-84.46543	KU
		38.06171	-84.46543	Metronet
		38.06171	-84.46543	B&V
		38.06171	-84.46543	Charter
		38.06171	-84.46543	Windstream
		38.06171	-84.46543	Windstream
	52.30 273 E NEW CIRCLE RD	38.06139	-84.46510	KU
		38.06139	-84.46510	KU
		38.06139	-84.46510	KU
		38.06139	-84.46510	KU
		38.06139	-84.46510	KU
		38.06139	-84.46510	KU
		38.06139	-84.46510	KU
		38.06139	-84.46510	Metronet
		38.06139	-84.46510	B&V

Lower Charter	38.06139	-84.46510	Charter
	38.06139	-84.46510	Windstream
	38.06139	-84.46510	Windstream
37.50 273 E NEW CIRCLE RD	38.06114	-84.46485	KU
	38.06114	-84.46485	KU
	38.06114	-84.46485	KU
	38.06114	-84.46485	KU
	38.06114	-84.46485	KU
	38.06114	-84.46485	KU
	38.06114	-84.46485	KU
	38.06114	-84.46485	Metronet
	38.06114	-84.46485	B&V
Lower Charter	38.06114	-84.46485	Charter
Lower Windstream	38.06114	-84.46485	Windstream
Lower Windstream	38.06114	-84.46485	Windstream
62.00 273 E NEW CIRCLE RD	38.06108	-84.46480	KU
	38.06108	-84.46480	KU
	38.06108	-84.46480	KU
	38.06108	-84.46480	KU
	38.06108	-84.46480	KU
	38.06108	-84.46480	KU
	38.06108	-84.46480	Metronet
	38.06108	-84.46480	B&V
Lower Charter	38.06108	-84.46480	Charter
Lower Windstream	38.06108	-84.46480	Windstream
Lower Windstream	38.06108	-84.46480	Windstream
37.90 273 E NEW CIRCLE RD	38.06077	-84.46448	KU
	38.06077	-84.46448	KU
Raise OH Guy	38.06077	-84.46448	KU
	38.06077	-84.46448	Metronet
	38.06077	-84.46448	B&V
	38.06077	-84.46448	Charter
	38.06077	-84.46448	Windstream
	38.06077	-84.46448	Windstream
38.20 372 HERMITAGE DR	38.06590	-84.45068	KU
	38.06590	-84.45068	KU
	38.06590	-84.45068	KU
	38.06590	-84.45068	KU
	38.06590	-84.45068	KU
	38.06590	-84.45068	Metronet
Lower Charter	38.06590	-84.45068	Charter
Lower Windstream	38.06590	-84.45068	Windstream

54.20	364 HERMITAGE DR	38.06615	-84.45095	KU
		38.06615	-84.45095	KU
		38.06615	-84.45095	KU
		38.06615	-84.45095	KU
		38.06615	-84.45095	KU
		38.06615	-84.45095	KU
		38.06615	-84.45095	Metronet
Lower Charter		38.06615	-84.45095	Charter
Lower Windstream		38.06615	-84.45095	Windstream
52.20	360 HERMITAGE DR	38.06640	-84.45123	KU
		38.06640	-84.45123	KU
		38.06640	-84.45123	KU
		38.06640	-84.45123	KU
		38.06640	-84.45123	KU
		38.06640	-84.45123	KU
		38.06640	-84.45123	KU
		38.06640	-84.45123	Metronet
Lower Charter		38.06640	-84.45123	Charter
Lower Windstream		38.06640	-84.45123	Windstream
39.30	352 HERMITAGE DR	38.06655	-84.45139	KU
		38.06655	-84.45139	KU
		38.06655	-84.45139	KU
		38.06655	-84.45139	KU
		38.06655	-84.45139	KU
		38.06655	-84.45139	KU
		38.06655	-84.45139	KU
		38.06655	-84.45139	KU
		38.06655	-84.45139	Metronet
		38.06655	-84.45139	Charter
		38.06655	-84.45139	Windstream
56.20	343 WICKLAND CT	38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	KU
		38.06677	-84.45167	Metronet
		38.06677	-84.45167	Charter
		38.06677	-84.45167	Windstream
39.00	340 HERMITAGE DR	38.06701	-84.45193	KU

		38.06701	-84.45193	KU
		38.06701	-84.45193	KU
		38.06701	-84.45193	KU
		38.06701	-84.45193	KU
		38.06701	-84.45193	KU
		38.06701	-84.45193	Metronet
Lower Charter		38.06701	-84.45193	Charter
Lower Windstream		38.06701	-84.45193	Windstream
	54.80 1896 WICKLAND DR	38.06724	-84.45218	KU
		38.06724	-84.45218	KU
		38.06724	-84.45218	KU
		38.06724	-84.45218	KU
		38.06724	-84.45218	KU
		38.06724	-84.45218	KU
		38.06724	-84.45218	KU
		38.06724	-84.45218	Metronet
Lower Charter		38.06724	-84.45218	Charter
Lower & Resag Windstream		38.06724	-84.45218	Windstream
	46.20 1889 WICKLAND DR	38.06762	-84.45262	KU
		38.06762	-84.45262	KU
		38.06762	-84.45262	KU
		38.06762	-84.45262	KU
		38.06762	-84.45262	KU
		38.06762	-84.45262	KU
		38.06762	-84.45262	KU
		38.06762	-84.45262	Metronet
		38.06762	-84.45262	Metronet
Lower Charter		38.06762	-84.45262	Charter
Lower Charter		38.06762	-84.45262	Charter
Lower Windstream		38.06762	-84.45262	Windstream
Lower Windstream		38.06762	-84.45262	Windstream
	29.10 1901 WICKLAND DR	38.06784	-84.45231	KU
		38.06784	-84.45231	KU
		38.06784	-84.45231	KU
		38.06784	-84.45231	KU
		38.06784	-84.45231	KU
		38.06784	-84.45231	Metronet
Lower Charter		38.06784	-84.45231	Charter
Lower Windstream		38.06784	-84.45231	Windstream
	29.70 1905 WICKLAND DR	38.06806	-84.45200	KU
		38.06806	-84.45200	KU
		38.06806	-84.45200	KU
		38.06806	-84.45200	KU

		38.06806	-84.45200	KU
		38.06806	-84.45200	KU
		38.06806	-84.45200	KU
		38.06806	-84.45200	Metronet
Lower Charter		38.06806	-84.45200	Charter
		38.06806	-84.45200	Windstream
	31.60 1917 WICKLAND DR	38.06828	-84.45168	KU
		38.06828	-84.45168	KU
		38.06828	-84.45168	KU
		38.06828	-84.45168	KU
		38.06828	-84.45168	KU
		38.06828	-84.45168	KU
		38.06828	-84.45168	KU
		38.06828	-84.45168	KU
		38.06828	-84.45168	Metronet
Lower Charter		38.06828	-84.45168	Charter
Lower Windstream		38.06828	-84.45168	Windstream
	28.80 1921 WICKLAND DR	38.06851	-84.45138	KU
		38.06851	-84.45138	KU
		38.06851	-84.45138	KU
		38.06851	-84.45138	KU
		38.06851	-84.45138	KU
		38.06851	-84.45138	KU
		38.06851	-84.45138	KU
		38.06851	-84.45138	KU
		38.06851	-84.45138	Metronet
Lower Charter		38.06851	-84.45138	Charter
Lower Windstream		38.06851	-84.45138	Windstream
	19.10 1933 WICKLAND DR	38.06874	-84.45108	KU
		38.06874	-84.45108	KU
		38.06874	-84.45108	KU
		38.06874	-84.45108	KU
		38.06874	-84.45108	KU
		38.06874	-84.45108	KU
		38.06874	-84.45108	KU
		38.06874	-84.45108	KU
		38.06874	-84.45108	Metronet
Lower Charter		38.06874	-84.45108	Charter
Lower Windstream		38.06874	-84.45108	Windstream
	45.70 1937 WICKLAND DR	38.06894	-84.45079	KU
		38.06894	-84.45079	KU
		38.06894	-84.45079	KU
		38.06894	-84.45079	KU

38.06894	-84.45079	KU
38.06894	-84.45079	KU
38.06894	-84.45079	KU
38.06894	-84.45079	KU
38.06894	-84.45079	Metronet
38.06894	-84.45079	Charter
38.06894	-84.45079	Windstream

	g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Power	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
Primary	40' 8"					N	N		B: Residential/Over Driveways		
Neutral	31' 1"					N	N				
Communication		25' 7"				N	N				
Pending Permit		24' 7"				N	N				
Communication	23' 7"			80		N	N				
Communication	22' 7"		16' 7"			N	N				
Primary	37' 3"					Y	N		D: Pedestrian Only 9.5'		
Transformer	28' 5"					Y	N				
Neutral	27' 0"					Y	N				
Secondary Riser	24' 7"					Y	N				
Streetlight	23' 9"					Y	N				
Communication		21' 0"				Y	N				
Pending Permit		20' 0"				Y	N				
Communication	23' 6"	19' 0"		73		Y	N				
Communication	20' 0"	18' 0"				Y	N				
Communication	18' 5"		13' 1"			Y	N				
Primary	31' 2"					N	N		D: Pedestrian Only 9.5'		
Transformer	24' 10"					N	N				
Neutral	23' 4"					N	N				
Secondary	22' 6"					N	N				
Secondary	21' 10"					N	N				
Secondary	21' 1"					N	N				
Streetlight	19' 8"					N	N				
Streetlight Drip Loop	19' 1"					N	N				
Communication		17' 9"				N	N				
Pending Permit		16' 9"				N	N				
Communication	17' 9"	15' 9"		32		N	N				
Communication	15' 9"	14' 9"				N	N				
Communication	14' 9"	13' 9"	11' 11"			N	N				
Primary	28' 11"					N	N		D: Pedestrian Only 9.5'		
Neutral	23' 7"					N	N				
Secondary	22' 10"					N	N				
Secondary	22' 1"					N	N				

Secondary	21' 1"			N	N
Streetlight	19' 10"			N	N
Streetlight Drip Loop	18' 11"			N	N
Communication		17'7"		N	N
Pending Permit		16'7"		N	N
Communication	16' 7"	15'5"	54	N	N
Communication	15' 5"	14'5"		N	N
Communication	14' 4"	13'5"	13'5"	N	N
Primary	33' 8"			N	N D: Pedestrian Only 9.5'
Neutral	27' 3"			N	N
Secondary	26' 1"			N	N
Secondary	25' 2"			N	N
Secondary	24' 4"			N	N
Communication		21'0"		N	N
Pending Permit		20'0"		N	N
Communication	19' 4"	19'0"	50	N	N
Communication	18' 0"			N	N
Communication	16' 6"		15'7"	N	N
Primary	32' 3"			N	N D: Pedestrian Only 9.5'
Primary Riser	25' 4"			N	N
Neutral	25' 0"			N	N
OH Guy	23' 2"			N	N
Communication		21'4"		N	N
Pending Permit		20'4"		N	N
Communication	21' 4"	19'2"	50	N	N
Communication	19' 2"	18'2"		N	N
Communication		17'2"	18'2"	N	N
Primary	35' 1"			N	N D: Pedestrian Only 9.5'
Neutral	27' 11"			N	N
OH Guy	23' 9"	25'11"		N	N
OH Guy	23' 5"	25'7"		N	N
Communication		24'7"		N	N
Pending Permit		23'7"		N	N
Communication	22' 7"		66	N	N
Communication	19' 7"			N	N
Communication	18' 5"		18'3"	N	N
Primary	33' 2"			N	N D: Pedestrian Only 9.5'
Neutral	26' 10"			N	N
Neutral	25' 3"			N	N
Secondary	24' 7"			N	N
Secondary	23' 11"			N	N
Secondary	23' 2"			N	N
Streetlight	20' 1"			N	N
Communication		18'8"		N	N
Pending Permit		17'8"		N	N

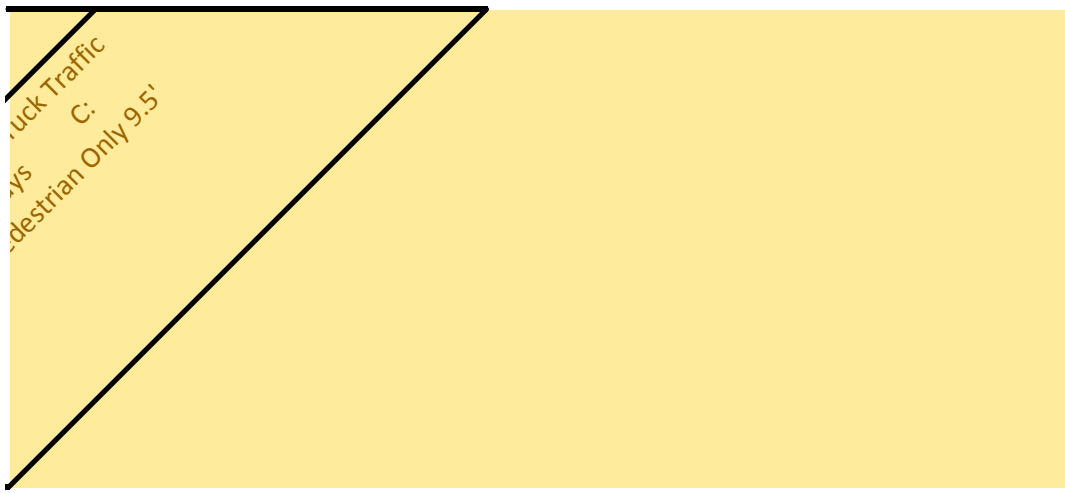
Communication	18' 1"	16'8"	68	N	N
Communication	15' 8"			N	N
Communication	14' 6"	13'11"		N	N
Primary	33' 3"			Y	N D: Pedestrian Only 9.5'
Neutral	25' 4"			Y	N
Secondary	24' 5"			Y	N
Secondary	23' 9"			Y	N
Secondary	23' 1"			Y	N
Secondary Riser	22' 1"			Y	N
Secondary Drip Loop	21' 6"			Y	N
Communication		18'1"		Y	N
Pending Permit		17'0"		Y	N
Communication	18' 1"	16'0"	36	Y	N
Communication	17' 3"	15'0"		Y	N
Communication	16' 6"	14'0"	15'4"	Y	N
Primary	33' 6"			Y	N D: Pedestrian Only 9.5'
Transformer	24' 5"			Y	N
Neutral	23' 2"			Y	N
Secondary	22' 3"			Y	N
Secondary	21' 8"			Y	N
Secondary	21' 0"			Y	N
Communication		17'8"		Y	N
Pending Permit		16'8"		Y	N
Communication	19' 3"	15'8"	67	Y	N
Communication	16' 1"	14'8"		Y	N
Communication	15' 1"	13'8"	13'3"	Y	N
Primary	33' 3"			N	N D: Pedestrian Only 9.5'
Neutral	26' 1"			N	N
OH Guy	20' 9"	22'9"		N	N
Communication		21'9"		N	N
Pending Permit		20'9"		N	N
Communication	19' 9"		43	N	N
Communication	17' 6"			N	N
Communication	16' 4"	15'4"		N	N
Primary	31' 2"			Y	N D: Pedestrian Only 9.5'
Secondary	24' 3"			Y	N
Neutral	22' 11"			Y	N
Secondary	22' 3"			Y	N
Secondary	21' 6"			Y	N
Communication		17'9"		Y	N
Communication	18' 10"	16'9"	37	Y	N
Communication	17' 9"	15'9"	16'5"	Y	N

Primary	33' 3"			N	N	D: Pedestrian Only 9.5'
Secondary Riser	25' 11"			N	N	
Secondary	25' 10"			N	N	
Neutral	25' 1"			N	N	
Secondary	24' 4"			N	N	
Secondary	23' 8"			N	N	
Communication		19'10"		N	N	
Communication	19' 10"	18'9"	65	N	N	
Communication	18' 9"	17'9"	15'7"	N	N	
Primary	32' 4"			Y	N	D: Pedestrian Only 9.5'
Primary	29' 10"			Y	N	
Secondary	25' 10"			Y	N	
Neutral	25' 1"			Y	N	
Neutral	23' 10"			Y	N	
Secondary	23' 2"			Y	N	
Secondary	22' 6"			Y	N	
Communication		19'2"		Y	N	
Communication	19' 6"	18'2"	57	Y	N	
Communication	18' 5"	17'2"	17'5"	Y	N	
Primary	33' 2"			N	N	D: Pedestrian Only 9.5'
Primary	32' 11"			N	N	
Primary	31' 6"			N	N	
Secondary	27' 1"			N	N	
Neutral	26' 2"			N	N	
Secondary	25' 6"			N	N	
Secondary	24' 10"			N	N	
Secondary Drip Loop	24' 2"			N	N	
Communication		20'7"		N	N	
Communication	19' 7"		57	N	N	
Communication	18' 8"		17' 0"	N	N	
Primary	33' 2"			N	N	D: Pedestrian Only 9.5'
Primary	32' 11"			N	N	
Transformer	26' 5"			N	N	
Secondary	25' 10"			N	N	
Neutral	25' 0"			N	N	
Secondary	24' 5"			N	N	
Secondary Riser	24' 1"			N	N	
Secondary	23' 8"			N	N	
Secondary Drip Loop	23' 4"			N	N	
Communication		19'7"		N	N	
Communication	18' 7"		41	N	N	
Communication	17' 6"		15' 11	N	N	
Primary	32' 7"			N	N	D: Pedestrian Only 9.5'

Primary	32' 3"			N	N	
Secondary	25' 11"			N	N	
Neutral	24' 10"			N	N	
Secondary	24' 1"			N	N	
Secondary	23' 5"			N	N	
Communication		20'1"		N	N	
Communication	20' 1"	18'10"	41	N	N	
Communication	18' 10"	17'10"	16' 4"	N	N	
Primary	33' 9"			Y	N	B:Residential/Over Driveways
Primary	33' 5"			Y	N	
Secondary	26' 5"			Y	N	
Neutral	25' 5"			Y	N	
Secondary	24' 8"			Y	N	
Secondary Riser	24' 3"			Y	N	
Secondary	24' 1"			Y	N	
Communication		19'8"		Y	N	
Communication	19' 11"	18'8"	59	Y	N	
Communication	19' 2"	17'8"	16' 1"	Y	N	
Primary	36' 9"			N	N	D: Pedestrian Only 9.5'
Primary	33' 6"			N	N	
Secondary	29' 9"			N	N	
Neutral	28' 8"			N	N	
Secondary	28' 1"			N	N	
Secondary	27' 6"			N	N	
OH Guy	26' 8"			N	N	
Communication		24'2"		N	N	
Communication		23'10"		N	N	
Communication	24' 2"	23'2"		N	N	
Communication	23' 10"	22'10"		N	N	
Communication	22' 6"	22'3"	43	N	N	
Communication	22' 3"	21'10"	20' 6"	N	N	
Primary	33' 1"			N	N	D: Pedestrian Only 9.5'
Secondary	26' 4"			N	N	
Neutral	25' 1"			N	N	
Secondary	24' 2"			N	N	
Secondary	23' 6"			N	N	
Communication		20'1"		N	N	
Communication	20' 1"	19'2"	48	N	N	
Communication	19' 2"	18'2"	14' 10"	N	N	
Primary	34' 1"			N	N	D: Pedestrian Only 9.5'
Secondary	27' 0"			N	N	
Neutral	25' 10"			N	N	
Secondary	25' 1"			N	N	

Secondary	24' 4"			N	N	
Secondary Riser	24' 1"			N	N	
Secondary Drip Loop	23' 10"			N	N	
Communication		20'6"		N	N	
Communication	20' 6"	19'6"	44	N	N	
Communication	15' 1"		15' 4"	N	N	
Primary	33' 8"			Y	N	D: Pedestrian Only 9.5'
Transformer	26' 11"			Y	N	
Secondary	26' 11"			Y	N	
Neutral	25' 9"			Y	N	
Secondary	25' 1"			Y	N	
Secondary	24' 4"			Y	N	
Streetlight	23' 8"			Y	N	
Secondary Riser	23' 1"			Y	N	
Communication		19'4"		Y	N	
Communication	20' 10"	18'4"	44	Y	N	
Communication	19' 4"	17'4"	17' 5"	Y	N	
Primary	33' 5"			N	N	D: Pedestrian Only 9.5'
Primary	33' 2"			N	N	
Transformer	27' 8"			N	N	
Secondary	26' 5"			N	N	
Neutral	25' 4"			N	N	
Neutral	25' 1"			N	N	
Secondary	24' 8"			N	N	
Secondary	23' 11"			N	N	
Communication		20'3"		N	N	
Communication	20' 3"	19'0"	51	N	N	
Communication	19' 0"	18'0"	16' 0"	N	N	
Primary	33' 6"			N	N	D: Pedestrian Only 9.5'
Secondary	26' 10"			N	N	
Secondary Riser	26' 4"			N	N	
Neutral	25' 10"			N	N	
Neutral	25' 5"			N	N	
Secondary	24' 9"			N	N	
Secondary	24' 1"			N	N	
Secondary Riser	23' 10"			N	N	
Communication		20'2"		N	N	
Communication	20' 2"	19'2"	68	N	N	
Communication	19' 2"	18'2"	19' 8"	N	N	
Primary	36' 7"			N	N	B:Residential/Over Driveways
Secondary	29' 8"			N	N	
Neutral	28' 9"			N	N	
Neutral	28' 2"			N	N	

Secondary	27' 5"		N	N	
Secondary Riser	27' 3"		N	N	
Secondary	26' 10"		N	N	
OH Guy	24' 6"		N	N	
Communication		23'6"	N	N	
Communication	22' 6"		44	N	N
Communication	21' 3"		19' 8"	N	N



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!!!

EXHIBIT B
 Windstream CORPORATION
 APPLICATION FOR POLE LICENSE
 PROPOSAL #:
 Submit in Duplicate

LX167-03W

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # LAUREN SANDEFUR 812-213-1328

EMAIL ADDRESS lauren.sanderfur@metronetinc.com

Street Address,
 City, ST, ZIP of Firm
 Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sanderfur 3/19/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeredy MUST BE PAID IN FULL UP FRONT.
 NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

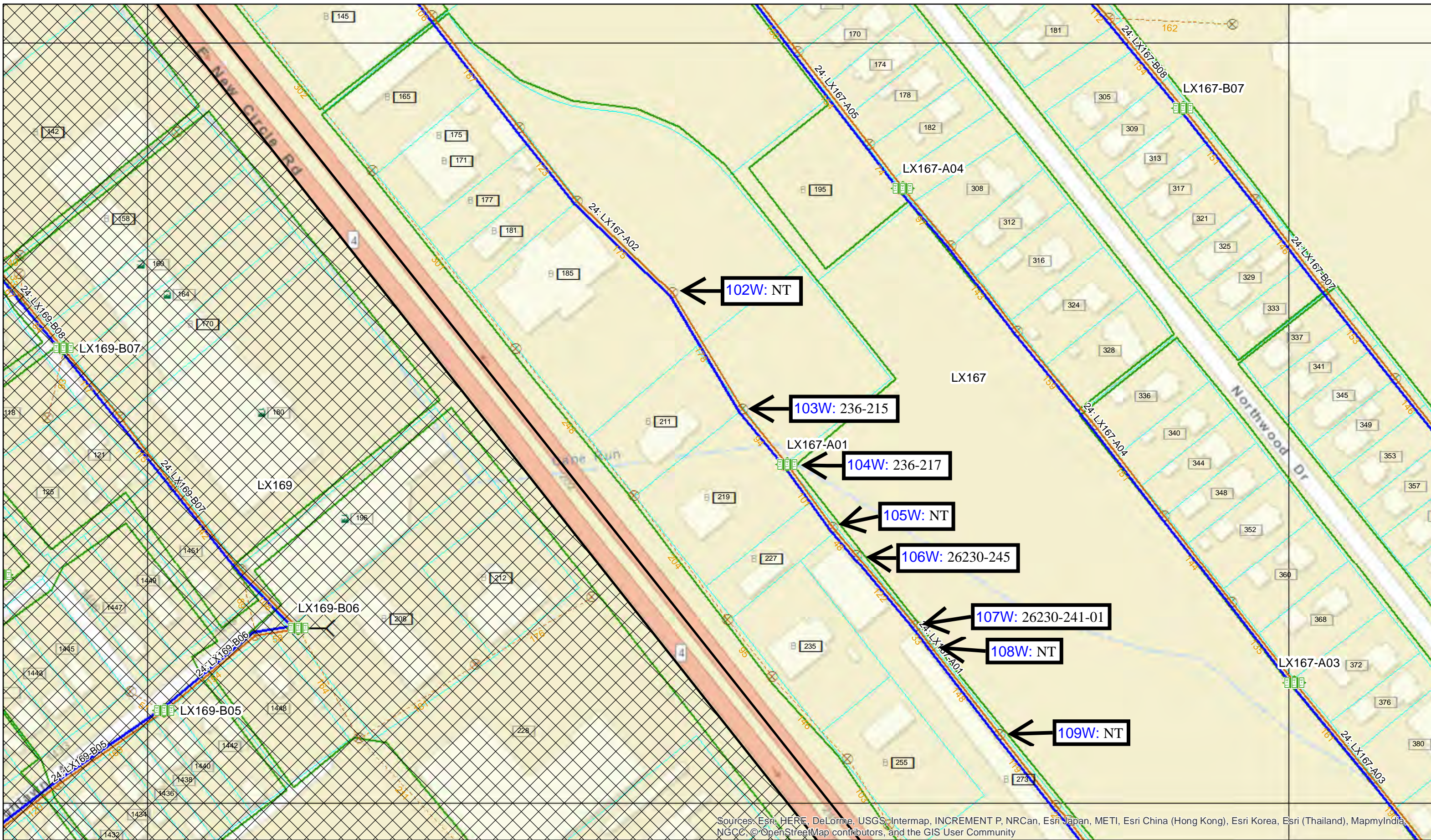
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12	
Licensee to complete Windstream Lead & Structure No. (Pole No.)	Licensee to complete Power Pole No.	Licensee to complete Location: Street, City, Township, Zip Code	Licensee to Complete Height Class, Ownership of Pole	Licensee to Complete Hgt of highest Tel Cable	Licensee to Complete Hgt of highest Tel Drop	Licensee to Complete Hgt of lowest Power Cable	Licensee to Complete Hgt of other attachmts on pole	Licensee to Complete # & type of Attachmts	Windstream to Complete Height Licensee to attach at	Windstream To Complete	Windstream To Complete Licenseor Work Description	Windstream To Complete Bill for Rent Y or N
1	NT	102W	185 E NEW CIRCLE RD, Lexington, KY 40502/2, WXXM	22'7"	N/A	31'1"		(2) Fiber/Strand				
2	236-315	103W	200 BRYAN CENTER DR, Lexington, KY 40503, WXXM	20'0"	N/A	23'9"		(1) Fiber/Strand				
3	236-217	104W	273 E NEW CIRCLE RD, 42, Lexington, KY 4002, WXXM	15'9"	N/A	19'1"		(1) Fiber/Strand				
4	NT	105W	273 E NEW CIRCLE RD, 42, Lexington, KY 35/5, WXXM	15'5"	15'5"	18'11"		(2) Fiber/Strand				
5	27230-245	106W	273 E NEW CIRCLE RD, 38, Lexington, KY 40/3, WXXM	18'0"	18'0"	24'4"		(2) Fiber/Strand				
6	26230-241-01	107W	273 E NEW CIRCLE RD, 1, Lexington, KY 40/4, WXXM	19'2"	19'2"	25'0"		(2) Fiber/Strand				
7	27230-243	108W	273 E NEW CIRCLE RD, 2, Lexington, KY 40/4, WXXM	19'7"	20'5"	27'11"		(2) Fiber/Strand				
8	NT	109W	273 E NEW CIRCLE RD, 10, Lexington, KY 40/4, WXXM	15'8"	16'5"	20'1"		(2) Fiber/Strand				
9	NT	110W	273 E NEW CIRCLE RD, 16, Lexington, KY 40/3, WXXM	17'3"	N/A	21'6"		(2) Fiber/Strand				
10	27230-265	111W	273 E NEW CIRCLE RD, 18, Lexington, KY 40/3, WXXM	16'1"	16'5"	21'0"		(2) Fiber/Strand				
11	26230-283	112W	273 E NEW CIRCLE RD, 23, Lexington, KY 40/4, WXXM	17'4"	17'6"	26'1"		(2) Fiber/Strand				
12	75128-32621	157W	372 HERMITAGE DR, Lexington, KY 40504/4, WXXM	17'9"	17'1"	21'6"		(2) Fiber/Strand				
13	NT	158W	364 HERMITAGE DR, Lexington, KY 40504/4, WXXM	18'9"	18'3"	23'8"		(2) Fiber/Strand				
14	73972-32794	159W	360 HERMITAGE DR, Lexington, KY 40504/4, WXXM	18'5"	N/A	22'6"		(2) Fiber/Strand				
15	73931-32836	160W	352 HERMITAGE DR, Lexington, KY 40504/4, WXXM	18'8"	17'7"	24'2"		(2) Fiber/Strand				
16	73859-32912	161W	343 WICKLAND CT, Lexington, KY 40505/4, WXXM	17'6"	N/A	23'4"		(2) Fiber/Strand				
17	73777-3300	162W	340 HERMITAGE DR, Lexington, KY 40505/4, WXXM	18'10"	18'11"	23'5"		(2) Fiber/Strand				
18	73685-33103	163W	1896 WICKLAND DR, Lexington, KY 40503/4, WXXM	19'2"	18'6"	24'1"		(2) Fiber/Strand				
19	73555-33260	164W	1889 WICKLAND DR, Lexington, KY 40503/4, WXXM	22'6"	22'6"	27'6"		(2) Fiber/Strand				

20	73666-33365	165W	1901 WICKLAND DR, Lexington, KY 40505 40/4, WXM	19'2"	19'0"	23'6"	(2) Fiber/Strand			
21	73746-33441	166W	1905 WICKLAND DR, Lexington, KY 40505 40/4, WXM	15'1"	15'1"	23'10"	(2) Fiber/Strand			
22	73826-33517	167W	1917 WICKLAND DR, Lexington, KY 40505 40/4, WXM	19'4"	18'9"	23'1"	(2) Fiber/Strand			
23	73906-33593	168W	1921 WICKLAND DR, Lexington, KY 40505 40/4, WXM	19'0"	18'6"	23'11"	(2) Fiber/Strand			
24	73985-33669	169W	1933 WICKLAND DR, Lexington, KY 40505 40/4, WXM	19'2"	18'10"	23'10"	(2) Fiber/Strand			
25	74065-33744	170W	1937 WICKLAND DR, Lexington, KY 40505 45/4, WXM	21'3"	20'7"	26'10"	(2) Fiber/Strand			
ESTIMATED TOTAL COSTS										

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com
 Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LX BK33

DESIGN ENG
 USER NAME: argjls
 DATE: 12/11/2017
 PROJECT NUMBER:
 LXTNXY00457.CB

STAKING GRID DRAWING

ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

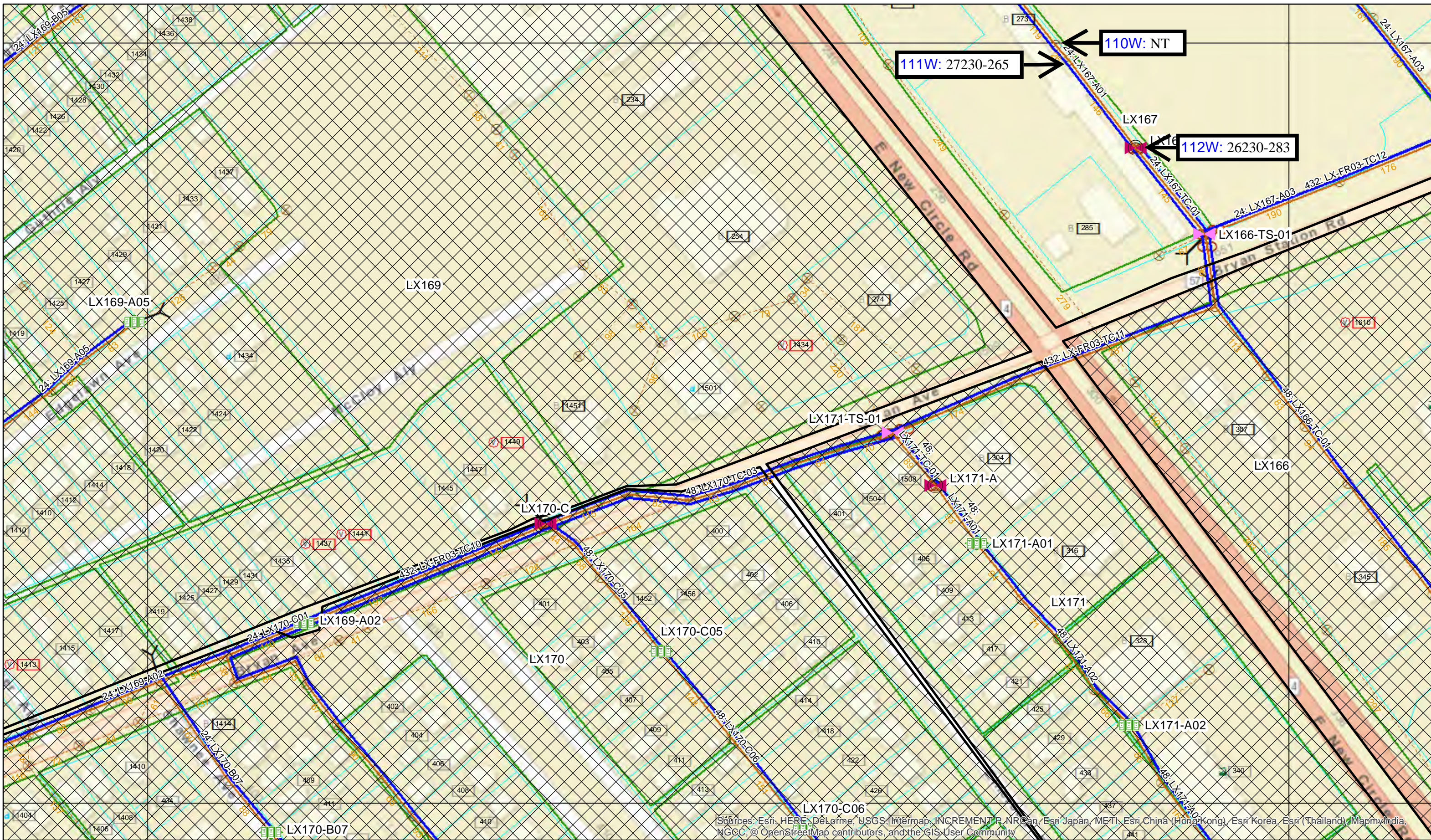
REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET

3701 Communications Way
 Evansville, In 47715





LXB33

DESIGN ENG

USER NAME: argis

DATE: 12/11/2017

PROJECT NUMBER: LTXNY00457.CB

STAKING GRID DRAWING

ROUTE: LX167 REV0

PROJECT: LEXINGTON CITY BUILD

LOCATION: LEXINGTON, KY

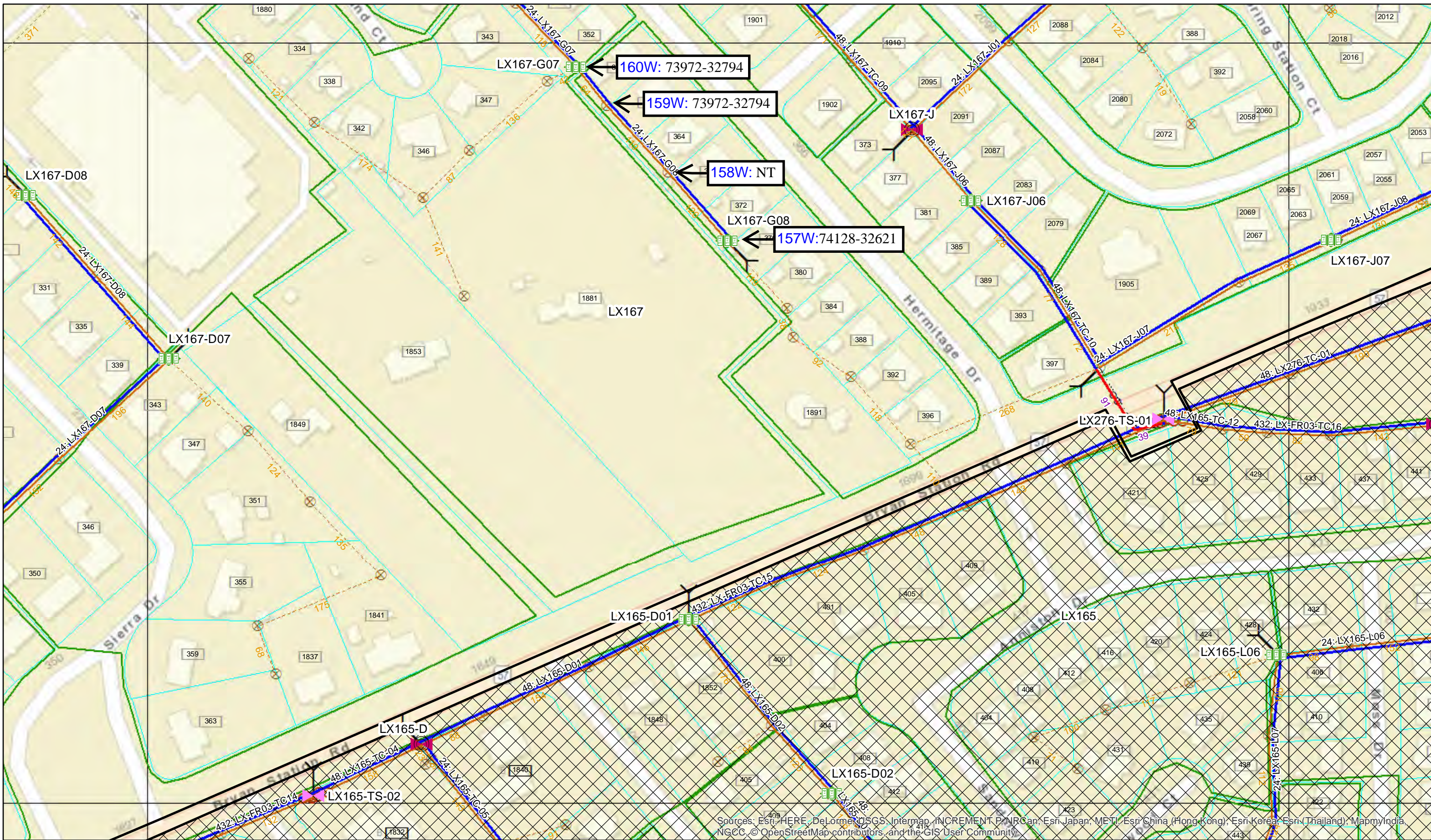
REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET

3701 Communications Way
Evansville, In 47715





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LXBL36

DESIGN ENG
 USER NAME: argis
 DATE: 12/11/2017
 PROJECT NUMBER:
 LXTNXY.00437.CB

STAKING GRID DRAWING

ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

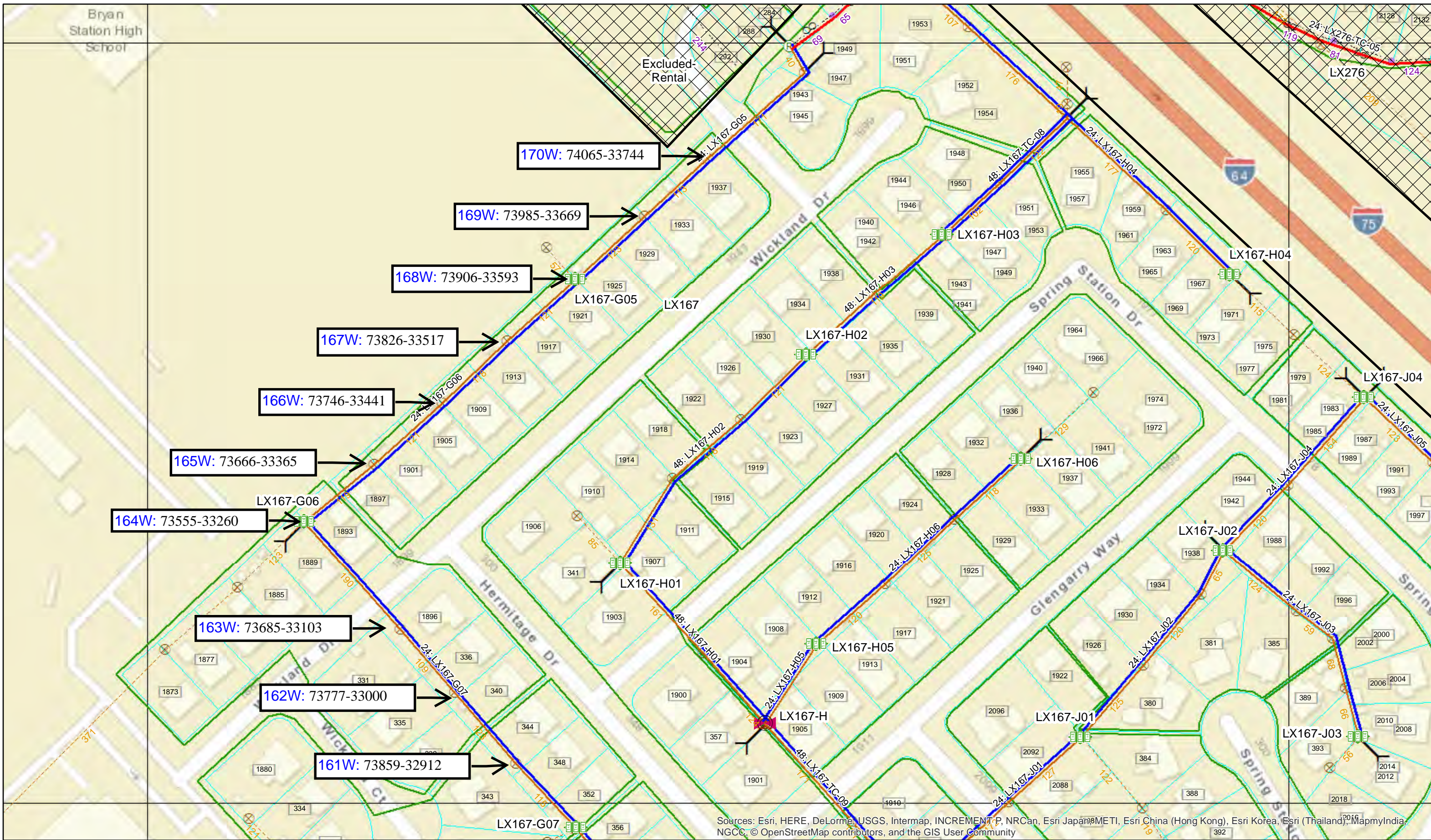
REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET

3701 Communications Way
 Evansville, In 47715





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LXBM36
 PROJECT NUMBER:
 LXTNXY00437.CB
 DATE: 12/11/2017
 USER NAME: arglis
 DESIGN ENG

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WIN6268

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND

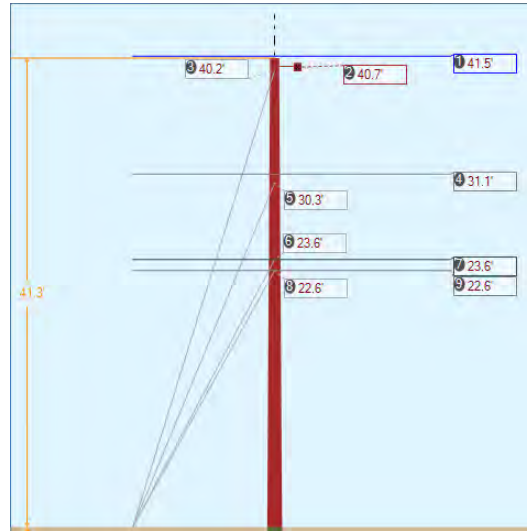
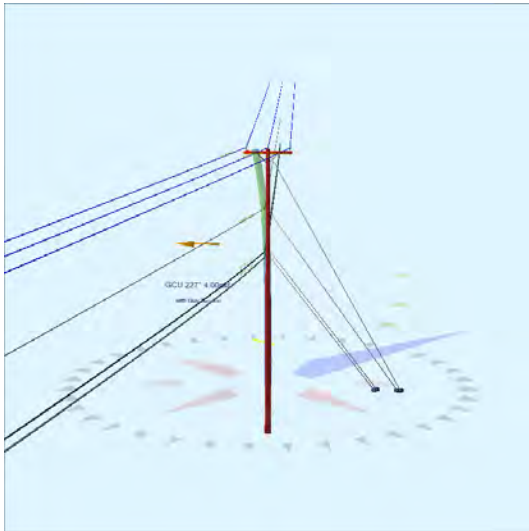
FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

MISCELLANEOUS	
ROADNAME	ROADS WORK POINTS
RAILROADS	

STRAND AND TRENCH	
Footage AERIAL (TENSION SPAN)	Footage AERIAL (SLACK SPAN)
Footage NEW / PROPOSED TRENCH	Footage EXISTING INHERITED TRENCH

Pole Num:	102W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.69	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.96	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.062987 Deg	Longitude:	-84.466609 Deg	Elevation:	849.78935838876		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.2	30.7
Groundline	10.7	0.0
Vertical	18.7	35.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,303	229.8
Groundline	4,899	131.6
GL Allowable	123,296	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	23.1	53.8	40.2	51.3	227.0	51.4	231.2
? Single Helix Anchor ? EHS 3/8 (Down)	22.5	53.8	30.3	20.3	227.0	20.3	231.2
? Single Helix Anchor ? EHS 1/4 (Down)	19.0	53.6	23.6	3.5	227.0	3.5	227.7
? Single Helix Anchor ? EHS 1/4 (Down)	18.6	54.9	22.6	11.7	227.0	12.9	227.7
				2.8	227.0	2.9	250.0
				9.4	227.0	10.5	250.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 131.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-1,361	-1265.2	-289,790	-5915.3	-235.0	-3,031	876	7	-3,025	-44.5
Comms	-255	-236.7	-31,317	-639.3	-25.4	-328	755	6	-322	-4.7
GuyBraces	1,741	1618.7	327,382	6682.6	265.5	3,424	19,848	149	3,573	52.5
Pole	-24	-22.2	-2,586	-52.8	-2.1	-27	2,886	22	-5	-0.1
Crossarms	7	6.0	1,388	28.3	1.1	15	190	1	16	0.2
Insulators	-1	-0.7	-178	-3.6	-0.1	-2	91	1	-1	0.0
Pole Load	108	100.0	4,899	100.0	4.0	51	24,646	185	236	3.5
Pole Reserve Capacity			118,397		96.0	6,749			6,564	96.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 131.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	206	191.8	16,317	333.1	13.2	171	19,302	145	315	4.6
Unknown, COMMUNICATION	-81	-75.6	-10,219	-208.6	-8.3	-107	2,268	17	-90	-1.3
Pole	-24	-22.2	-2,586	-52.8	-2.1	-27	2,886	22	-5	-0.1
<Undefined>	7	6.0	1,388	28.3	1.1	15	190	1	16	0.2
Totals:	108	100.0	4,899	100.0	4.0	51	24,646	185	236	3.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.48	0.00	0.7200	0.54	0.462	174.1	149.9	174.1	6,210	318,192	0	-786	317,406
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.48	0.00	0.7200	0.56	0.462	175.6	316.3	175.6	6,210	-333,976	0	-211	-334,187
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.48	45.00	0.7200	0.54	0.462	174.1	149.9	174.1	6,210	318,192	-94	-786	317,312
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.48	45.00	0.7200	0.56	0.462	175.6	316.3	175.6	6,210	-333,976	-95	-211	-334,282
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.48	45.00	0.7200	0.54	0.462	174.1	149.9	174.1	6,210	318,192	94	-786	317,500
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.48	45.00	0.7200	0.56	0.462	175.6	316.3	175.6	6,210	-333,976	95	-211	-334,092
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.10	7.11	0.3980	0.55	0.145	174.1	149.9	174.1	2,128	81,685	-7	-434	81,245
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.10	7.11	0.3980	0.57	0.145	175.6	316.3	175.6	2,128	-85,738	-7	-117	-85,861
Totals:											-51,404	-14	-3,542	-54,960	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.58	7.57	1.3300	2.60	0.337	174.1	149.9	174.2	925	26,923	-17	-670	26,236
CATV	CATV 1.0	Unknown, COMMUNICATION	23.58	7.57	1.3300	2.63	0.337	175.6	316.3	175.6	925	-28,259	-17	-180	-28,456
Telco	TELE 1.5	Unknown, COMMUNICATION	22.60	7.63	1.5000	3.07	0.900	174.1	149.9	174.2	2,000	55,807	-30	-702	55,075

Telco	TELE 1.5	Unknown,	22.60	7.63	1.5000	3.11	0.900	175.6	316.3	175.7	2,000	-58,575	-30	-189	-58,795	
COMMUNICATION												Totals:	-4,104	-95	-1,740	-5,939

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	40.67	5.77	143.1	143.1	50.00	4.50	3.50	96.00	0	263	263
Totals:										0	263	263

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV KU, UTILITY	40.85	0.00	143.1	0.0	6.00	3.50	7.50	0	-10	-10	
Pin	Pin Insulator - 5 kV KU, UTILITY	40.85	45.00	225.8	0.0	6.00	3.50	7.50	-17	-10	-27	
Pin	Pin Insulator - 5 kV KU, UTILITY	40.85	-45.00	60.4	0.0	6.00	3.50	7.50	17	-10	7	
Spool	Spool Insulator - 25 kV KU, UTILITY	31.10	0.00	233.1	143.1	2.00	3.00	3.19	0	-1	-2	
Bolt	Three Bolt Unknown, COMMUNICATION	23.58	0.00	233.1	143.1	5.00	3.00	0.00	-1	0	-1	
Bolt	Three Bolt Unknown, COMMUNICATION	22.60	0.00	233.1	143.1	5.00	3.00	0.00	-1	0	-1	
Totals:										-3	-31	-34

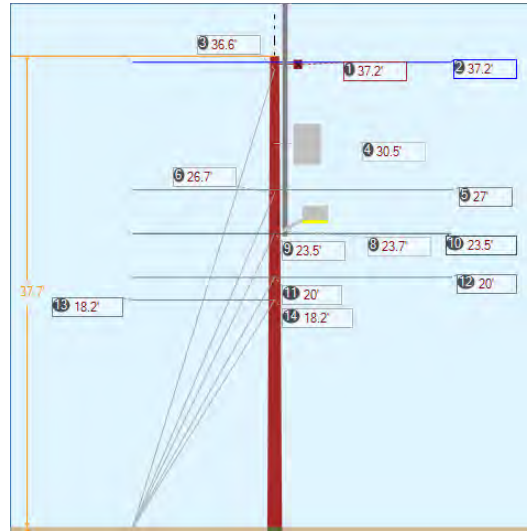
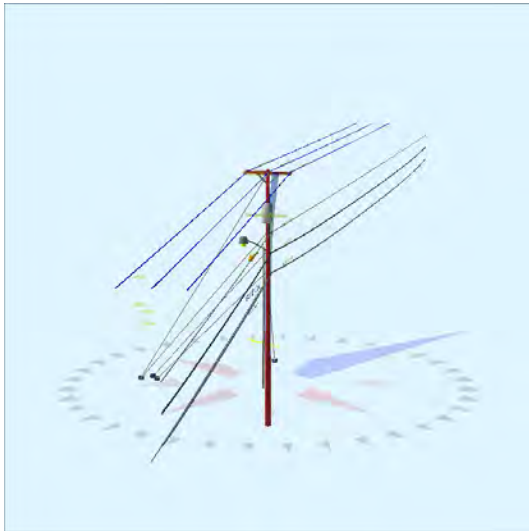
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down KU, UTILITY	40.23	0.00	23.07	0.375	75.00	53.8	60.0	0.273	44.71	2.89
EHS 3/8	Down KU, UTILITY	30.34	0.00	22.54	0.375	75.00	53.8	53.2	0.273	36.07	0.92
EHS 1/4	Down Unknown, COMMUNICATION	23.58	0.00	19.01	0.25	75.00	53.6	51.0	0.121	28.52	0.28
EHS 1/4	Down Unknown, COMMUNICATION	22.60	0.00	18.59	0.25	75.00	54.9	50.4	0.121	27.50	0.22

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,296	10,269	10,266	8,886	5,141	1,081	42,769
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,470	4,064	4,062	3,253	2,433	511	15,318
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	770	700	700	544	441	92	2,144
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	630	573	563	434	359	83	1,860
Totals:										13,116	8,374	1,766	62,090

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	23.07	53.8	20,000	1.00	20,000	10,269	10,266	51.3
Single Helix Anchor		18.00	22.54	53.8	20,000	1.00	20,000	4,064	4,062	20.3
Single Helix Anchor		18.00	19.01	53.6	20,000	1.00	20,000	700	700	3.5
Single Helix Anchor		18.00	18.59	54.9	20,000	1.00	20,000	573	563	2.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	35.00	34.95	11.53	27.54	7.96	13.04	1.60e+6	60.00	57.00	41.31	132,141	1317.97	5.35

Pole Num:	103W - 236-315	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.29	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.062576 Deg	Longitude:	-84.466289 Deg	Elevation:	850.142646864291		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	14.3	146.3
Groundline	4.5	207.2
Vertical	12.0	71.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	4,763	146.3
Groundline	3,929	207.2
GL Allowable	91,043	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	23.2	237.0	36.6	27.4 39.5	146.3 146.3	29.8 47.3	60.0 60.0
? Single Helix Anchor ? EHS 1/8 (Down)	23.0	236.5	26.7	3.0 36.4	146.3 146.3	3.9 52.2	50.0 50.0
? Single Helix Anchor ? EHS 1/4 (Down)	21.4	240.9	23.5	4.4 14.6	146.3 146.3	5.6 20.7	60.0 60.0
? Single Helix Anchor ? EHS 1/4 (Down)	20.2	237.2	20.0	2.0 6.5	146.3 146.3	3.7 13.7	50.0 50.0
? Single Helix Anchor ? EHS 1/4 (Down)	16.5	319.2	18.2	8.5 28.3	146.3 146.3	8.5 31.1	144.9 144.9
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 160.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-936	-550.4	-35,146	-894.5	-38.6	-2,530	501	5	-2,526	-37.1
Comms	792	465.8	14,478	368.5	15.9	1,042	623	6	1,048	15.4
GuyBraces	-58	-33.9	13,989	356.1	15.4	1,007	10,979	101	1,108	16.3
PowerEquipments	40	23.7	2,462	62.7	2.7	177	694	6	184	2.7
Pole	204	119.6	4,005	101.9	4.4	288	2,179	20	308	4.5
Crossarms	64	37.4	2,453	62.4	2.7	177	190	2	178	2.6
Streetlights	19	11.3	600	15.3	0.7	43	86	1	44	0.6
Risers	31	18.1	549	14.0	0.6	40	47	0	40	0.6
Insulators	14	8.3	539	13.7	0.6	39	66	1	39	0.6
Pole Load	170	100.0	3,929	100.0	4.3	283	15,364	141	424	6.2
Pole Reserve Capacity			87,114		95.7	6,517			6,376	93.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 160.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-26	-15.2	-1,432	-36.5	-1.6	-103	9,030	83	-20	-0.3
Unknown, COMMUNICATION	-71	-41.7	-1,097	-27.9	-1.2	-79	3,966	36	-43	-0.6
Pole	204	119.6	4,005	101.9	4.4	288	2,179	20	308	4.5
<Undefined>	64	37.4	2,453	62.4	2.7	177	190	2	178	2.6
Totals:	170	100.0	3,929	100.0	4.3	283	15,364	141	424	6.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.22	18.19	0.7200	0.15	0.462	94.8	142.1	94.8	6,210	284,590	20	30	284,639
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.22	48.54	0.7200	0.15	0.462	94.8	142.1	94.8	6,210	284,590	14	30	284,633
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.22	48.54	0.7200	0.15	0.462	94.8	142.1	94.8	6,210	284,590	1	30	284,621
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.22	48.54	0.7200	0.15	0.462	94.8	329.9	94.8	6,210	-295,027	-1	-15	-295,043
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.22	18.19	0.7200	0.15	0.462	94.8	329.9	94.8	6,210	-295,027	-20	-15	-295,062
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.22	48.54	0.7200	0.15	0.462	94.8	329.9	94.8	6,210	-295,027	-14	-15	-295,056
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.01	6.79	0.3980	0.13	0.145	94.8	142.1	94.8	2,128	70,789	-5	16	70,800
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.01	6.79	0.3980	0.42	0.145	174.1	329.9	174.1	2,128	-73,385	-8	-15	-73,407
										Totals:	-33,908	-13	46	-33,875	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.52	7.00	1.3300	1.23	0.337	94.8	142.1	94.8	925	26,788	-11	28	26,805
CATV	CATV 1.0	Unknown, COMMUNICATION	23.52	7.00	1.3300	2.56	0.337	174.1	329.9	174.2	925	-27,770	-20	-26	-27,816
Telco	TELE 1.5	Unknown, COMMUNICATION	20.00	7.21	1.5000	1.43	0.900	94.8	142.1	94.8	2,000	49,266	-20	26	49,273

Telco	TELE 1.5	Unknown,	20.00	7.21	1.5000	3.05	0.900	174.1	329.9	174.2	2,000	-51,073	-37	-24	-51,134
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.20	7.32	0.6570	1.18	0.190	94.8	142.1	94.8	750	16,805	8	14	16,827
		COMMUNICATION													
Totals:											14,016	-80	18	13,954	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-25KVA KU, UTILITY	30.55	21.08	140.0	140.0	365.00	39.00	--	22.00	--	1,139	1,234	2,373
Totals:											1,139	1,234	2,373

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	37.22	5.44	142.1	142.1	50.00	4.50	3.50	96.00	0	2,364	2,364	
Totals:											0	2,364	2,364

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm KU, UTILITY	23.71	4.49	220.0	220.0	45.00	24.00	20.00	3.00	36.00	123	455	578
Totals:											123	455	578

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 180.0°	Riser KU, UTILITY	24.61	6.09	180.0	180.0	24.61	295.35	4.00	4.00	295.35	23	506	529
Totals:											23	506	529

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.22	0.00	142.1	0.0	3.00	3.80	12.75	8	85	93
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.22	45.00	225.2	0.0	3.00	3.80	12.75	15	85	100
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.22	-45.00	59.0	0.0	3.00	3.80	12.75	1	85	86
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.22	45.00	239.0	180.0	3.00	3.80	12.75	-1	85	84
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.22	0.00	322.1	180.0	3.00	3.80	12.75	-8	85	77
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.22	-45.00	45.2	180.0	3.00	3.80	12.75	-15	85	70

Spool	Spool Insulator - 25 kV	KU, UTILITY	27.01	0.00	56.0	326.0	2.00	3.00	3.19	-1	12	12
Bolt	Three Bolt	Unknown, COMMUNICATION	23.52	0.00	56.0	326.0	5.00	3.00	0.00	-1	0	-1
Bolt	Three Bolt	Unknown, COMMUNICATION	20.00	0.00	56.0	326.0	5.00	3.00	0.00	-1	0	-1
Bolt	Single Bolt	Unknown, COMMUNICATION	18.20	0.00	232.1	232.1	5.00	3.00	0.00	2	0	2
Totals:										-2	521	520

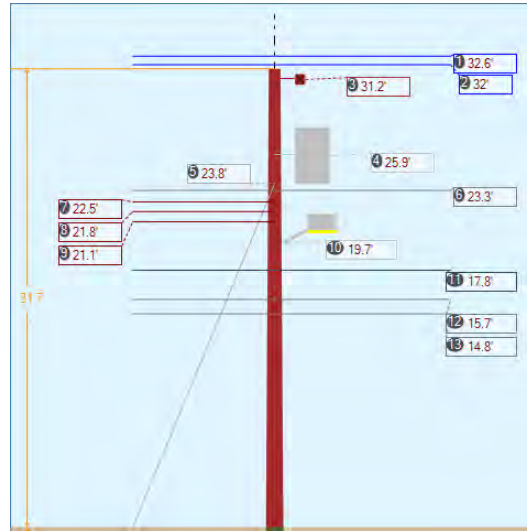
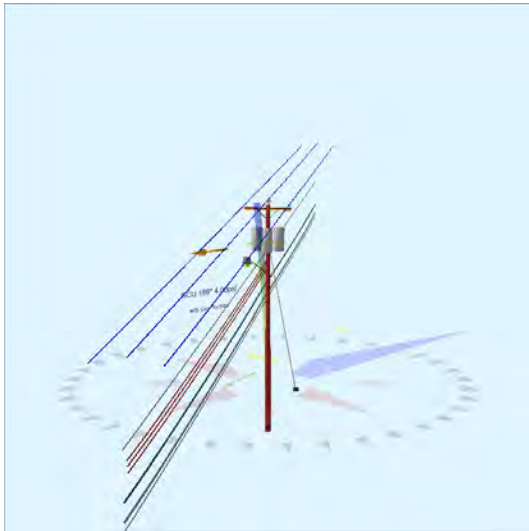
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	36.62	0.00	23.15	0.375	75.00	237.0	57.5	0.273	41.66	1.44
EHS 1/8	Down	KU, UTILITY	26.74	0.00	23.04	0.125	75.00	236.5	49.1	0.032	33.57	1.14
EHS 1/4	Down	Unknown, COMMUNICATION	23.52	0.00	21.40	0.25	75.00	240.9	47.5	0.121	30.05	0.37
EHS 1/4	Down	Unknown, COMMUNICATION	20.00	0.00	20.17	0.25	75.00	237.2	44.6	0.121	26.63	0.15
EHS 1/4	Down	Unknown, COMMUNICATION	18.20	0.00	16.45	0.25	75.00	319.2	47.7	0.121	22.76	0.55

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,557	5,961	5,470	4,613	2,939	703	25,750
EHS 1/8	Down	2.30e+7	1,830	0.90	1,647	700	859	781	600	454	393	97	2,744
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,237	1,124	875	646	591	102	2,530
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	822	747	391	274	278	65	1,416
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,861	1,692	1,692	1,252	1,138	-1,059	-18,956
Totals:										7,239	5,339	-91	13,483

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	23.15	237.0	20,000	1.00	20,000	5,961	5,470	29.8
Single Helix Anchor			18.00	23.04	236.5	20,000	1.00	20,000	781	600	3.9
Single Helix Anchor			18.00	21.40	240.9	20,000	1.00	20,000	1,124	875	5.6
Single Helix Anchor			18.00	20.17	237.2	20,000	1.00	20,000	747	391	3.7
Single Helix Anchor			18.00	16.45	319.2	20,000	1.00	20,000	1,692	1,692	8.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.86	34.50	10.57	20.12	7.32	11.79	1.60e+6	60.00	57.00	37.71	127,918	1280.36	8.33

Pole Num:	104W - 236-217	Pole Length / Class:	40 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.30	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.59	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.062378 Deg	Longitude:	-84.466083 Deg	Elevation:	849.34902543334		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	189.3
Groundline	0.0	189.3
Vertical	22.9	255.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,282	165.2
Groundline	51,282	165.2
GL Allowable	95,283	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	5.5	75.6		0.4	189.3	5.3	240.0
? EHS 3/8 (Down)			23.8	0.6	189.3	8.3	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 165.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,754	79.1	39,512	77.1	41.5	2,817	609	5	2,822	41.5
Comms	90	4.1	1,594	3.1	1.7	114	524	5	118	1.7
GuyBraces	6	0.3	138	0.3	0.2	10	135	1	11	0.2
PowerEquipments	150	6.8	5,940	11.6	6.2	423	3,648	32	456	6.7
Pole	168	7.6	2,758	5.4	2.9	197	1,982	18	214	3.2
Crossarms	22	1.0	712	1.4	0.8	51	95	1	52	0.8
Streetlights	18	0.8	357	0.7	0.4	26	86	1	26	0.4
Insulators	8	0.4	270	0.5	0.3	19	91	1	20	0.3
Pole Load	2,216	100.0	51,282	100.0	53.8	3,656	7,171	64	3,719	54.7
Pole Reserve Capacity			44,001		46.2	3,144			3,081	45.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 165.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,936	87.4	46,211	90.1	48.5	3,294	4,540	40	3,334	49.0
Unknown, COMMUNICATION	90	4.1	1,601	3.1	1.7	114	553	5	119	1.8
Pole	168	7.6	2,758	5.4	2.9	197	1,982	18	214	3.2
<Undefined>	22	1.0	712	1.4	0.8	51	95	1	52	0.8
Totals:	2,216	100.0	51,282	100.0	53.8	3,656	7,171	64	3,719	54.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	32.58	0.00	0.7200	0.19	0.462	106.3	142.3	106.3	6,210	242,523	0	351	242,874
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	32.58	0.00	0.7200	0.15	0.462	94.8	322.1	94.8	6,210	-242,164	0	316	-241,848
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.97	45.37	0.7200	0.19	0.462	106.3	142.3	106.3	6,210	238,036	146	344	238,527
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.97	45.37	0.7200	0.15	0.462	94.8	322.1	94.8	6,210	-237,684	131	311	-237,242

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.97	45.37	0.7200	0.19	0.462	106.3	142.3	106.3	6,210	238,036	-78	344	238,302
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.97	45.37	0.7200	0.15	0.462	94.8	322.1	94.8	6,210	-237,684	-70	311	-237,443
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.30	7.01	0.3980	0.18	0.145	106.3	142.3	106.3	2,128	59,393	8	185	59,585
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.30	7.01	0.3980	0.14	0.145	94.8	322.1	94.8	2,128	-59,305	7	166	-59,131
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.49	7.06	0.3980	1.16	0.145	106.3	142.3	106.3	450	12,121	19	178	12,318
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.83	7.10	0.3980	1.16	0.145	106.3	142.3	106.3	450	11,764	19	173	11,956
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.12	7.15	0.3980	1.16	0.145	106.3	142.3	106.3	450	11,382	19	167	11,569
Totals:											36,418	202	2,846	39,466	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.78	7.36	1.3300	1.41	0.337	106.3	142.3	106.3	925	19,695	20	287	20,002
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.78	7.36	1.3300	1.24	0.337	94.8	322.1	94.8	925	-19,666	18	259	-19,389
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.75	7.49	1.5000	1.64	0.900	106.3	142.3	106.3	2,000	37,719	36	278	38,032
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.75	7.49	1.5000	1.43	0.900	94.8	322.1	94.8	2,000	-37,663	32	251	-37,381
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.77	7.55	0.6570	1.37	0.190	106.3	142.3	106.3	750	13,268	12	151	13,431
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.77	7.55	0.6570	1.20	0.190	94.8	322.1	94.8	750	-13,249	10	136	-13,102
		COMMUNICATION													
Totals:											105	127	1,361	1,592	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	25.87	22.35	140.0	140.0	640.00	47.00	--	24.00	--	2,049	3,884	5,933
Totals:											2,049	3,884	5,933	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		31.16	5.76	142.3	142.3	50.00	4.50	3.50	96.00	42	669	711
Totals:											42	669	711

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	19.68	4.74	255.0	255.0	45.00	24.00	20.00	3.00	36.00	1	356	357
Totals:												1	356	357

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	31.70	0.00	0.0	0.0	13.00	9.00	10.50	0	135	135	
Pin	Pin Insulator - 5 kV	KU, UTILITY	31.35	45.00	225.0	0.0	6.00	3.50	7.50	22	37	58	
Pin	Pin Insulator - 5 kV	KU, UTILITY	31.35	-45.00	59.6	0.0	6.00	3.50	7.50	-12	37	25	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.30	0.00	232.2	142.2	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.49	0.00	142.3	142.3	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.83	0.00	142.3	142.3	2.00	3.00	3.19	2	9	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.12	0.00	142.3	142.3	2.00	3.00	3.19	2	9	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.78	0.00	232.2	142.2	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.75	0.00	232.2	142.2	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.77	0.00	232.3	142.3	5.00	3.00	0.00	2	0	2	
Totals:											24	246	270

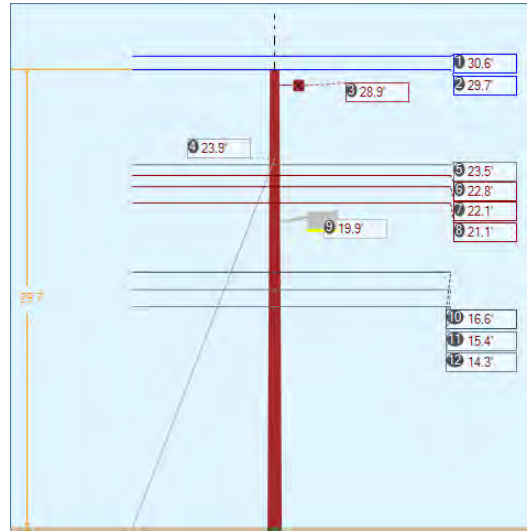
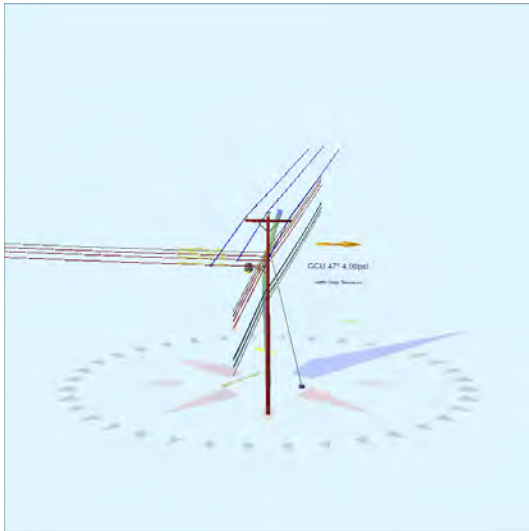
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	23.76	0.00	5.54	0.375	75.00	75.6	76.6	0.273	22.82	0.01

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,155	1,050	87	85	20	0	138	
Totals:											85	20	0	138

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	5.54	75.6	20,000	1.00	20,000	1,050	87	5.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.89	33.63	10.99	12.15	7.96	11.97	1.60e+6	60.00	57.00	31.70	254,823	2560.94	35.71

Pole Num:	105W - NT	Pole Length / Class:	35 / 5	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.28	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.25	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.062131 Deg	Longitude:	-84.465847 Deg	Elevation:	852.196444394314		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.1	23.0
Groundline	26.3	0.0
Vertical	2.8	20.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	6,980	50.0
Groundline	7,016	282.5
GL Allowable	44,901	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	6.0	56.0		2.8	47.0	21.2	230.0
? EHS 3/8 (Down)			23.9	4.1	47.0	33.6	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 282.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	843	199.0	13,629	194.3	30.4	2,175	635	9	2,184	32.1
Comms	-239	-56.3	-3,398	-48.4	-7.6	-542	397	6	-536	-7.9
GuyBraces	-90	-21.3	-2,047	-29.2	-4.6	-327	830	12	-315	-4.6
Pole	-75	-17.8	-1,107	-15.8	-2.5	-177	1,106	16	-160	-2.4
Crossarms	1	0.3	62	0.9	0.1	10	95	1	11	0.2
Streetlights	-11	-2.7	-5	-0.1	0.0	-1	86	1	0	0.0
Insulators	-5	-1.2	-117	-1.7	-0.3	-19	91	1	-17	-0.3
Pole Load	424	100.0	7,016	100.0	15.6	1,120	3,239	48	1,167	17.2
Pole Reserve Capacity			37,885		84.4	5,680			5,633	82.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 282.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	737	173.8	11,451	163.2	25.5	1,827	1,613	24	1,851	27.2
Unknown, COMMUNICATION	-239	-56.3	-3,389	-48.3	-7.6	-541	425	6	-535	-7.9
Pole	-75	-17.8	-1,107	-15.8	-2.5	-177	1,106	16	-160	-2.4
<Undefined>	1	0.3	62	0.9	0.1	10	95	1	11	0.2
Totals:	424	100.0	7,016	100.0	15.6	1,120	3,239	48	1,167	17.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	30.60	0.00	0.7200	0.04	0.462	45.9	140.4	45.9	6,210	-195,246	0	-307 -195,552
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	30.60	0.00	0.7200	0.21	0.462	106.3	322.3	106.3	6,210	190,108	0	-738 189,370
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	29.71	45.26	0.7200	0.04	0.462	45.9	140.4	45.9	6,210	-189,567	-68	-298 -189,933
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	29.71	45.26	0.7200	0.21	0.462	106.3	322.3	106.3	6,210	184,579	-157	-717 183,705
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	29.71	45.26	0.7200	0.04	0.462	45.9	140.4	45.9	6,210	-189,567	89	-298 -189,776

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	29.71	45.26	0.7200	0.21	0.462	106.3	322.3	106.3	6,210	184,579	205	-717	184,068
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.54	5.86	0.3980	0.04	0.145	45.9	140.4	45.9	2,128	-51,428	5	-173	-51,596
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.54	5.86	0.3980	0.78	0.145	78.2	236.8	78.2	450	9,611	8	59	9,678
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.54	5.86	0.3980	0.21	0.145	106.3	322.3	106.3	2,128	50,074	11	-418	49,668
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.85	5.90	0.3980	0.44	0.145	45.9	140.4	45.9	450	-10,553	5	-168	-10,716
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.85	5.90	0.3980	0.78	0.145	78.2	236.8	78.2	450	9,326	8	57	9,391
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.85	5.90	0.3980	1.19	0.145	106.3	322.3	106.3	450	10,275	11	-405	9,881
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.12	5.94	0.3980	0.44	0.145	45.9	140.4	45.9	450	-10,217	5	-163	-10,375
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.12	5.94	0.3980	0.78	0.145	78.2	236.8	78.2	450	9,029	8	55	9,093
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.12	5.94	0.3980	1.19	0.145	106.3	322.3	106.3	450	9,948	11	-392	9,567
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.06	6.00	0.3980	0.44	0.145	45.9	140.4	45.9	450	-9,727	5	-155	-9,877
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.06	6.00	0.3980	0.78	0.145	78.2	236.8	78.2	450	8,597	8	52	8,657
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.06	6.00	0.3980	1.19	0.145	106.3	322.3	106.3	450	9,471	11	-373	9,109
											Totals:	19,292	167	-5,098	14,360

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	16.56	6.25	1.3300	0.57	0.337	45.9	140.4	45.9	925	-15,724	12	-249	-15,961
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	16.56	6.25	1.3300	1.42	0.337	106.3	322.3	106.3	925	15,310	27	-599	14,739
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.43	6.31	1.5000	0.64	0.900	45.9	140.4	45.9	2,000	-31,682	21	-253	-31,914
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.43	6.31	1.5000	1.65	0.900	106.3	322.3	106.3	2,000	30,848	48	-610	30,287
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.33	6.37	0.6570	0.55	0.190	45.9	140.4	45.9	750	-11,030	7	-136	-11,159
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.33	6.37	0.6570	1.41	0.190	106.3	322.3	106.3	750	10,740	16	-327	10,428
		COMMUNICATION													
											Totals:	-1,538	131	-2,173	-3,580

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		28.90	4.82	321.4	321.4	50.00	4.50	3.50	96.00	30	35	65
Totals:											30	35	65

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	19.85	3.57	260.0	260.0	45.00	8.00	20.00	3.00	36.00	217	-223	-5
Totals:											217	-223	-5	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	29.73	0.00	0.0	0.0	13.00	9.00	10.50	0	-78	-78	
Pin	Pin Insulator - 5 kV	KU, UTILITY	29.08	45.00	45.3	0.0	6.00	3.50	7.50	-23	-21	-44	
Pin	Pin Insulator - 5 kV	KU, UTILITY	29.08	-45.00	237.5	0.0	6.00	3.50	7.50	30	-21	9	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.54	0.00	233.2	143.2	2.00	3.00	3.19	1	-6	-5	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.85	0.00	233.2	143.2	2.00	3.00	3.19	1	-6	-5	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.12	0.00	233.2	143.2	2.00	3.00	3.19	1	-6	-5	
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.06	0.00	233.2	143.2	2.00	3.00	3.19	1	-6	-4	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.56	0.00	231.4	321.4	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.43	0.00	231.4	321.4	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.33	0.00	231.4	321.4	5.00	3.00	0.00	3	0	3	
Totals:											21	-144	-123

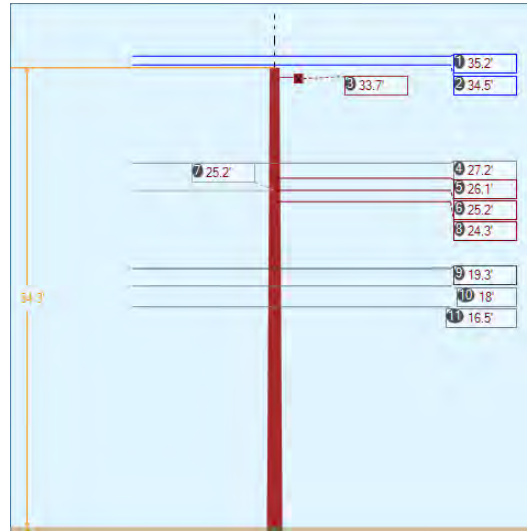
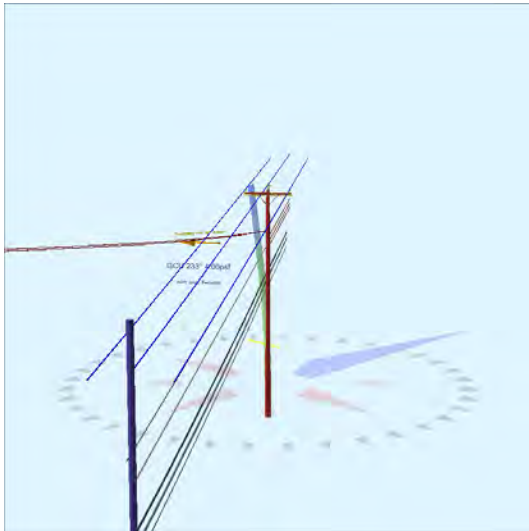
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	23.93	0.00	6.00	0.375	75.00	56.0	75.7	0.273	23.11	0.08

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,654	4,231	563	546	139	-96	-2,157	
Totals:											546	139	-96	-2,157

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	6.00	56.0	20,000	1.00	20,000	4,231	563	21.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.59	33.64	8.55	7.79	6.05	9.32	1.60e+6	60.00	57.00	29.73	115,342	1156.89	35.71

Pole Num:	106W - 27230-245	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.68	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.12	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.062041 Deg	Longitude:	-84.465749 Deg	Elevation:	859.256707346329		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.8	0.0
Groundline	34.8	0.0
Vertical	1.1	20.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,030	237.6
Groundline	29,030	237.6
GL Allowable	84,566	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	120.9	140.5		7.6	232.7	8.6	320.0
? EHS 3/8 (Span/Head)			25.2	11.0	232.7	13.7	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 237.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	858	74.8	24,604	84.8	29.1	1,973	558	5	1,979	29.1
Comms	249	21.7	4,782	16.5	5.7	384	435	4	388	5.7
GuyBraces	-158	-13.8	-3,995	-13.8	-4.7	-320	28	0	-320	-4.7
Pole	188	16.4	3,285	11.3	3.9	264	1,920	18	282	4.1
Crossarms	1	0.1	41	0.1	0.1	3	95	1	4	0.1
Insulators	9	0.8	312	1.1	0.4	25	91	1	26	0.4
Pole Load	1,146	100.0	29,030	100.0	34.3	2,328	3,127	30	2,358	34.7
Pole Reserve Capacity			55,536		65.7	4,472			4,442	65.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 237.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	373	32.6	11,719	40.4	13.9	940	554	5	945	13.9
<Undefined>	336	29.3	9,227	31.8	10.9	740	190	2	742	10.9
Unknown, COMMUNICATION	249	21.7	4,799	16.5	5.7	385	463	4	389	5.7
Pole	188	16.4	3,285	11.3	3.9	264	1,920	18	282	4.1
Totals:	1,146	100.0	29,030	100.0	34.3	2,328	3,127	30	2,358	34.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.19	0.00	0.7200	0.27	0.462	120.9	140.5	120.9	6,210	-35,225	0	1,502	-33,723
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.19	0.00	0.7200	0.04	0.462	45.9	320.4	45.9	6,210	35,718	0	571	36,288
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.52	45.33	0.7200	0.27	0.462	120.9	140.5	120.9	6,210	-34,550	321	1,473	-32,756
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.52	45.33	0.7200	0.04	0.462	45.9	320.4	45.9	6,210	35,033	122	560	35,715
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.52	45.33	0.7200	0.27	0.462	120.9	140.5	120.9	6,210	-34,550	-331	1,473	-33,408
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.52	45.33	0.7200	0.04	0.462	45.9	320.4	45.9	6,210	35,033	-126	560	35,467

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.21	6.59	0.3980	0.27	0.145	120.9	140.5	120.9	2,128	-9,326	22	854	-8,450
Secondary	TRIPLEX 2 AWG		27.21	6.59	0.8060	0.85	0.248	86.4	213.3	86.5	150	4,836	26	122	4,984
Secondary	TRIPLEX 2 AWG		27.21	6.59	0.8060	0.85	0.248	86.4	213.3	86.6	125	4,030	26	122	4,178
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.21	6.59	0.3980	0.04	0.145	45.9	320.4	45.9	2,128	9,456	8	324	9,789
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.08	6.66	0.3980	0.44	0.145	45.9	320.4	45.9	450	1,916	1	311	2,228
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.16	6.72	0.3980	0.44	0.145	45.9	320.4	45.9	450	1,849	1	300	2,150
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.32	6.77	0.3980	0.44	0.145	45.9	320.4	45.9	450	1,787	1	290	2,078
Totals:											16,006	71	8,463	24,540	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.33	7.07	1.3300	1.65	0.337	120.9	140.5	120.9	925	-2,879	56	1,236	-1,587
CATV	CATV 1.0	Unknown, COMMUNICATION	19.33	7.07	1.3300	0.57	0.337	45.9	320.4	45.9	925	2,919	21	470	3,410
Telco	TELE 1.5	Unknown, COMMUNICATION	18.03	7.15	1.5000	1.92	0.900	120.9	140.5	120.9	2,000	-5,806	98	1,260	-4,448
Telco	TELE 1.5	Unknown, COMMUNICATION	18.03	7.15	1.5000	0.64	0.900	45.9	320.4	45.9	2,000	5,887	37	479	6,403
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.46	7.25	0.6570	1.64	0.190	120.9	140.5	120.9	750	-1,988	32	666	-1,290
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.46	7.25	0.6570	0.55	0.190	45.9	320.4	45.9	750	2,016	12	253	2,281
Totals:											149	257	4,364	4,770	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.71	5.45	140.5	140.5	50.00	4.50	3.50	96.00	-5	46	41	
Totals:											-5	46	41

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.32	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.89	45.00	223.6	0.0	6.00	3.50	7.50	42	43	85

Pin	Pin Insulator - 5 kV	KU, UTILITY	33.89	-45.00	57.4	0.0	6.00	3.50	7.50	-43	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.21	0.00	230.5	140.5	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.08	0.00	320.4	320.4	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.16	0.00	320.4	320.4	2.00	3.00	3.19	0	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.32	0.00	320.4	320.4	2.00	3.00	3.19	0	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	19.33	0.00	230.5	140.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.03	0.00	230.5	140.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.46	0.00	230.5	140.5	5.00	3.00	0.00	6	0	6
Totals:										18	293	312

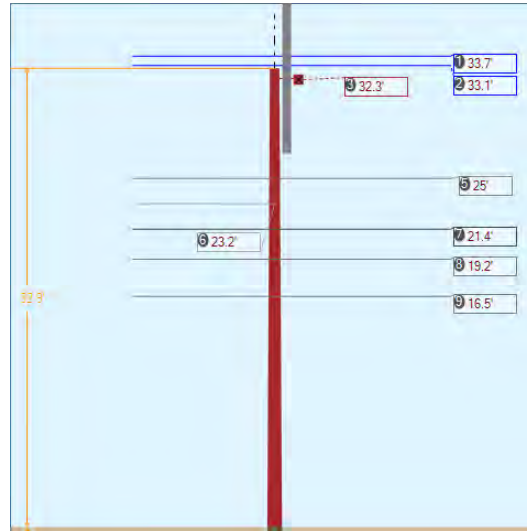
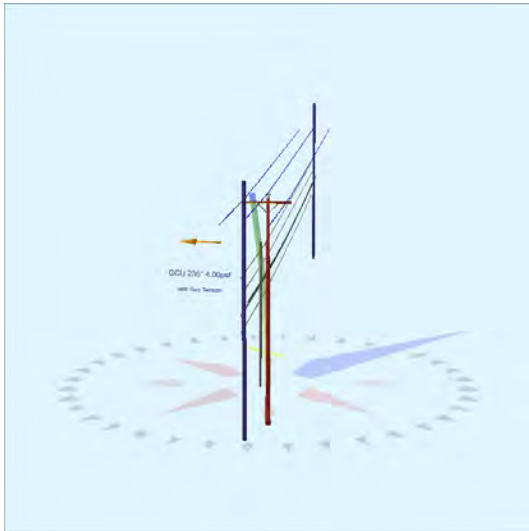
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	25.16	25.16	120.90	0.375	75.00	140.5	0.0	0.273	119.05	1.14

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	1,902	1,729	1,524	0	1,524	-189	-3,985
Totals:										0	1,524	-189	-3,985

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	120.90	140.5	20,000	1.00	20,000	1,729	1,524	8.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.67	33.28	10.66	7.86	7.32	11.50	1.60e+6	60.00	57.00	34.32	276,662	2843.04	90.91

Pole Num:	107W - 26230-241-01	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.13	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.08	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.061787 Deg	Longitude:	-84.465483 Deg	Elevation:	848.809173973396		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	236.3
Groundline	0.0	236.3
Vertical	20.2	51.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	231.4	236.3
Groundline	231.4	236.3
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	30.2	141.8		0.0	236.3	1.0	320.0
? EHS 3/8 (Span/Head)			23.2	0.0	236.3	1.6	320.0
? Single Helix Anchor	120.9	320.5		0.0	236.3	1.1	140.0
? EHS 3/8 (Span/Head)			23.2	0.0	236.3	1.7	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 231.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	812	59.7	26,272	71.3	40.4	2,746	379	4	2,750	40.4
Comms	327	24.0	6,415	17.4	9.9	670	394	5	675	9.9
GuyBraces	38	2.8	887	2.4	1.4	93	35	0	93	1.4
Pole	164	12.1	2,777	7.5	4.3	290	1,540	18	308	4.5
Crossarms	1	0.1	40	0.1	0.1	4	95	1	5	0.1
Risers	10	0.7	193	0.5	0.3	20	48	1	21	0.3
Insulators	8	0.6	255	0.7	0.4	27	80	1	28	0.4
Pole Load	1,360	100.0	36,838	100.0	56.7	3,850	2,570	30	3,880	57.1
Pole Reserve Capacity			28,140		43.3	2,950			2,920	42.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 231.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	868	63.8	27,601	74.9	42.5	2,885	513	6	2,891	42.5
Unknown, COMMUNICATION	327	24.0	6,420	17.4	9.9	671	422	5	676	9.9
Pole	164	12.1	2,777	7.5	4.3	290	1,540	18	308	4.5
<Undefined>	1	0.1	40	0.1	0.1	4	95	1	5	0.1
Totals:	1,360	100.0	36,838	100.0	56.7	3,850	2,570	30	3,880	57.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.75	0.00	0.7200	0.02	0.462	30.2	141.8	30.2	6,210	1,833	0	362	2,195
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.75	0.00	0.7200	0.27	0.462	120.9	320.5	120.9	6,210	4,353	0	1,445	5,798
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.07	45.29	0.7200	0.02	0.462	30.2	141.8	30.2	6,210	1,796	82	355	2,233
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.07	45.29	0.7200	0.27	0.462	120.9	320.5	120.9	6,210	4,266	329	1,416	6,011
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.07	45.29	0.7200	0.02	0.462	30.2	141.8	30.2	6,210	1,796	-82	355	2,069

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.07	45.29	0.7200	0.27	0.462	120.9	320.5	120.9	6,210	4,266	-329	1,416	5,353
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.99	6.30	0.3980	0.02	0.145	30.2	141.8	30.2	2,128	465	5	197	667
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.99	6.30	0.3980	0.27	0.145	120.9	320.5	120.9	2,128	1,104	21	787	1,911
Totals:											19,880	26	6,332	26,238	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.36	6.52	1.3300	0.37	0.337	30.2	141.8	30.2	925	173	-13	343	503
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.36	6.52	1.3300	1.65	0.337	120.9	320.5	120.9	925	410	-52	1,370	1,729
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.21	6.64	1.5000	0.41	0.900	30.2	141.8	30.2	2,000	336	23	337	696
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.21	6.64	1.5000	1.92	0.900	120.9	320.5	120.9	2,000	797	92	1,347	2,236
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.53	6.80	0.6570	0.35	0.190	30.2	141.8	30.2	750	108	8	168	284
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.53	6.80	0.6570	1.64	0.190	120.9	320.5	120.9	750	257	31	671	958
		COMMUNICATION													
Totals:											2,081	89	4,237	6,406	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.26	5.13	141.2	141.2	50.00	4.50	3.50	96.00	0	40	40	
Totals:											0	40	40

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 230.0°	Riser	25.36	5.45	230.0	230.0	25.36	304.30	6.00	6.00	304.30	28	165	193
Totals:											28	165	193

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	32.87	0.00	0.0	0.0	13.00	9.00	10.50	0	152	152
Pin	Pin Insulator - 5 kV	32.44	45.00	224.7	0.0	6.00	3.50	7.50	43	41	84

Pin	Pin Insulator - 5 kV	KU, UTILITY	32.44	-45.00	57.7	0.0	6.00	3.50	7.50	-43	41	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.99	0.00	231.2	141.2	2.00	3.00	3.19	2	12	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.36	0.00	51.2	141.2	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.21	0.00	231.2	141.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.53	0.00	231.2	141.2	5.00	3.00	0.00	5	0	5
Totals:										7	247	254

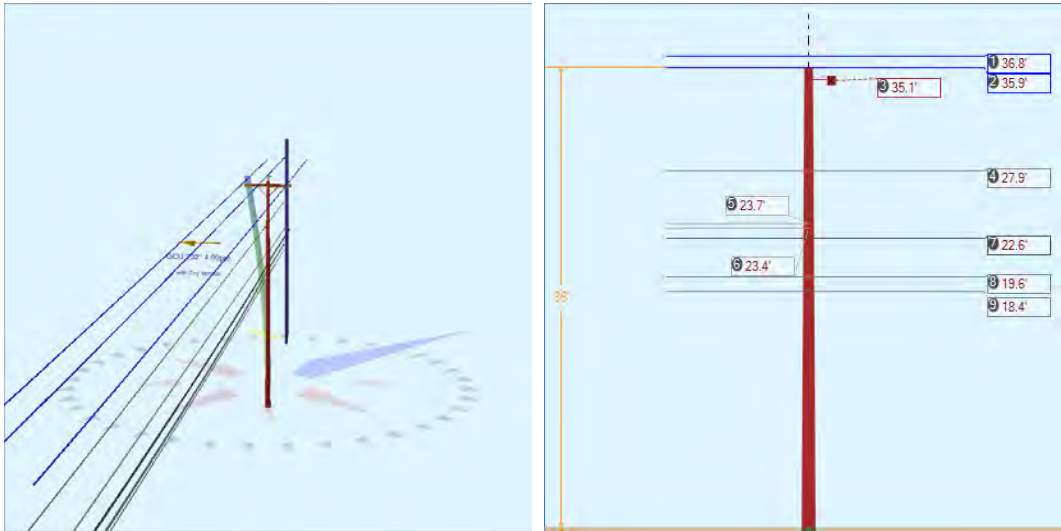
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	23.18	23.18	30.22	0.375	75.00	141.8	0.0	0.273	28.39	0.00
EHS 3/8	Span/Head	KU, UTILITY	23.18	23.18	120.86	0.375	75.00	320.5	0.0	0.273	119.03	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	222	202	0	0	0	0	176
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	232	211	0	0	0	0	710
Totals:										0	0	0	886

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	30.22	141.8	20,000	1.00	20,000	202	0	1.0
Single Helix Anchor			18.00	120.86	320.5	20,000	1.00	20,000	211	0	1.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.16	33.36	9.74	7.03	6.69	10.54	1.60e+6	60.00	57.00	32.87	203,076	1976.99	76.92

Pole Num:	108W - 27230-243	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.03	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.23	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.061712 Deg	Longitude:	-84.465429 Deg	Elevation:	851.625794852047		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.1	0.0
Groundline	34.1	0.0
Vertical	1.5	21.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,176	232.0
Groundline	24,176	232.0
GL Allowable	71,935	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	150.6	142.1		0.0	232.0	0.9	320.0
? EHS 3/8 (Span/Head)			23.7	0.0	232.0	1.4	320.0
? Single Helix Anchor	30.2	321.8		0.0	232.0	1.1	140.0
? EHS 3/8 (Span/Head)			23.4	0.1	232.0	1.8	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 232.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	382	42.0	13,393	55.4	18.6	1,262	453	5	1,267	18.6
Comms	288	31.7	6,000	24.8	8.3	566	471	5	571	8.4
GuyBraces	46	5.1	1,093	4.5	1.5	103	42	0	103	1.5
Pole	184	20.3	3,367	13.9	4.7	317	1,761	19	336	4.9
Crossarms	1	0.1	43	0.2	0.1	4	95	1	5	0.1
Insulators	8	0.8	279	1.2	0.4	26	80	1	27	0.4
Pole Load	909	100.0	24,176	100.0	33.6	2,278	2,902	31	2,309	34.0
Pole Reserve Capacity			47,759		66.4	4,522			4,491	66.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 232.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	435	47.9	14,760	61.1	20.5	1,391	546	6	1,397	20.5
Unknown, COMMUNICATION	288	31.7	6,006	24.8	8.4	566	500	5	571	8.4
Pole	184	20.3	3,367	13.9	4.7	317	1,761	19	336	4.9
<Undefined>	1	0.1	43	0.2	0.1	4	95	1	5	0.1
Totals:	909	100.0	24,176	100.0	33.6	2,278	2,902	31	2,309	34.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.85	0.00	0.7200	0.41	0.462	150.6	142.1	150.6	6,210	374	0	1,976	2,350
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.85	0.00	0.7200	0.02	0.462	30.2	321.8	30.2	6,210	1,185	0	397	1,581
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.93	45.29	0.7200	0.41	0.462	150.6	142.1	150.6	6,210	365	409	1,926	2,701
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.93	45.29	0.7200	0.02	0.462	30.2	321.8	30.2	6,210	1,155	82	387	1,624
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.93	45.29	0.7200	0.41	0.462	150.6	142.1	150.6	6,210	365	-410	1,926	1,882
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.93	45.29	0.7200	0.02	0.462	30.2	321.8	30.2	6,210	1,155	-82	387	1,459

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.88	6.32	0.3980	0.42	0.145	150.6	142.1	150.6	2,128	97	26	1,100	1,223
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.88	6.32	0.3980	0.02	0.145	30.2	321.8	30.2	2,128	307	5	221	533
Totals:											5,003	31	8,318	13,352	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.60	6.62	1.3300	2.16	0.337	150.6	142.1	150.6	925	34	-65	1,816	1,785
CATV	CATV 1.0	Unknown, COMMUNICATION	22.60	6.62	1.3300	0.37	0.337	30.2	321.8	30.2	925	108	-13	365	460
Telco	TELE 1.5	Unknown, COMMUNICATION	19.58	6.80	1.5000	2.54	0.900	150.6	142.1	150.6	2,000	64	117	1,720	1,901
Telco	TELE 1.5	Unknown, COMMUNICATION	19.58	6.80	1.5000	0.41	0.900	30.2	321.8	30.2	2,000	203	23	345	571
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	6.87	0.6570	2.14	0.190	150.6	142.1	150.6	750	23	39	937	998
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.44	6.87	0.6570	0.35	0.190	30.2	321.8	30.2	750	72	8	188	267
Totals:											503	108	5,370	5,982	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.11	5.14	141.9	141.9	50.00	4.50	3.50	96.00	0	43	43	
Totals:											0	43	43

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.97	0.00	0.0	0.0	13.00	9.00	10.50	0	167	167
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.30	45.00	225.4	0.0	6.00	3.50	7.50	43	45	88
Pin	Pin Insulator - 5 kV	KU, UTILITY	35.30	-45.00	58.5	0.0	6.00	3.50	7.50	-43	45	2
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.88	0.00	231.9	141.9	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	22.60	0.00	51.9	141.9	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.58	0.00	231.9	141.9	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	18.44	0.00	231.9	141.9	5.00	3.00	0.00	5	0	5
Totals:										8	271	278

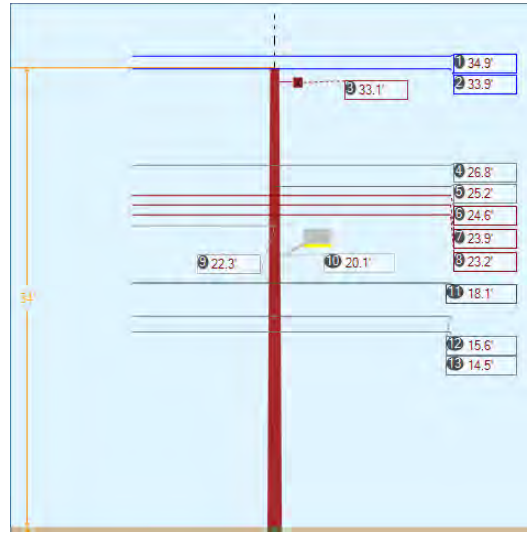
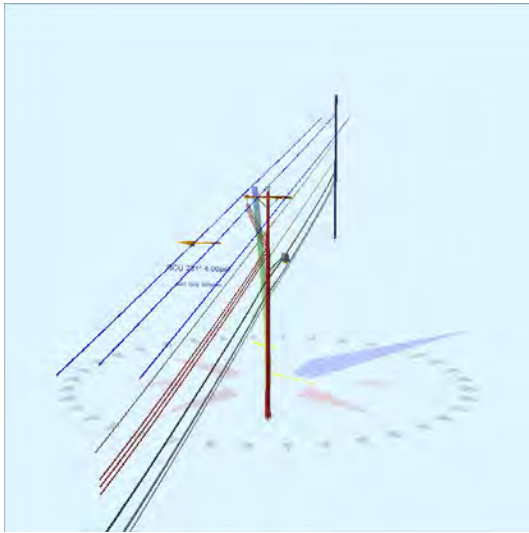
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.74	23.74	150.55	0.375	75.00	142.1	0.0	0.273	148.71	0.00
EHS 3/8	Span/Head	KU, UTILITY	23.41	23.41	30.22	0.375	75.00	321.8	0.0	0.273	28.38	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	198	180	0	0	0	910	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	244	222	7	0	7	179	
Totals:										0	7	0	1,089

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	150.55	142.1	20,000	1.00	20,000	180	0	0.9
Single Helix Anchor		18.00	30.22	321.8	20,000	1.00	20,000	222	7	1.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.81	33.51	10.04	7.77	6.69	10.90	1.60e+6	60.00	57.00	35.97	195,311	1934.73	66.67

Pole Num:	109W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.97	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.51	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.061393 Deg	Longitude:	-84.465101 Deg	Elevation:	854.879366978625		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	52.3	0.0 231.2
Groundline	52.3	0.0 231.2
Vertical	1.9	21.5 142.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,909	230.4 231.2
Groundline	34,909	230.4 231.2
GL Allowable	67,525	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	150.6	322.1		2.3	231.2	3.3	150.0
? EHS 3/8 (Span/Head)			22.3	3.4	231.2	5.2	150.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 230.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	838	57.2	23,835	68.3	35.3	2,397	856	10	2,406	35.4
Comms	399	27.2	6,895	19.8	10.2	693	700	8	701	10.3
GuyBraces	25	1.7	554	1.6	0.8	56	35	0	56	0.8
Pole	172	11.8	2,979	8.5	4.4	300	1,621	18	318	4.7
Crossarms	1	0.1	43	0.1	0.1	4	95	1	5	0.1
Streetlights	20	1.4	248	0.7	0.4	25	86	1	26	0.4
Insulators	11	0.7	356	1.0	0.5	36	106	1	37	0.5
Pole Load	1,465	100.0	34,909	100.0	51.7	3,511	3,498	39	3,550	52.2
Pole Reserve Capacity			32,616		48.3	3,290			3,250	47.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 230.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	893	61.0	24,976	71.6	37.0	2,512	1,055	12	2,523	37.1
Unknown, COMMUNICATION	399	27.2	6,911	19.8	10.2	695	728	8	703	10.3
Pole	172	11.8	2,979	8.5	4.4	300	1,621	18	318	4.7
<Undefined>	1	0.1	43	0.1	0.1	4	95	1	5	0.1
Totals:	1,465	100.0	34,909	100.0	51.7	3,511	3,498	39	3,550	52.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.91	0.00	0.7200	0.26	0.462	117.8	142.2	117.8	6,210	8,784	0	1,464	10,248
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.91	0.00	0.7200	0.41	0.462	150.6	322.1	150.6	6,210	-8,292	0	1,871	-6,422
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.95	45.29	0.7200	0.26	0.462	117.8	142.2	117.8	6,210	8,544	322	1,424	10,289
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.95	45.29	0.7200	0.41	0.462	150.6	322.1	150.6	6,210	-8,065	411	1,819	-5,835
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.95	45.29	0.7200	0.26	0.462	117.8	142.2	117.8	6,210	8,544	-319	1,424	9,649

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.95	45.29	0.7200	0.41	0.462	150.6	322.1	150.6	6,210	-8,065	-407	1,819	-6,653
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.82	6.26	0.3980	0.26	0.145	117.8	142.2	117.8	2,128	2,311	20	827	3,159
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.82	6.26	0.3980	0.42	0.145	150.6	322.1	150.6	2,128	-2,182	26	1,057	-1,099
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.25	6.36	0.3980	0.05	0.145	51.1	310.0	51.1	250	1,484	2	326	1,811
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.58	6.40	0.3980	1.36	0.145	117.8	142.2	117.8	450	448	1	758	1,207
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.58	6.40	0.3980	0.05	0.145	51.1	310.0	51.1	250	1,444	2	317	1,763
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.88	6.44	0.3980	0.05	0.145	51.1	310.0	51.1	250	1,403	2	308	1,713
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.88	6.44	0.3980	1.36	0.145	117.8	142.2	117.8	450	435	1	737	1,173
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.15	6.48	0.3980	0.05	0.145	51.1	310.0	51.1	250	1,360	2	299	1,661
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.15	6.48	0.3980	1.36	0.145	117.8	142.2	117.8	450	422	1	714	1,137
Totals:											8,574	62	15,165	23,801	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.11	6.77	1.3300	1.60	0.337	117.8	142.2	117.9	925	678	52	1,138	1,869
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.11	6.77	1.3300	2.16	0.337	150.6	322.1	150.6	925	-640	67	1,454	881
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.64	6.92	1.5000	1.86	0.900	117.8	142.2	117.9	2,000	1,267	93	1,074	2,434
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.64	6.92	1.5000	2.54	0.900	150.6	322.1	150.6	2,000	-1,196	119	1,373	296
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.48	6.99	0.6570	1.59	0.190	117.8	142.2	117.8	750	440	31	575	1,046
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	14.48	6.99	0.6570	2.14	0.190	150.6	322.1	150.6	750	-415	39	735	359
		COMMUNICATION													
Totals:											134	401	6,350	6,885	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.14	5.14	142.6	142.6	50.00	4.50	3.50	96.00	2	42	43	
Totals:											2	42	43

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	20.12	4.16	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-152	399	247
Totals:												-152	399	247

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.03	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.33	45.00	226.1	0.0	6.00	3.50	7.50	43	43	86	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.33	-45.00	59.1	0.0	6.00	3.50	7.50	-43	43	0	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.82	0.00	232.6	142.6	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.25	0.00	310.0	310.0	2.00	3.00	3.19	0	12	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.58	0.00	143.2	143.2	2.00	3.00	3.19	0	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.58	0.00	310.0	310.0	2.00	3.00	3.19	0	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.88	0.00	310.0	310.0	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.88	0.00	143.2	143.2	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.15	0.00	310.0	310.0	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.15	0.00	143.2	143.2	2.00	3.00	3.19	0	11	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.11	0.00	232.6	142.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	15.64	0.00	232.6	142.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	14.48	0.00	232.6	142.6	5.00	3.00	0.00	6	0	6	
Totals:											20	335	355

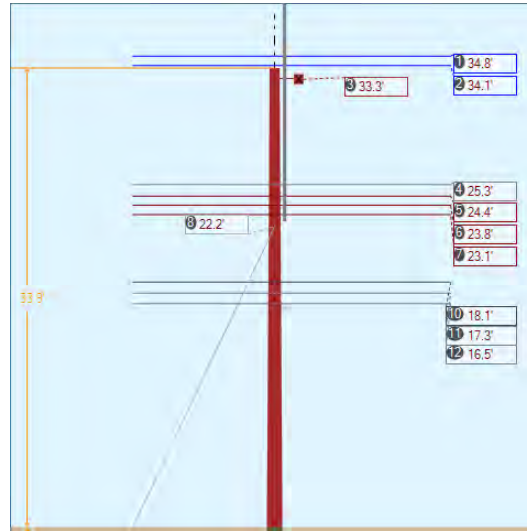
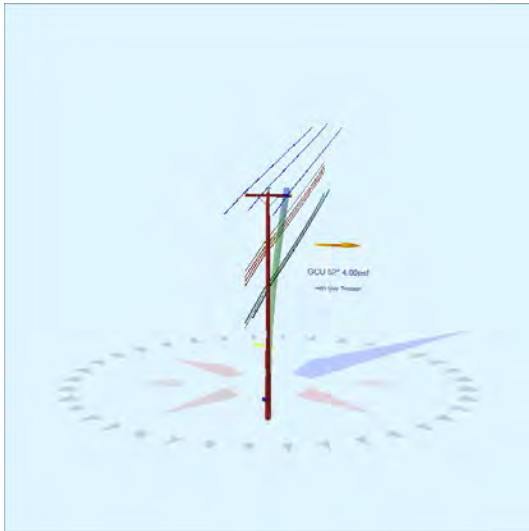
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	22.34	22.34	150.55	0.375	75.00	322.1	0.0	0.273	148.71	0.44

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	722	656	469	0	469	-14	553
Totals:										0	469	-14	553

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	150.55	322.1	20,000	1.00	20,000	656	469	3.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.50	33.54	9.82	8.36	6.69	10.67	1.60e+6	60.00	57.00	34.03	184,391	1841.31	52.63

Pole Num:	110W - NT	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.10	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.96	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.061136 Deg	Longitude:	-84.464851 Deg	Elevation:	861.280880426621		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.5	0.0
Groundline	37.5	0.0
Vertical	1.0	317.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,948	51.6
Groundline	30,948	51.6
GL Allowable	83,454	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	8.9	137.9		0.0	52.0	2.0	300.0
? EHS 3/8 (Down)			22.2	0.0	52.0	3.1	300.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 51.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	707	58.0	22,075	71.3	26.5	1,795	505	5	1,800	26.5
Comms	277	22.7	4,736	15.3	5.7	385	377	4	389	5.7
GuyBraces	6	0.5	136	0.4	0.2	11	7	0	11	0.2
Pole	186	15.2	3,211	10.4	3.9	261	1,886	18	279	4.1
Crossarms	1	0.1	41	0.1	0.1	3	95	1	4	0.1
Risers	32	2.6	473	1.5	0.6	39	42	0	39	0.6
Insulators	9	0.7	275	0.9	0.3	22	91	1	23	0.3
Pole Load	1,218	100.0	30,948	100.0	37.1	2,516	3,004	29	2,545	37.4
Pole Reserve Capacity			52,506		62.9	4,284			4,255	62.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 51.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	754	61.9	22,965	74.2	27.5	1,867	617	6	1,873	27.5
Unknown, COMMUNICATION	277	22.7	4,731	15.3	5.7	385	405	4	389	5.7
Pole	186	15.2	3,211	10.4	3.9	261	1,886	18	279	4.1
<Undefined>	1	0.1	41	0.1	0.1	3	95	1	4	0.1
Totals:	1,218	100.0	30,948	100.0	37.1	2,516	3,004	29	2,545	37.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.78	0.00	0.7200	0.01	0.462	26.8	141.4	26.8	6,210	965	0	331	1,296
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.78	0.00	0.7200	0.26	0.462	117.8	322.2	117.8	6,210	2,959	0	1,459	4,418
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.08	45.33	0.7200	0.01	0.462	26.8	141.4	26.8	6,210	945	73	325	1,343
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.08	45.33	0.7200	0.26	0.462	117.8	322.2	117.8	6,210	2,899	321	1,430	4,650
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.08	45.33	0.7200	0.01	0.462	26.8	141.4	26.8	6,210	945	-73	325	1,197

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.08	45.33	0.7200	0.26	0.462	117.8	322.2	117.8	6,210	2,899	-320	1,430	4,009
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.30	6.68	0.3980	0.01	0.145	26.8	141.4	26.8	2,128	240	-5	177	413
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.30	6.68	0.3980	0.26	0.145	117.8	322.2	117.8	2,128	737	-22	781	1,496
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.45	6.74	0.3980	0.24	0.145	26.8	141.4	26.8	450	49	-5	171	216
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.45	6.74	0.3980	1.36	0.145	117.8	322.2	117.8	450	151	-22	755	883
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.78	6.78	0.3980	0.24	0.145	26.8	141.4	26.8	450	48	-5	167	209
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.78	6.78	0.3980	1.36	0.145	117.8	322.2	117.8	450	146	-22	734	858
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.09	6.82	0.3980	0.24	0.145	26.8	141.4	26.8	450	46	-5	162	203
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.09	6.82	0.3980	1.36	0.145	117.8	322.2	117.8	450	142	-22	713	833
											Totals:	13,172	-106	8,959	22,025

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.09	7.12	1.3300	0.33	0.337	26.8	141.4	26.8	925	75	12	258	346
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.09	7.12	1.3300	1.60	0.337	117.8	322.2	117.9	925	229	55	1,138	1,422
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.29	7.17	1.5000	0.37	0.900	26.8	141.4	26.8	2,000	154	-22	270	402
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.29	7.17	1.5000	1.86	0.900	117.8	322.2	117.9	2,000	473	-97	1,188	1,565
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.51	7.22	0.6570	0.31	0.190	26.8	141.4	26.8	750	55	-7	149	197
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.51	7.22	0.6570	1.59	0.190	117.8	322.2	117.8	750	169	-32	656	794
		COMMUNICATION													
											Totals:	1,156	-90	3,660	4,726

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	33.26	5.45	322.3	322.3	50.00	4.50	3.50	96.00	1	41	41		
											Totals:	1	41	41

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 320.0°	Riser	KU, UTILITY	22.05	5.85	320.0	320.0	22.05	264.62	2.50	2.50	264.62	0	472	472
Totals:											0	472	472	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.90	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.45	45.00	45.4	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.45	-45.00	239.2	0.0	6.00	3.50	7.50	-43	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.30	0.00	232.3	322.3	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.45	0.00	232.3	322.3	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.78	0.00	232.3	322.3	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.09	0.00	232.3	322.3	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	18.09	0.00	52.3	322.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.29	0.00	232.3	322.3	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.51	0.00	232.3	322.3	5.00	3.00	0.00	-6	0	-6
Totals:										-14	288	274

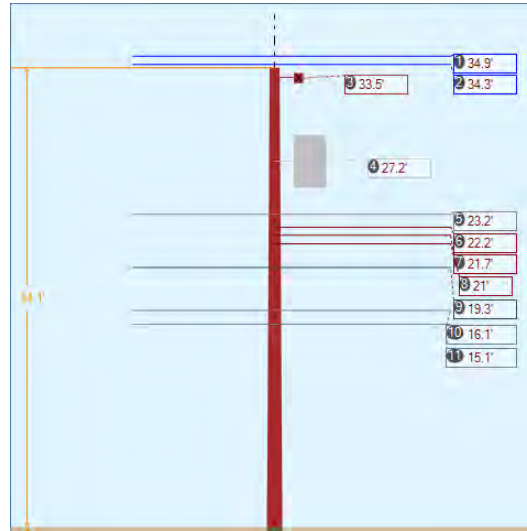
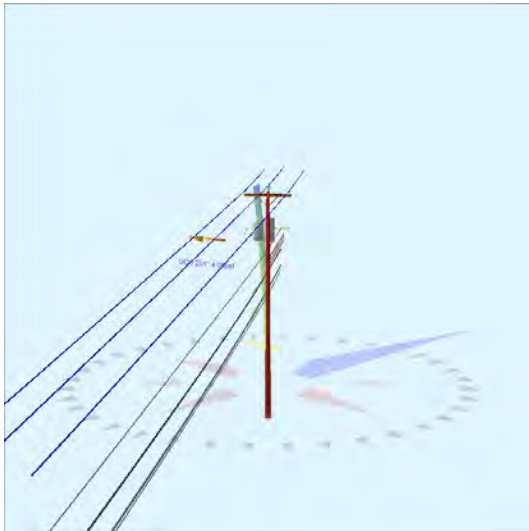
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	22.21	0.00	8.85	0.375	75.00	137.9	68.0	0.273	22.28	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	428	389	0	0	0	0	136
Totals:										0	0	0	136

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	8.85	137.9	20,000	1.00	20,000	389	0	1.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.85	33.17	10.65	7.57	7.32	11.45	1.60e+6	60.00	57.00	33.90	298,381	3003.90	100.00

Pole Num:	111W - 27230-265	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.061080 Deg	Longitude:	-84.464797 Deg	Elevation:	860.763904717231		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	62.0	0.0
Groundline	62.0	0.0
Vertical	18.3	23.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,407	273.1
Groundline	51,407	273.1
GL Allowable	83,852	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 273.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,488	73.9	38,761	75.4	46.2	3,140	455	4	3,144	46.2
Comms	252	12.5	4,472	8.7	5.3	362	446	4	367	5.4
PowerEquipments	85	4.2	4,649	9.0	5.5	377	1,852	18	394	5.8
Pole	173	8.6	3,005	5.9	3.6	243	1,898	18	262	3.8
Crossarms	8	0.4	243	0.5	0.3	20	95	1	21	0.3
Insulators	8	0.4	278	0.5	0.3	23	91	1	23	0.3
Pole Load	2,014	100.0	51,407	100.0	61.3	4,164	4,839	47	4,211	61.9
Pole Reserve Capacity			32,445		38.7	2,636			2,589	38.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 273.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,581	78.5	43,674	85.0	52.1	3,538	2,370	23	3,561	52.4
Unknown, COMMUNICATION	252	12.5	4,485	8.7	5.4	363	475	5	368	5.4
Pole	173	8.6	3,005	5.9	3.6	243	1,898	18	262	3.8
<Undefined>	8	0.4	243	0.5	0.3	20	95	1	21	0.3
Totals:	2,014	100.0	51,407	100.0	61.3	4,164	4,839	47	4,211	61.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.93	0.00	0.7200	0.37	0.462	144.4	142.9	144.4	6,210	-140,171	0	1,302	-138,869
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.93	0.00	0.7200	0.01	0.462	26.8	321.4	26.8	6,210	144,462	0	234	144,696
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.31	45.33	0.7200	0.37	0.462	144.4	142.9	144.4	6,210	-137,678	265	1,279	-136,134
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.31	45.33	0.7200	0.01	0.462	26.8	321.4	26.8	6,210	141,893	49	230	142,172
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.31	45.33	0.7200	0.37	0.462	144.4	142.9	144.4	6,210	-137,678	-328	1,279	-136,727
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.31	45.33	0.7200	0.01	0.462	26.8	321.4	26.8	6,210	141,893	-61	230	142,062

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.19	6.82	0.3980	0.37	0.145	144.4	142.9	144.4	2,128	-31,868	20	636	-31,212
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.19	6.82	0.3980	0.01	0.145	26.8	321.4	26.8	2,128	32,844	4	114	32,962
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.25	6.88	0.3980	0.24	0.145	26.8	321.4	26.8	450	6,663	3	109	6,776
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.65	6.92	0.3980	0.24	0.145	26.8	321.4	26.8	450	6,484	3	107	6,594
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.01	6.95	0.3980	0.24	0.145	26.8	321.4	26.8	450	6,291	3	103	6,397
Totals:											33,134	-40	5,621	38,716	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.27	7.06	1.3300	2.04	0.337	144.4	142.9	144.4	925	-11,509	50	1,076	-10,382
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.27	7.06	1.3300	0.33	0.337	26.8	321.4	26.8	925	11,861	9	193	12,064
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.07	7.25	1.5000	2.40	0.900	144.4	142.9	144.4	2,000	-20,755	90	981	-19,683
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.07	7.25	1.5000	0.36	0.900	26.8	321.4	26.8	2,000	21,390	17	176	21,583
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.05	7.32	0.6570	2.02	0.190	144.4	142.9	144.4	750	-7,290	30	532	-6,728
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.05	7.32	0.6570	0.30	0.190	26.8	321.4	26.8	750	7,513	6	95	7,614
		COMMUNICATION													
Totals:											1,211	202	3,054	4,467	

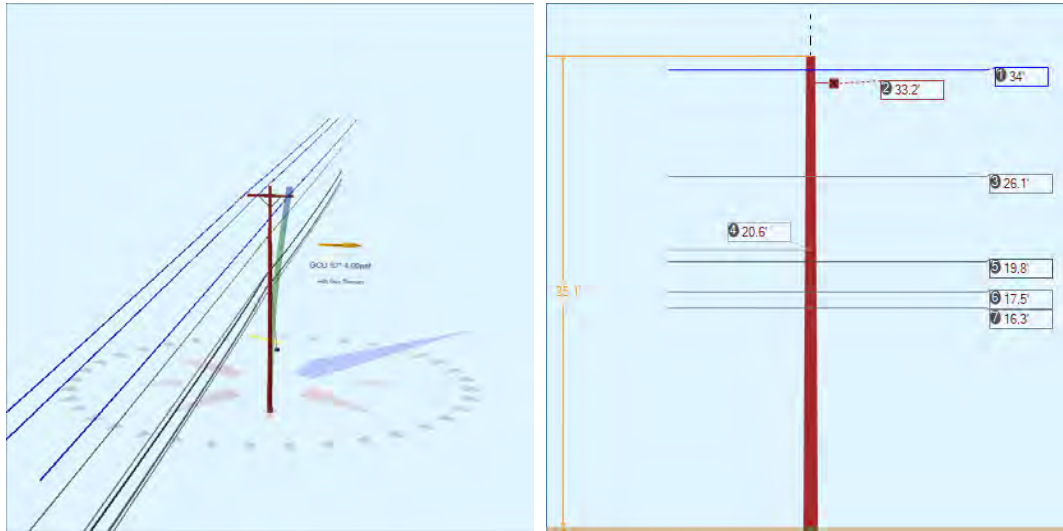
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	27.15	22.08	320.0	320.0	640.00	47.00	--	24.00	--	1,529	1,382	2,911
Transformer	1PH-15KVA	KU, UTILITY	27.15	21.08	230.0	230.0	335.00	34.00	--	22.00	--	816	916	1,732
Totals:											2,346	2,298	4,643	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		33.49	5.44	142.1	142.1	50.00	4.50	3.50	96.00	-28	271	243
Totals:											-28	271	243

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.05	0.00	0.0	0.0	13.00	9.00	10.50	0	147	147
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	45.00	225.2	0.0	6.00	3.50	7.50	29	40	69
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.68	-45.00	59.0	0.0	6.00	3.50	7.50	-36	40	4
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.19	0.00	232.1	142.1	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.25	0.00	321.4	321.4	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.65	0.00	321.4	321.4	2.00	3.00	3.19	1	9	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.01	0.00	321.4	321.4	2.00	3.00	3.19	1	9	11
Bolt	Three Bolt	Unknown, COMMUNICATION	19.27	0.00	232.1	142.1	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	16.07	0.00	232.1	142.1	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	15.05	0.00	232.1	142.1	5.00	3.00	0.00	4	0	4
Totals:										12	265	277

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	23.01	33.66	10.52	16.97	7.32	11.47	1.60e+6	60.00	57.00	34.05	26,503	264.41	5.46

Pole Num:	112W - 26230-283	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.94	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.89	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.060775 Deg	Longitude:	-84.464484 Deg	Elevation:	862.628287509104		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.9	0.0
Groundline	37.9	0.0
Vertical	2.1	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	26,013	49.6
Groundline	26,013	49.6
GL Allowable	69,846	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	145.4	142.7		2.6	52.0	2.6	45.6
? EHS 3/8 (Span/Head)			20.7	3.8	52.0	4.2	45.6
? Single Helix Anchor	24.5	318.0		3.6	52.0	3.7	70.0
? EHS 3/8 (Down)			20.7	5.2	52.0	5.9	70.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 49.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	479	43.5	15,227	58.5	21.8	1,487	726	8	1,495	22.0
Comms	437	39.7	7,445	28.6	10.7	727	755	8	735	10.8
GuyBraces	1	0.1	29	0.1	0.0	3	741	8	11	0.2
Pole	179	16.2	3,162	12.2	4.5	309	1,695	19	327	4.8
Crossarms	1	0.1	44	0.2	0.1	4	95	1	5	0.1
Insulators	4	0.4	106	0.4	0.2	10	66	1	11	0.2
Pole Load	1,102	100.0	26,013	100.0	37.2	2,540	4,079	45	2,585	38.0
Pole Reserve Capacity			43,833		62.8	4,260			4,215	62.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 49.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	484	44.0	15,378	59.1	22.0	1,502	1,505	16	1,518	22.3
Unknown, COMMUNICATION	437	39.7	7,429	28.6	10.6	726	784	9	734	10.8
Pole	179	16.2	3,162	12.2	4.5	309	1,695	19	327	4.8
<Undefined>	1	0.1	44	0.2	0.1	4	95	1	5	0.1
Totals:	1,102	100.0	26,013	100.0	37.2	2,540	4,079	45	2,585	38.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.03	18.74	0.7200	0.39	0.462	145.4	142.7	145.4	6,210	-14,674	-155	1,759	-13,070
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.03	18.74	0.7200	0.38	0.462	144.4	322.9	144.4	6,210	15,632	-154	1,747	17,225
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.03	45.30	0.7200	0.39	0.462	145.4	142.7	145.4	6,210	-14,674	397	1,759	-12,517
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.03	45.30	0.7200	0.38	0.462	144.4	322.9	144.4	6,210	15,632	395	1,747	17,774
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.03	45.30	0.7200	0.39	0.462	145.4	142.7	145.4	6,210	-14,674	-392	1,759	-13,307
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.03	45.30	0.7200	0.38	0.462	144.4	322.9	144.4	6,210	15,632	-390	1,747	16,990

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.11	6.37	0.3980	0.39	0.145	145.4	142.7	145.4	2,128	-3,854	-25	992	-2,887
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.11	6.37	0.3980	0.39	0.145	144.4	322.9	144.4	2,128	4,105	-25	986	5,066
Totals:											3,127	-350	12,497	15,274	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.76	6.74	1.3300	2.06	0.337	145.4	142.7	145.4	925	-1,268	-64	1,531	199
CATV	CATV 1.0	Unknown, COMMUNICATION	19.76	6.74	1.3300	2.05	0.337	144.4	322.9	144.4	925	1,351	-64	1,521	2,808
Telco	TELE 1.5	Unknown, COMMUNICATION	17.51	6.87	1.5000	2.42	0.900	145.4	142.7	145.4	2,000	-2,430	-114	1,483	-1,061
Telco	TELE 1.5	Unknown, COMMUNICATION	17.51	6.87	1.5000	2.40	0.900	144.4	322.9	144.4	2,000	2,589	-113	1,473	3,948
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.33	6.94	0.6570	2.05	0.190	145.4	142.7	145.4	750	-849	-38	800	-87
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	16.33	6.94	0.6570	2.03	0.190	144.4	322.9	144.4	750	905	-37	794	1,662
Totals:											297	-430	7,601	7,468	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.22	5.20	322.8	322.8	50.00	4.50	3.50	96.00	2	42	44	
Totals:											2	42	44

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.41	-18.00	248.9	0.0	6.00	3.50	7.50	-17	43	26
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.41	45.00	46.2	0.0	6.00	3.50	7.50	43	43	86
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.41	-45.00	239.4	0.0	6.00	3.50	7.50	-42	43	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.11	0.00	232.8	322.8	2.00	3.00	3.19	-2	12	10
Bolt	Three Bolt	Unknown, COMMUNICATION	19.76	0.00	232.8	322.8	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.51	0.00	232.8	322.8	5.00	3.00	0.00	-5	0	-5

Bolt	Three Bolt	Unknown, COMMUNICATION	16.33	0.00	232.8	322.8	5.00	3.00	0.00	-5	0	-5
Totals:										-35	140	106

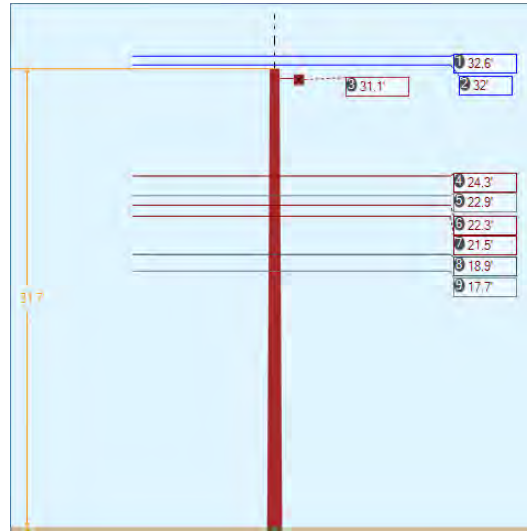
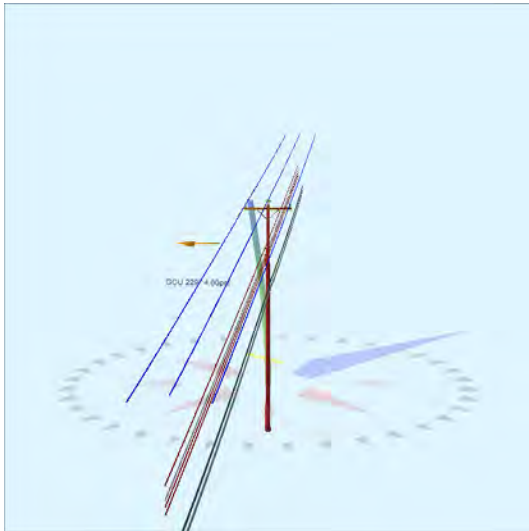
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	20.65	20.65	145.37	0.375	75.00	142.7	0.0	0.273	143.52	0.47
EHS 3/8	Down	KU, UTILITY	20.65	0.00	24.50	0.375	75.00	318.0	40.0	0.273	30.27	0.14

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	575	523	520	0	520	-28	185
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	822	747	716	460	548	-16	-155
Totals:										460	1,069	-44	29

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	145.37	142.7	20,000	1.00	20,000	523	520	2.6
Single Helix Anchor		18.00	24.50	318.0	20,000	1.00	20,000	747	716	3.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.51	33.50	9.94	9.02	6.69	10.79	1.60e+6	60.00	57.00	35.06	193,541	1942.24	47.62

Pole Num:	157W - 75128-32621	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.30	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.65	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.065902 Deg	Longitude:	-84.450678 Deg	Elevation:	880.575646599925		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.2	0.0
Groundline	38.2	0.0
Vertical	13.4	20.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	23,513	228.4
Groundline	23,513	228.4
GL Allowable	62,476	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 228.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	568	56.1	15,847	67.4	25.4	1,720	833	10	1,730	25.4
Comms	277	27.3	4,778	20.3	7.7	519	515	6	525	7.7
Pole	158	15.6	2,581	11.0	4.1	280	1,460	17	297	4.4
Crossarms	1	0.1	39	0.2	0.1	4	95	1	5	0.1
Insulators	9	0.9	269	1.1	0.4	29	82	1	30	0.4
Pole Load	1,012	100.0	23,513	100.0	37.6	2,552	2,984	35	2,587	38.0
Pole Reserve Capacity			38,963		62.4	4,248			4,213	62.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 228.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	577	57.0	16,126	68.6	25.8	1,750	896	11	1,761	25.9
Unknown, COMMUNICATION	277	27.3	4,767	20.3	7.6	517	534	6	524	7.7
Pole	158	15.6	2,581	11.0	4.1	280	1,460	17	297	4.4
<Undefined>	1	0.1	39	0.2	0.1	4	95	1	5	0.1
Totals:	1,012	100.0	23,513	100.0	37.6	2,552	2,984	35	2,587	38.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	32.58	0.00	0.7200	0.77	0.462	118.5	139.1	118.5	3,210	1,191	0	1,375	2,566
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	32.58	0.00	0.7200	0.79	0.462	119.9	318.9	119.9	3,210	-825	0	1,392	566
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.96	45.29	0.7200	0.77	0.462	118.5	139.1	118.5	3,210	1,168	323	1,349	2,840
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.96	45.29	0.7200	0.79	0.462	119.9	318.9	119.9	3,210	-810	327	1,365	882
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.96	45.29	0.7200	0.77	0.462	118.5	139.1	118.5	3,210	1,168	-322	1,349	2,195
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	31.96	45.29	0.7200	0.79	0.462	119.9	318.9	119.9	3,210	-810	-326	1,365	229
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.28	6.28	0.3980	0.26	0.145	118.5	139.1	118.5	2,128	588	20	754	1,362

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.28	6.28	0.3980	0.27	0.145	119.9	318.9	119.9	2,128	-407	21	763	376
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.93	6.36	0.3980	0.26	0.145	118.5	139.1	118.5	2,128	555	21	712	1,287
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.93	6.36	0.3980	0.27	0.145	119.9	318.9	119.9	2,128	-385	21	720	356
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.26	6.39	0.3980	0.26	0.145	118.5	139.1	118.5	2,128	539	21	691	1,251
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.26	6.39	0.3980	0.27	0.145	119.9	318.9	119.9	2,128	-374	21	699	347
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.51	6.44	0.3980	0.26	0.145	118.5	139.1	118.5	2,128	521	21	668	1,209
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.51	6.44	0.3980	0.27	0.145	119.9	318.9	119.9	2,128	-361	21	676	336
Totals:											1,758	168	13,876	15,801	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	6.59	1.3300	1.61	0.337	118.5	139.1	118.5	925	198	-51	1,192	1,340
CATV	CATV 1.0	Unknown, COMMUNICATION	18.85	6.59	1.3300	1.64	0.337	119.9	318.9	120.0	925	-138	-52	1,207	1,017
Telco	TELE 1.5	Unknown, COMMUNICATION	17.72	6.66	1.5000	1.88	0.900	118.5	139.1	118.5	2,000	403	-90	1,225	1,538
Telco	TELE 1.5	Unknown, COMMUNICATION	17.72	6.66	1.5000	1.90	0.900	119.9	318.9	120.0	2,000	-280	-91	1,240	869
Totals:											185	-285	4,864	4,764	

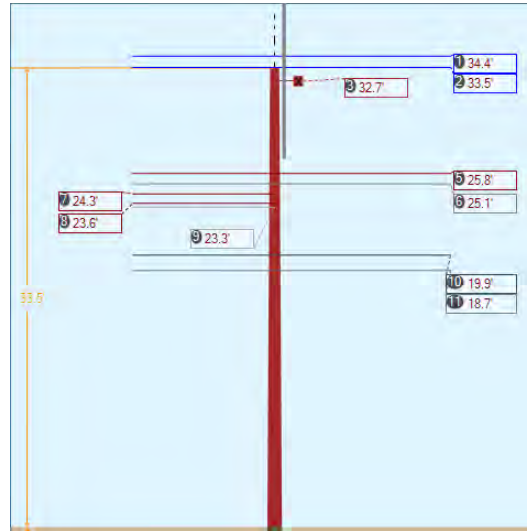
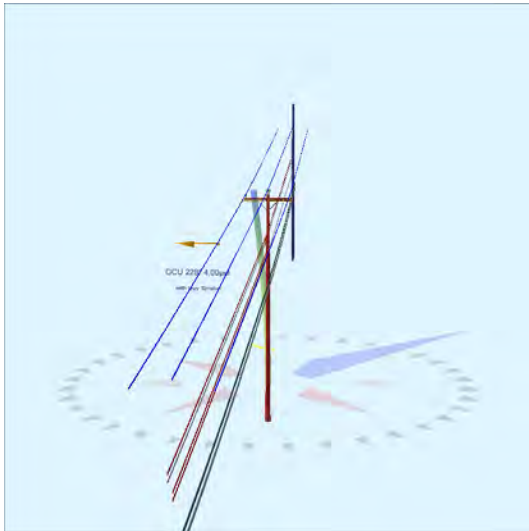
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	31.14	5.12	139.0	139.0	50.00	4.50	3.50	96.00	0	38	39	
Totals:											0	38	39

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	31.70	0.00	0.0	0.0	13.00	9.00	10.50	0	148	148
Pin	Pin Insulator - 5 kV	KU, UTILITY	31.33	45.00	222.5	0.0	6.00	3.50	7.50	43	40	83
Pin	Pin Insulator - 5 kV	KU, UTILITY	31.33	-45.00	55.5	0.0	6.00	3.50	7.50	-43	40	-3
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.28	0.00	229.0	139.0	2.00	3.00	3.19	2	11	13

Spool	Spool Insulator - 25 kV	KU, UTILITY	22.93	0.00	229.0	139.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.26	0.00	229.0	139.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.51	0.00	229.0	139.0	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	18.85	0.00	49.0	139.0	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.72	0.00	49.0	139.0	5.00	3.00	0.00	-5	0	-5
Totals:										-2	270	268

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.82	33.52	9.58	12.79	6.69	10.40	1.60e+6	60.00	57.00	31.70	22,196	222.71	7.46

Pole Num:	158W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.50	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.32	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066151 Deg	Longitude:	-84.450954 Deg	Elevation:	895.428976591959		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	54.2	0.0
Groundline	54.2	0.0
Vertical	1.8	21.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	35,602	215.9
Groundline	35,602	215.9
GL Allowable	66,345	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	117.7	318.0		26.8	227.9	27.7	130.0
? EHS 3/8 (Span/Head)			23.4	38.7	227.9	44.0	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 215.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,954	141.3	51,749	145.4	78.0	5,290	753	9	5,299	77.9
Comms	317	22.9	5,841	16.4	8.8	597	513	6	603	8.9
GuyBraces	-1,101	-79.6	-25,772	-72.4	-38.9	-2,635	27	0	-2,634	-38.7
Pole	165	11.9	2,819	7.9	4.3	288	1,583	18	306	4.5
Crossarms	1	0.1	51	0.1	0.1	5	95	1	6	0.1
Risers	37	2.7	637	1.8	1.0	65	49	1	66	1.0
Insulators	9	0.6	277	0.8	0.4	28	82	1	29	0.4
Pole Load	1,383	100.0	35,602	100.0	53.7	3,640	3,102	35	3,675	54.0
Pole Reserve Capacity			30,743		46.3	3,160			3,125	46.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 215.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	899	65.0	26,902	75.6	40.6	2,750	892	10	2,760	40.6
Unknown, COMMUNICATION	317	22.9	5,831	16.4	8.8	596	532	6	602	8.9
Pole	165	11.9	2,819	7.9	4.3	288	1,583	18	306	4.5
<Undefined>	1	0.1	51	0.1	0.1	5	95	1	6	0.1
Totals:	1,383	100.0	35,602	100.0	53.7	3,640	3,102	35	3,675	54.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.37	0.00	0.7200	0.79	0.462	119.9	138.9	119.9	3,210	32,362	0	1,430	33,792
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.37	0.00	0.7200	0.77	0.462	117.7	318.0	117.7	3,210	-30,161	0	1,408	-28,753
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.55	45.29	0.7200	0.79	0.462	119.9	138.9	119.9	3,210	31,583	327	1,396	33,306
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.55	45.29	0.7200	0.77	0.462	117.7	318.0	117.7	3,210	-29,435	320	1,375	-27,741
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.55	45.29	0.7200	0.79	0.462	119.9	138.9	119.9	3,210	31,583	-310	1,396	32,669

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.55	45.29	0.7200	0.77	0.462	117.7	318.0	117.7	3,210	-29,435	-304	1,375	-28,365
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.29	0.3980	0.27	0.145	119.9	138.9	119.9	2,128	16,091	20	790	16,900
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.29	0.3980	0.26	0.145	117.7	318.0	117.7	2,128	-14,996	20	778	-14,199
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.34	0.3980	0.27	0.145	119.9	138.9	119.9	2,128	15,628	20	767	16,415
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.34	0.3980	0.26	0.145	117.7	318.0	117.7	2,128	-14,565	20	755	-13,790
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.33	6.38	0.3980	0.27	0.145	119.9	138.9	119.9	2,128	15,170	5	744	15,919
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.63	6.42	0.3980	0.27	0.145	119.9	138.9	119.9	2,128	14,733	5	723	15,460
Totals:											38,557	122	12,936	51,615	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.86	6.64	1.3300	1.63	0.337	119.9	138.9	120.0	925	5,384	-51	1,239	6,572
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.86	6.64	1.3300	1.60	0.337	117.7	318.0	117.7	925	-5,018	-50	1,220	-3,848
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.73	6.71	1.5000	1.90	0.900	119.9	138.9	120.0	2,000	10,979	-90	1,277	12,165
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.73	6.71	1.5000	1.86	0.900	117.7	318.0	117.7	2,000	-10,232	-88	1,257	-9,063
		COMMUNICATION													
Totals:											1,113	-279	4,992	5,826	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.73	5.14	138.5	138.5	50.00	4.50	3.50	96.00	9	42	50	
Totals:											9	42	50

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 320.0°	Riser	25.92	5.45	320.0	320.0	25.92	311.00	2.50	2.50	311.00	-3	638	635
	KU, UTILITY												
Totals:											-3	638	635

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	33.50	0.00	0.0	0.0	13.00	9.00	10.50	0	152	152
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.92	45.00	222.0	0.0	6.00	3.50	7.50	43	41	84
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.92	-45.00	55.0	0.0	6.00	3.50	7.50	-41	41	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	228.5	138.5	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	228.5	138.5	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.33	0.00	138.9	138.9	2.00	3.00	3.19	0	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.63	0.00	138.9	138.9	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	19.86	0.00	48.5	138.5	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.73	0.00	48.5	138.5	5.00	3.00	0.00	-5	0	-5
Totals:										-3	280	277

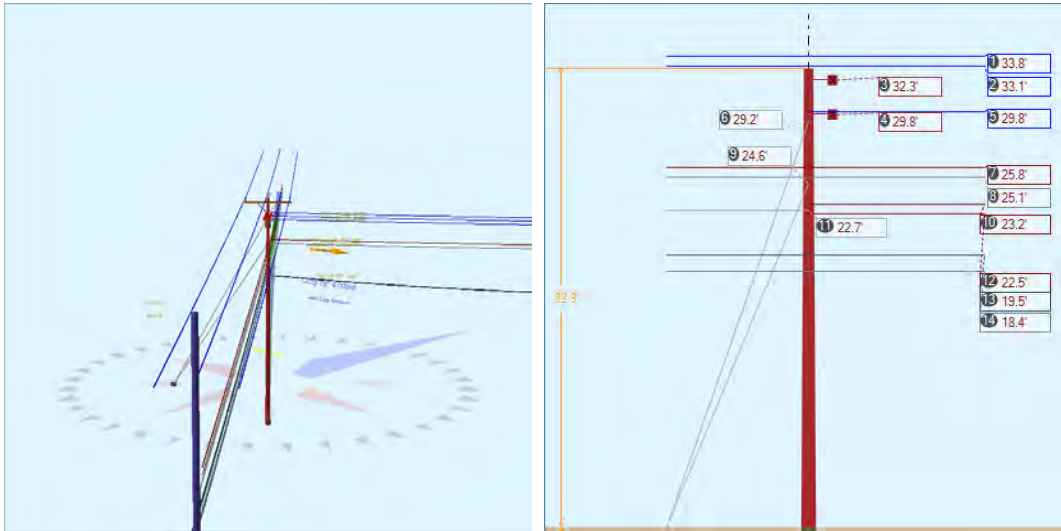
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.35	23.35	117.68	0.375	75.00	318.0	0.0	0.273	115.85	3.91

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	6,096	5,542	5,361	0	5,361	-1,130	-25,705
Totals:										0	5,361	-1,130	-25,705

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	117.68	318.0	20,000	1.00	20,000	5,542	5,361	27.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.62	33.58	9.75	7.91	6.69	10.61	1.60e+6	60.00	57.00	33.50	177,213	1723.29	55.56

Pole Num:	159W - 73972-32794	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.05	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066401 Deg	Longitude:	-84.451226 Deg	Elevation:	894.12282493395		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	52.2	24.7
Groundline	18.3	0.0
Vertical	38.4	26.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,920	61.1
Groundline	11,575	350.5
GL Allowable	65,142	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.5	227.0		84.6	77.9	85.1	50.0
? EHS 7/16 (Down)			29.2	80.4	77.9	88.9	50.0
? EHS 7/16 (Down)			24.6	66.6	77.9	73.7	50.0
? Single Helix Anchor	117.7	138.0		21.3	77.9	27.1	320.0
? EHS 3/8 (Span/Head)			22.7	30.7	77.9	43.0	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 350.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	11,818	1082.7	125,871	1087.4	193.2	32,092	1,033	12	32,103	472.1
Comms	644	59.0	5,113	44.2	7.9	1,304	622	7	1,311	19.3
GuyBraces	-11,395	-1044.0	-119,643	-1033.6	-183.7	-30,504	35,403	406	-30,098	-442.6
Pole	7	0.7	51	0.4	0.1	13	1,545	18	31	0.5
Crossarms	16	1.5	171	1.5	0.3	44	285	3	47	0.7
Insulators	1	0.1	12	0.1	0.0	3	108	1	4	0.1
Pole Load	1,092	100.0	11,575	100.0	17.8	2,951	38,996	447	3,398	50.0
Pole Reserve Capacity			53,567		82.2	3,849			3,402	50.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 350.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	424	38.8	6,241	53.9	9.6	1,591	36,515	418	2,010	29.6
Unknown, COMMUNICATION	644	59.0	5,111	44.2	7.9	1,303	651	7	1,311	19.3
Pole	7	0.7	51	0.4	0.1	13	1,545	18	31	0.5
<Undefined>	16	1.5	171	1.5	0.3	44	285	3	47	0.7
Totals:	1,092	100.0	11,575	100.0	17.8	2,951	38,996	447	3,398	50.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.82	0.00	0.7200	0.75	0.462	117.7	138.0	117.7	3,210	-119,190	0	660 -118,530
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.82	0.00	0.7200	0.34	0.462	69.7	317.2	69.7	3,210	118,120	0	396 118,516
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.10	45.29	0.7200	0.75	0.462	117.7	138.0	117.7	3,210	-116,664	-204	646 -116,223
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.10	45.29	0.7200	0.34	0.462	69.7	317.2	69.7	3,210	115,616	-121	388 115,883
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.10	45.29	0.7200	0.75	0.462	117.7	138.0	117.7	3,210	-116,664	143	646 -115,875

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.10	45.29	0.7200	0.34	0.462	69.7	317.2	69.7	3,210	115,616	85	388	116,089
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.82	18.03	0.3980	1.06	0.145	276.6	48.5	276.6	2,128	43,662	14	-899	42,776
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.82	48.48	0.3980	1.06	0.145	276.6	48.5	276.6	2,128	43,662	-16	-899	42,746
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.82	48.48	0.3980	1.06	0.145	276.6	48.5	276.6	2,128	43,662	26	-899	42,789
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.82	6.26	0.3980	1.06	0.145	276.6	48.5	276.6	2,128	37,811	2	-779	37,035
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.82	6.26	0.3980	0.23	0.145	117.7	138.0	117.7	2,128	-60,267	1	370	-59,896
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.82	6.26	0.3980	0.08	0.145	69.7	317.2	69.7	2,128	59,726	1	222	59,949
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.12	6.30	0.3980	1.06	0.145	276.6	48.5	276.6	2,128	36,792	2	-758	36,037
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.12	6.30	0.3980	0.23	0.145	117.7	138.0	117.7	2,128	-58,643	1	360	-58,282
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.12	6.30	0.3980	0.08	0.145	69.7	317.2	69.7	2,128	58,117	1	216	58,334
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.18	6.41	0.3980	0.08	0.145	69.7	317.2	69.7	2,128	53,610	10	200	53,820
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.51	6.45	0.3980	0.08	0.145	69.7	317.2	69.7	2,128	52,058	10	194	52,262
Totals:											307,023	-45	451	307,429	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.53	6.63	1.3300	1.59	0.337	117.7	138.0	117.7	925	-19,816	-28	571	-19,273
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.53	6.63	1.3300	0.88	0.337	69.7	317.2	69.7	925	19,638	-16	343	19,965
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.53	6.63	1.3300	4.92	0.337	276.6	48.5	276.8	925	12,432	64	-1,201	11,295
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.38	6.69	1.5000	1.85	0.900	117.7	138.0	117.7	2,000	-40,312	-49	587	-39,774
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.38	6.69	1.5000	1.01	0.900	69.7	317.2	69.7	2,000	39,950	-29	353	40,273
		COMMUNICATION													
Totals:											11,893	-58	653	12,487	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	32.29	5.13	137.6	137.6	50.00	4.50	3.50	96.00	-34	-441	-475

Normal	Crossarm	29.82	5.28	48.5	48.5	50.00	4.50	3.50	96.00	0	894	894
Totals:										-34	452	418

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.95	0.00	0.0	0.0	13.00	9.00	10.50	0	7	7
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	45.00	221.1	0.0	6.00	3.50	7.50	-27	2	-25
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.48	-45.00	54.1	0.0	6.00	3.50	7.50	19	2	21
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.82	0.00	48.5	0.0	3.00	3.80	12.75	5	3	8
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.82	45.00	131.8	0.0	3.00	3.80	12.75	-14	3	-10
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	29.82	-45.00	325.2	0.0	3.00	3.80	12.75	23	3	26
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.82	0.00	77.9	77.9	2.00	3.00	3.19	0	1	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.12	0.00	77.9	77.9	2.00	3.00	3.19	0	1	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.18	0.00	317.2	317.2	2.00	3.00	3.19	2	0	2
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.51	0.00	317.2	317.2	2.00	3.00	3.19	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	19.53	0.00	227.6	137.6	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	19.53	0.00	48.5	138.5	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	18.38	0.00	227.6	137.6	5.00	3.00	0.00	-3	0	-3
Totals:										6	22	28

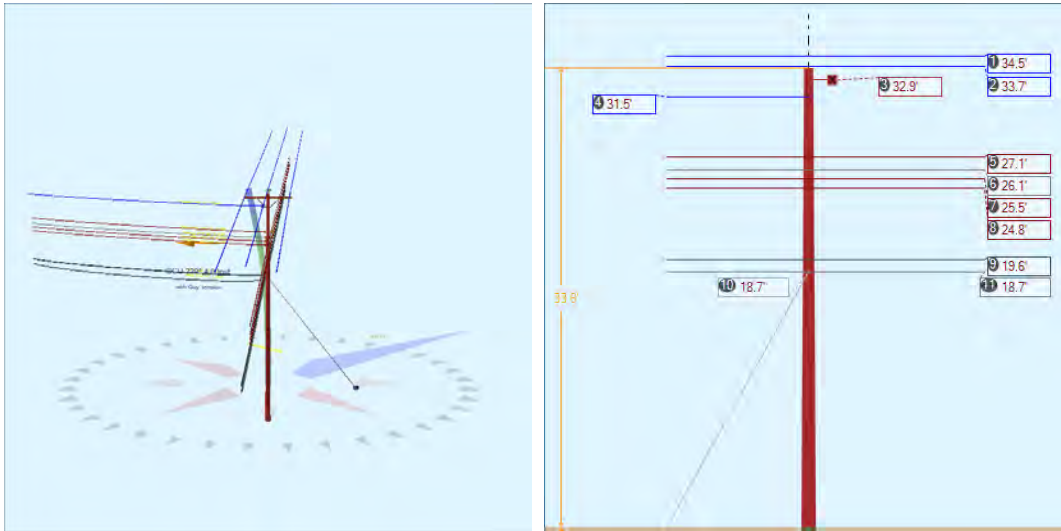
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 7/16	Down	KU, UTILITY	29.15	0.00	16.52	0.438	75.00	227.0	60.3	0.399	31.86	2.22
EHS 7/16	Down	KU, UTILITY	24.64	0.00	16.52	0.438	75.00	227.0	56.0	0.399	27.99	1.62
EHS 3/8	Span/Head	KU, UTILITY	22.74	22.74	117.68	0.375	75.00	138.0	0.0	0.273	115.85	3.10

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	16,650	15,137	15,044	13,061	7,465	-4,116	-117,720
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	13,805	12,550	12,471	10,336	6,979	-3,848	-93,191
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,960	5,418	4,251	0	4,251	-3,588	-81,306
Totals:										23,397	18,695	-11,552	-292,217

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.52	227.0	32,500	1.00	32,500	27,667	27,496	85.1
Single Helix Anchor		18.00	117.68	138.0	20,000	1.00	20,000	5,418	4,251	27.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.84	34.47	9.46	30.25	6.69	10.55	1.60e+6	60.00	57.00	32.95	101,635	1015.52	2.60

Pole Num:	160W - 73931-32836	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.41	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.35	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066550 Deg	Longitude:	-84.451390 Deg	Elevation:	894.662811873753		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.3	19.0
Groundline	23.5	0.0
Vertical	3.5	19.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	11,992	238.9
Groundline	6,469	314.4
GL Allowable	66,554	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	15.3	51.7		20.0	229.3	20.1	227.2
? EHS 1/4 (Down)			18.7	67.0	229.3	73.7	227.2
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 314.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	335	159.7	8,510	131.6	12.8	940	715	8	948	13.9
Comms	176	83.7	3,103	48.0	4.7	343	493	6	348	5.1
GuyBraces	-318	-151.4	-5,494	-84.9	-8.3	-607	4,696	53	-554	-8.1
Pole	15	6.9	230	3.6	0.4	25	1,590	18	43	0.6
Crossarms	1	0.6	75	1.2	0.1	8	95	1	9	0.1
Insulators	1	0.5	45	0.7	0.1	5	103	1	6	0.1
Pole Load	210	100.0	6,469	100.0	9.7	715	7,691	87	802	11.8
Pole Reserve Capacity			60,085		90.3	6,085			5,998	88.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 314.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	337	160.2	8,554	132.2	12.9	945	799	9	954	14.0
Unknown, COMMUNICATION	-142	-67.7	-2,391	-37.0	-3.6	-264	5,208	59	-205	-3.0
Pole	15	6.9	230	3.6	0.4	25	1,590	18	43	0.6
<Undefined>	1	0.6	75	1.2	0.1	8	95	1	9	0.1
Totals:	210	100.0	6,469	100.0	9.7	715	7,691	87	802	11.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.47	0.00	0.7200	0.35	0.462	69.7	137.2	69.7	3,210	-143,782	0	42	-143,740
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.47	0.00	0.7200	0.73	0.462	113.8	317.4	113.8	3,210	143,757	0	74	143,830
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.72	45.29	0.7200	0.35	0.462	69.7	137.2	69.7	3,210	-140,660	12	41	-140,606
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.72	45.29	0.7200	0.73	0.462	113.8	317.4	113.8	3,210	140,635	20	72	140,726
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.72	45.29	0.7200	0.35	0.462	69.7	137.2	69.7	3,210	-140,660	31	41	-140,587
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.72	45.29	0.7200	0.73	0.462	113.8	317.4	113.8	3,210	140,635	51	72	140,758

Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.48	16.22	0.3980	0.03	0.145	44.8	244.4	44.8	150	2,102	1	-90	2,013
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.09	6.22	0.3980	0.03	0.145	44.8	244.4	44.8	150	1,810	1	-78	1,733
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.09	6.22	0.3980	0.09	0.145	69.7	137.2	69.7	2,128	-74,850	-2	24	-74,828
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.09	6.22	0.3980	0.24	0.145	113.8	317.4	113.8	2,128	74,837	-3	43	74,877
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.13	6.28	0.3980	0.09	0.145	69.7	137.2	69.7	2,128	-72,198	-2	24	-72,176
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.13	6.28	0.3980	0.24	0.145	113.8	317.4	113.8	2,128	72,185	-3	41	72,223
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.13	6.28	0.3980	0.03	0.145	44.8	244.4	44.8	150	1,745	1	-75	1,671
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.49	6.32	0.3980	0.09	0.145	69.7	137.2	69.7	2,128	-70,429	-2	23	-70,408
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.49	6.32	0.3980	0.24	0.145	113.8	317.4	113.8	2,128	70,417	-3	40	70,454
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.49	6.32	0.3980	0.03	0.145	44.8	244.4	44.8	150	1,702	1	-73	1,630
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.81	6.36	0.3980	0.09	0.145	69.7	137.2	69.7	2,128	-68,551	-2	22	-68,530
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.81	6.36	0.3980	0.24	0.145	113.8	317.4	113.8	2,128	68,538	-3	39	68,574
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.81	6.36	0.3980	0.03	0.145	44.8	244.4	44.8	150	1,657	1	-71	1,587
											Totals:	8,890	101	212	9,202

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.56	6.66	1.3300	0.89	0.337	69.7	137.2	69.7	925	-23,497	2	36	-23,460
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.56	6.66	1.3300	1.54	0.337	113.8	317.4	113.8	925	23,493	3	63	23,558
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.56	6.66	1.3300	0.55	0.337	44.8	244.4	44.9	150	1,307	1	-115	1,193
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.68	6.71	1.5000	1.01	0.900	69.7	137.2	69.7	2,000	-48,511	3	38	-48,471
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.68	6.71	1.5000	1.79	0.900	113.8	317.4	113.8	2,000	48,502	4	66	48,572
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.68	6.71	1.5000	0.62	0.900	44.8	244.4	44.9	250	2,080	2	-120	1,962
		COMMUNICATION													
											Totals:	3,374	14	-32	3,355

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		32.91	5.13	317.3	317.3	50.00	4.50	3.50	96.00	41	41	81
Totals:											41	41	81

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.59	0.00	0.0	0.0	13.00	9.00	10.50	0	13	13	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.09	45.00	40.8	0.0	6.00	3.50	7.50	3	4	6	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.09	-45.00	233.8	0.0	6.00	3.50	7.50	7	4	11	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.48	0.00	244.4	244.4	3.00	3.80	12.75	3	6	9	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.09	0.00	233.0	143.0	2.00	3.00	3.19	0	1	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.09	0.00	53.0	143.0	2.00	3.00	3.19	0	1	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.13	0.00	53.0	143.0	2.00	3.00	3.19	0	1	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.13	0.00	233.0	143.0	2.00	3.00	3.19	0	1	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.49	0.00	53.0	143.0	2.00	3.00	3.19	0	1	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.49	0.00	233.0	143.0	2.00	3.00	3.19	0	1	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.81	0.00	53.0	143.0	2.00	3.00	3.19	0	1	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.81	0.00	233.0	143.0	2.00	3.00	3.19	0	1	1	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.56	0.00	227.3	317.3	5.00	3.00	0.00	0	0	0	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.68	0.00	227.3	317.3	5.00	3.00	0.00	0	0	0	
Totals:											13	35	48

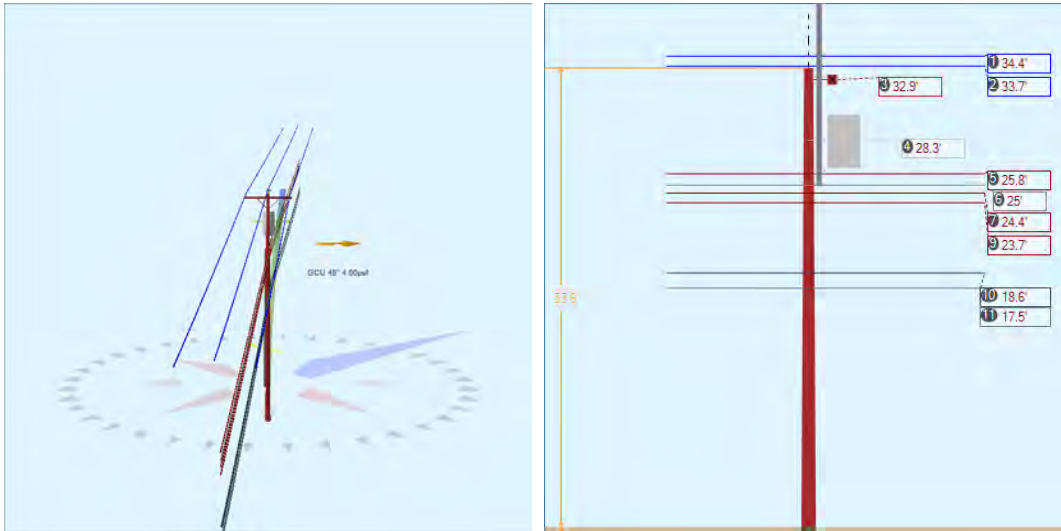
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Unknown, COMMUNICATION	18.68	0.00	15.32	0.25	75.00	51.7	50.5	0.121	22.44	1.27

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,410	4,009	4,008	3,092	2,551	-323	-5,941
Totals:										3,092	2,551	-323	-5,941

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	15.32	51.7	20,000	1.00	20,000	4,009	4,008	20.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.78	33.27	9.85	11.71	6.69	10.62	1.60e+6	60.00	57.00	33.59	219,764	2197.51	28.57

Pole Num:	161W - 73859-32912	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.45	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.33	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066770 Deg	Longitude:	-84.451675 Deg	Elevation:	887.968914520157		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.2	0.0
Groundline	56.2	0.0
Vertical	24.0	23.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	36,905	43.8
Groundline	36,905	43.8
GL Allowable	66,460	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	867	60.8	25,783	69.9	38.8	2,634	809	9	2,644	38.9
Comms	319	22.4	6,018	16.3	9.1	615	500	6	621	9.1
PowerEquipments	55	3.8	1,790	4.9	2.7	183	1,216	14	197	2.9
Pole	169	11.9	2,888	7.8	4.3	295	1,587	18	313	4.6
Crossarms	1	0.1	48	0.1	0.1	5	95	1	6	0.1
Risers	5	0.4	72	0.2	0.1	7	46	1	8	0.1
Insulators	9	0.6	307	0.8	0.5	31	82	1	32	0.5
Pole Load	1,425	100.0	36,905	100.0	55.5	3,771	4,335	49	3,820	56.2
Pole Reserve Capacity			29,555		44.5	3,029			2,980	43.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	936	65.7	27,941	75.7	42.0	2,855	2,134	24	2,879	42.3
Unknown, COMMUNICATION	319	22.4	6,028	16.3	9.1	616	519	6	622	9.1
Pole	169	11.9	2,888	7.8	4.3	295	1,587	18	313	4.6
<Undefined>	1	0.1	48	0.1	0.1	5	95	1	6	0.1
Totals:	1,425	100.0	36,905	100.0	55.5	3,771	4,335	49	3,820	56.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.43	0.00	0.7200	0.73	0.462	113.8	137.4	113.8	3,210	-6,998	0	1,391	-5,607
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.43	0.00	0.7200	0.77	0.462	117.9	318.6	117.9	3,210	9,308	0	1,437	10,745
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.70	45.29	0.7200	0.73	0.462	113.8	137.4	113.8	3,210	-6,850	311	1,362	-5,177
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.70	45.29	0.7200	0.77	0.462	117.9	318.6	117.9	3,210	9,112	323	1,407	10,841
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.70	45.29	0.7200	0.73	0.462	113.8	137.4	113.8	3,210	-6,850	-306	1,362	-5,795

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.70	45.29	0.7200	0.77	0.462	117.9	318.6	117.9	3,210	9,112	-317	1,407	10,201
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.82	6.29	0.3980	0.24	0.145	113.8	137.4	113.8	2,128	-3,476	20	767	-2,689
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.82	6.29	0.3980	0.26	0.145	117.9	318.6	117.9	2,128	4,623	20	793	5,437
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.01	6.34	0.3980	0.24	0.145	113.8	137.4	113.8	2,128	-3,367	20	743	-2,604
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.01	6.34	0.3980	0.26	0.145	117.9	318.6	117.9	2,128	4,478	20	768	5,267
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.41	6.38	0.3980	0.24	0.145	113.8	137.4	113.8	2,128	-3,286	20	725	-2,541
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.41	6.38	0.3980	0.26	0.145	117.9	318.6	117.9	2,128	4,371	21	750	5,141
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.71	6.42	0.3980	0.24	0.145	113.8	137.4	113.8	2,128	-3,192	20	705	-2,467
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.71	6.42	0.3980	0.26	0.145	117.9	318.6	117.9	2,128	4,246	21	728	4,994
											Totals:	11,230	172	14,345	25,747

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.59	6.72	1.3300	1.54	0.337	113.8	137.4	113.8	925	-1,088	50	1,126	88
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.59	6.72	1.3300	1.60	0.337	117.9	318.6	117.9	925	1,447	52	1,163	2,662
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.47	6.78	1.5000	1.79	0.900	113.8	137.4	113.8	2,000	-2,210	88	1,156	-966
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.47	6.78	1.5000	1.87	0.900	117.9	318.6	117.9	2,000	2,940	91	1,195	4,226
		COMMUNICATION													
											Totals:	1,089	281	4,639	6,009

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.27	21.65	320.0	320.0	640.00	47.00	--	24.00	--	238	1,550	1,788
											Totals:	238	1,550	1,788

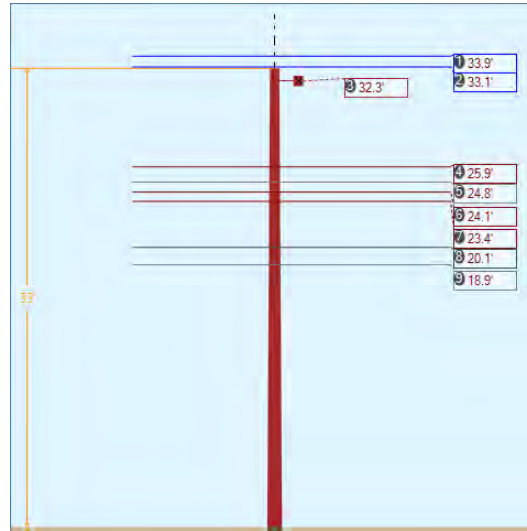
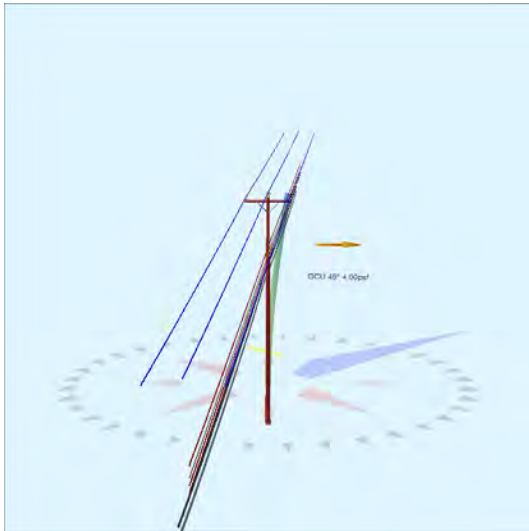
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm		32.89	5.13	318.0	318.0	50.00	4.50	3.50	96.00	3	45	48	
											Totals:	3	45	48

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 230.0°	Riser	KU, UTILITY	24.07	5.45	230.0	230.0	24.07	288.78	4.00	4.00	288.78	-11	82	72
Totals:											-11	82	72	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.55	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.07	45.00	41.5	0.0	6.00	3.50	7.50	43	42	85
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.07	-45.00	234.5	0.0	6.00	3.50	7.50	-42	42	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.82	0.00	48.0	318.0	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.01	0.00	48.0	318.0	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.41	0.00	48.0	318.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.71	0.00	48.0	318.0	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.59	0.00	48.0	318.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.47	0.00	48.0	318.0	5.00	3.00	0.00	5	0	5
Totals:										19	287	306

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	23.57	33.90	9.68	16.21	6.69	10.62	1.60e+6	60.00	57.00	33.55	18,052	180.62	4.17

Pole Num:	162W - 73777-3300	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.01	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.13	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067014 Deg	Longitude:	-84.451930 Deg	Elevation:	896.616931665873		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.0	0.0
Groundline	39.0	0.0
Vertical	13.7	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,106	48.3
Groundline	25,106	48.3
GL Allowable	65,229	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 48.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	577	56.4	16,976	67.6	26.0	1,765	797	9	1,774	26.1
Comms	270	26.4	4,996	19.9	7.7	519	492	6	525	7.7
Pole	166	16.2	2,813	11.2	4.3	292	1,548	18	310	4.6
Crossarms	1	0.1	40	0.2	0.1	4	95	1	5	0.1
Insulators	9	0.9	281	1.1	0.4	29	82	1	30	0.4
Pole Load	1,023	100.0	25,106	100.0	38.5	2,610	3,013	35	2,644	38.9
Pole Reserve Capacity			40,123		61.5	4,190			4,156	61.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 48.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	586	57.3	17,268	68.8	26.5	1,795	859	10	1,805	26.5
Unknown, COMMUNICATION	270	26.4	4,985	19.9	7.6	518	511	6	524	7.7
Pole	166	16.2	2,813	11.2	4.3	292	1,548	18	310	4.6
<Undefined>	1	0.1	40	0.2	0.1	4	95	1	5	0.1
Totals:	1,023	100.0	25,106	100.0	38.5	2,610	3,013	35	2,644	38.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.86	0.00	0.7200	0.77	0.462	117.9	138.6	117.9	3,210	-602	0	1,422	820
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.86	0.00	0.7200	0.69	0.462	110.1	318.9	110.1	3,210	1,172	0	1,328	2,500
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.08	45.29	0.7200	0.77	0.462	117.9	138.6	117.9	3,210	-588	321	1,389	1,122
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.08	45.29	0.7200	0.69	0.462	110.1	318.9	110.1	3,210	1,145	300	1,298	2,742
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.08	45.29	0.7200	0.77	0.462	117.9	138.6	117.9	3,210	-588	-321	1,389	481
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.08	45.29	0.7200	0.69	0.462	110.1	318.9	110.1	3,210	1,145	-299	1,298	2,143
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.91	6.26	0.3980	0.26	0.145	117.9	138.6	117.9	2,128	-305	20	800	515

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.91	6.26	0.3980	0.23	0.145	110.1	318.9	110.1	2,128	594	19	747	1,360
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.81	6.32	0.3980	0.26	0.145	117.9	138.6	117.9	2,128	-292	20	766	495
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.81	6.32	0.3980	0.23	0.145	110.1	318.9	110.1	2,128	569	19	716	1,303
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.10	6.36	0.3980	0.26	0.145	117.9	138.6	117.9	2,128	-284	21	744	481
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.10	6.36	0.3980	0.23	0.145	110.1	318.9	110.1	2,128	552	19	695	1,267
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.41	6.40	0.3980	0.26	0.145	117.9	138.6	117.9	2,128	-276	21	723	468
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.41	6.40	0.3980	0.23	0.145	110.1	318.9	110.1	2,128	537	19	675	1,231
Totals:											2,777	160	13,992	16,928	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.11	6.60	1.3300	1.60	0.337	117.9	138.6	117.9	925	-103	-51	1,266	1,112
CATV	CATV 1.0	Unknown, COMMUNICATION	20.11	6.60	1.3300	1.48	0.337	110.1	318.9	110.2	925	200	-48	1,182	1,335
Telco	TELE 1.5	Unknown, COMMUNICATION	18.87	6.67	1.5000	1.87	0.900	117.9	138.6	117.9	2,000	-209	-90	1,298	999
Telco	TELE 1.5	Unknown, COMMUNICATION	18.87	6.67	1.5000	1.72	0.900	110.1	318.9	110.2	2,000	406	-84	1,212	1,535
Totals:											295	-272	4,959	4,981	

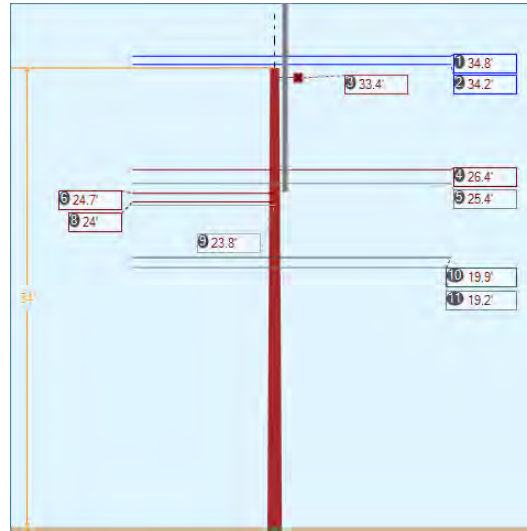
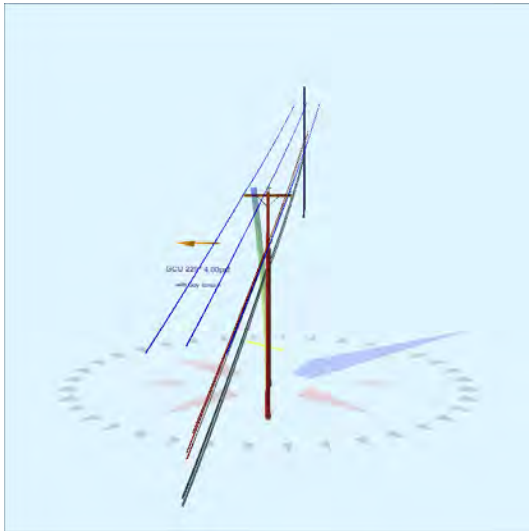
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	32.27	5.13	318.7	318.7	50.00	4.50	3.50	96.00	0	40	40	
Totals:											0	40	40

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.99	0.00	0.0	0.0	13.00	9.00	10.50	0	154	154
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.46	45.00	42.2	0.0	6.00	3.50	7.50	43	42	84
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.46	-45.00	235.2	0.0	6.00	3.50	7.50	-43	42	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.91	0.00	48.7	318.7	2.00	3.00	3.19	2	12	14

Spool	Spool Insulator - 25 kV	KU, UTILITY	24.81	0.00	48.7	318.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.10	0.00	48.7	318.7	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.41	0.00	48.7	318.7	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.11	0.00	228.7	318.7	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.87	0.00	228.7	318.7	5.00	3.00	0.00	-5	0	-5
Totals:										-2	282	280

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.49	33.58	9.70	13.08	6.69	10.55	1.60e+6	60.00	57.00	32.99	21,930	219.95	7.30

Pole Num:	163W - 73685-33103	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.03	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.49	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067240 Deg	Longitude:	-84.452183 Deg	Elevation:	890.900521652155		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	54.8	0.0
Groundline	54.8	0.0
Vertical	2.1	22.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	36,508	208.1
Groundline	36,508	208.1
GL Allowable	67,379	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	187.7	318.3		25.7	229.3	26.6	130.0
? EHS 3/8 (Span/Head)			23.8	37.0	229.3	42.2	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 208.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,584	184.6	67,108	183.8	99.6	6,768	917	10	6,778	99.7
Comms	336	24.0	6,915	18.9	10.3	697	643	7	705	10.4
GuyBraces	-1,730	-123.6	-41,243	-113.0	-61.2	-4,159	44	0	-4,159	-61.2
Pole	160	11.4	2,763	7.6	4.1	279	1,616	18	297	4.4
Crossarms	1	0.1	45	0.1	0.1	5	95	1	6	0.1
Risers	40	2.9	637	1.7	1.0	64	46	1	65	1.0
Insulators	8	0.6	282	0.8	0.4	29	82	1	29	0.4
Pole Load	1,400	100.0	36,508	100.0	54.2	3,682	3,442	39	3,720	54.7
Pole Reserve Capacity			30,871		45.8	3,118			3,080	45.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 208.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	902	64.5	26,775	73.3	39.7	2,700	1,069	12	2,712	39.9
Unknown, COMMUNICATION	336	24.0	6,925	19.0	10.3	698	662	7	706	10.4
Pole	160	11.4	2,763	7.6	4.1	279	1,616	18	297	4.4
<Undefined>	1	0.1	45	0.1	0.1	5	95	1	6	0.1
Totals:	1,400	100.0	36,508	100.0	54.2	3,682	3,442	39	3,720	54.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.84	0.00	0.7200	0.69	0.462	110.1	138.9	110.1	3,210	51,766	0	1,277	53,044
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.84	0.00	0.7200	1.53	0.462	187.7	318.5	187.7	3,210	-50,816	0	2,182	-48,634
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.23	45.29	0.7200	0.69	0.462	110.1	138.9	110.1	3,210	50,855	293	1,255	52,402
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.23	45.29	0.7200	1.53	0.462	187.7	318.5	187.7	3,210	-49,921	499	2,144	-47,278
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.23	45.29	0.7200	0.69	0.462	110.1	138.9	110.1	3,210	50,855	-270	1,255	51,840

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	34.23	45.29	0.7200	1.53	0.462	187.7	318.5	187.7	3,210	-49,921	-459	2,144	-48,236
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.45	6.28	0.3980	0.23	0.145	110.1	138.9	110.1	2,128	26,026	-18	713	26,721
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.45	6.28	0.3980	0.65	0.145	187.7	318.5	187.7	2,128	-25,548	-30	1,218	-24,360
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.34	0.3980	0.23	0.145	110.1	138.9	110.1	2,128	25,015	-18	685	25,682
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.42	6.34	0.3980	0.65	0.145	187.7	318.5	187.7	2,128	-24,556	-31	1,171	-23,415
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.69	6.39	0.3980	0.23	0.145	110.1	138.9	110.1	2,128	24,297	7	666	24,969
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.05	6.42	0.3980	0.23	0.145	110.1	138.9	110.1	2,128	23,668	7	648	24,324
											Totals:	51,721	-20	15,358	67,059

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.94	6.66	1.3300	1.48	0.337	110.1	138.9	110.2	925	8,530	45	1,095	9,670
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.94	6.66	1.3300	2.87	0.337	187.7	318.5	187.8	925	-8,373	77	1,872	-6,424
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.21	6.71	1.5000	1.72	0.900	110.1	138.9	110.2	2,000	17,763	79	1,153	18,996
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.21	6.71	1.5000	3.41	0.900	187.7	318.5	187.8	2,000	-17,437	135	1,970	-15,332
		COMMUNICATION													
											Totals:	483	337	6,090	6,910

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.41	5.12	138.2	138.2	50.00	4.50	3.50	96.00	14	31	45	
										Totals:	14	31	45

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	24.24	5.45	360.0	360.0	24.24	290.89	4.00	4.00	290.89	-10	646	636	
	KU, UTILITY													
											Totals:	-10	646	636

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	33.97	0.00	0.0	0.0	13.00	9.00	10.50	0	147	147
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.60	45.00	221.7	0.0	6.00	3.50	7.50	42	40	82
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.60	-45.00	54.7	0.0	6.00	3.50	7.50	-38	40	2
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.45	0.00	48.2	138.2	2.00	3.00	3.19	-2	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.42	0.00	48.2	138.2	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.69	0.00	138.9	138.9	2.00	3.00	3.19	1	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.05	0.00	138.9	138.9	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	19.94	0.00	228.2	138.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.21	0.00	228.2	138.2	5.00	3.00	0.00	5	0	5
Totals:										11	271	282

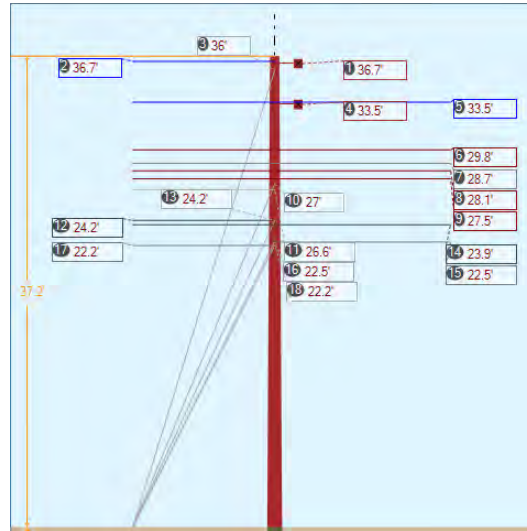
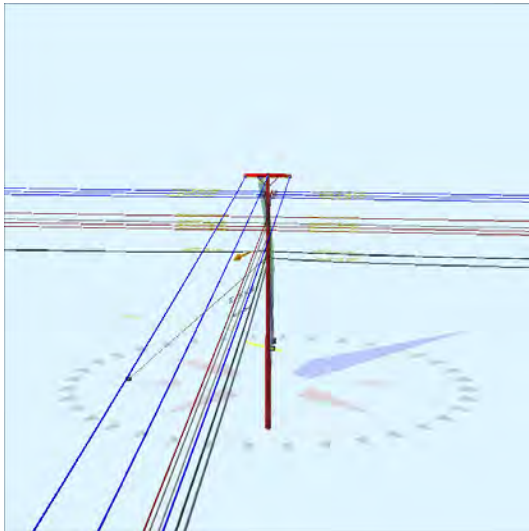
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Span/Head	KU, UTILITY	23.82	23.82	187.70	0.375	75.00	318.3	0.0	0.273	185.87	6.01

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	5,853	5,321	5,129	0	5,129	-1,774	-41,212	
Totals:										0	5,129	-1,774	-41,212

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	187.70	318.3	20,000	1.00	20,000	5,321	5,129	26.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.48	33.70	9.77	8.46	6.69	10.66	1.60e+6	60.00	57.00	33.97	165,093	1639.17	47.62

Pole Num:	164W - 73555-33260	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067620 Deg	Longitude:	-84.452616 Deg	Elevation:	900.551642034597		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	46.2	27.0
Groundline	10.2	0.0
Vertical	37.2	31.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,386	163.0
Groundline	9,008	74.6
GL Allowable	89,506	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 9/16 (Down)	32.4	317.0	36.0	79.3	155.6	79.4	140.0
? Single Helix Anchor ? EHS 7/16 (Down)	30.0	317.0	27.0	37.1	155.6	37.1	150.0
? Single Helix Anchor ? EHS 3/8 (Span/Head)	187.7	138.5	26.6	0.0	155.6	0.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)	26.2	317.0	24.2	10.3	155.6	10.3	152.8
? Single Helix Anchor ? EHS 1/4 (Down)	25.1	317.0	22.2	34.3	155.6	37.8	152.8
? Single Helix Anchor ? EHS 1/4 (Down)	25.1	234.0	22.5	9.3	155.6	9.3	154.9
? Single Helix Anchor ? EHS 1/4 (Down)	25.1	234.0	22.5	31.2	155.6	34.3	154.9
? Single Helix Anchor ? EHS 1/4 (Down)	25.1	234.0	22.5	6.9	155.6	16.5	50.0
				23.0	155.6	60.5	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 74.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	7,905	756.1	104,266	1157.5	116.5	20,681	1,098	10	20,691	304.3
Comms	4,058	388.1	35,279	391.6	39.4	6,998	762	7	7,005	103.0
GuyBraces	-10,968	-1049.0	-131,054	-1454.9	-146.4	-25,995	35,182	326	-25,669	-377.5
Pole	32	3.1	231	2.6	0.3	46	2,130	20	66	1.0
Crossarms	12	1.2	193	2.2	0.2	38	380	4	42	0.6
Insulators	6	0.6	93	1.0	0.1	19	139	1	20	0.3
Pole Load	1,046	100.0	9,008	100.0	10.1	1,787	39,691	368	2,155	31.7
Pole Reserve Capacity			80,498		89.9	5,013			4,645	68.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 74.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-764	-73.1	-6,563	-72.9	-7.3	-1,302	30,992	287	-1,014	-14.9
Unknown, COMMUNICATION	1,765	168.8	15,147	168.2	16.9	3,004	6,188	57	3,062	45.0
Pole	32	3.1	231	2.6	0.3	46	2,130	20	66	1.0
<Undefined>	12	1.2	193	2.2	0.2	38	380	4	42	0.6
Totals:	1,046	100.0	9,008	100.0	10.1	1,787	39,691	368	2,155	31.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.74	50.34	0.7200	1.46	0.462	187.7	138.5	187.7	3,210	67,472	42	-649	66,865
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.74	22.57	0.7200	1.46	0.462	187.7	138.5	187.7	3,210	67,472	19	-649	66,842
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.74	50.34	0.7200	1.46	0.462	187.7	138.5	187.7	3,210	67,472	-25	-649	66,798
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.51	18.38	0.3980	0.26	0.145	119.0	50.3	119.0	2,128	84,491	11	415	84,918
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.51	48.81	0.3980	0.26	0.145	119.0	50.3	119.0	2,128	84,491	9	415	84,915
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.51	48.40	0.3980	0.26	0.145	119.0	50.3	119.0	2,128	84,491	-1	415	84,905
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.51	18.38	0.3980	0.29	0.145	126.6	231.3	126.6	2,128	-85,145	-12	426	-84,731
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.51	48.81	0.3980	0.29	0.145	126.6	231.3	126.6	2,128	-85,145	1	426	-84,718
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.51	48.40	0.3980	0.29	0.145	126.6	231.3	126.6	2,128	-85,145	-10	426	-84,728
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.76	6.60	0.3980	0.26	0.145	119.0	50.3	119.0	2,128	75,037	9	368	75,415
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.76	6.60	0.3980	0.49	0.145	187.7	138.5	187.7	2,128	36,240	15	-387	35,868
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.76	6.60	0.3980	0.29	0.145	126.6	231.3	126.6	2,128	-75,618	10	378	-75,229
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.69	6.66	0.3980	0.26	0.145	119.0	50.3	119.0	2,128	72,321	10	355	72,685
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.69	6.66	0.3980	0.49	0.145	187.7	138.5	187.7	2,128	34,928	15	-373	34,570
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.69	6.66	0.3980	0.29	0.145	126.6	231.3	126.6	2,128	-72,880	10	365	-72,505
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.11	6.70	0.3980	0.26	0.145	119.0	50.3	119.0	2,128	70,854	9	348	71,212

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.11	6.70	0.3980	0.29	0.145	126.6	231.3	126.6	2,128	-71,402	10	357	-71,035
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.47	6.73	0.3980	0.26	0.145	119.0	50.3	119.0	2,128	69,256	9	340	69,605
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.47	6.73	0.3980	0.29	0.145	126.6	231.3	126.6	2,128	-69,791	10	349	-69,432
Totals:											269,401	143	2,678	272,221	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.19	6.93	1.3300	2.83	0.337	187.7	138.5	187.8	925	12,803	39	-641	12,201
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.86	6.95	1.3300	1.62	0.337	119.0	50.3	119.0	925	26,145	23	602	26,770
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.86	6.95	1.3300	1.74	0.337	126.6	231.3	126.6	925	-26,347	25	618	-25,705
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.48	7.03	1.5000	1.88	0.900	119.0	50.3	119.0	2,000	53,272	87	620	53,979
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.23	7.04	1.5000	3.38	0.900	187.7	138.5	187.8	2,000	25,435	69	-643	24,860
		COMMUNICATION													
Totals:											91,308	243	555	92,106	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	36.74	5.44	137.5	137.5	50.00	4.50	3.50	96.00	0	1,044	1,044	
Normal	Crossarm	33.51	5.63	49.3	49.3	50.00	4.50	3.50	96.00	0	-539	-539	
Totals:											0	505	505

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 17.13"	KU, UTILITY	36.74	-45.00	54.4	0.0	3.00	3.90	17.13	24	19	43
Deadend	Deadend 17.13"	KU, UTILITY	36.74	0.00	137.5	0.0	3.00	3.90	17.13	5	19	24
Deadend	Deadend 17.13"	KU, UTILITY	36.74	45.00	220.6	0.0	3.00	3.90	17.13	-14	19	4
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.51	0.00	49.3	1.0	3.00	3.80	12.75	16	25	41
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.51	45.00	132.1	1.0	3.00	3.80	12.75	34	25	59
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.51	-45.00	326.4	1.0	3.00	3.80	12.75	-2	25	22

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.51	0.00	229.3	179.0	3.00	3.80	12.75	-16	25	9
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.51	45.00	146.4	179.0	3.00	3.80	12.75	3	25	27
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.51	-45.00	312.1	179.0	3.00	3.80	12.75	-34	25	-9
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.76	0.00	138.7	48.7	2.00	3.00	3.19	1	2	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.69	0.00	138.7	48.7	2.00	3.00	3.19	1	2	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.11	0.00	139.3	49.3	2.00	3.00	3.19	1	2	3
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.47	0.00	139.3	49.3	2.00	3.00	3.19	1	2	3
Bolt	Three Bolt	Unknown, COMMUNICATION	24.19	0.00	137.5	137.5	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	23.86	0.00	139.3	139.3	5.00	3.00	0.00	2	0	2
Bolt	Single Bolt	Unknown, COMMUNICATION	22.48	0.00	50.3	140.3	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.23	0.00	137.5	137.5	5.00	3.00	0.00	3	0	3
Totals:										31	212	243

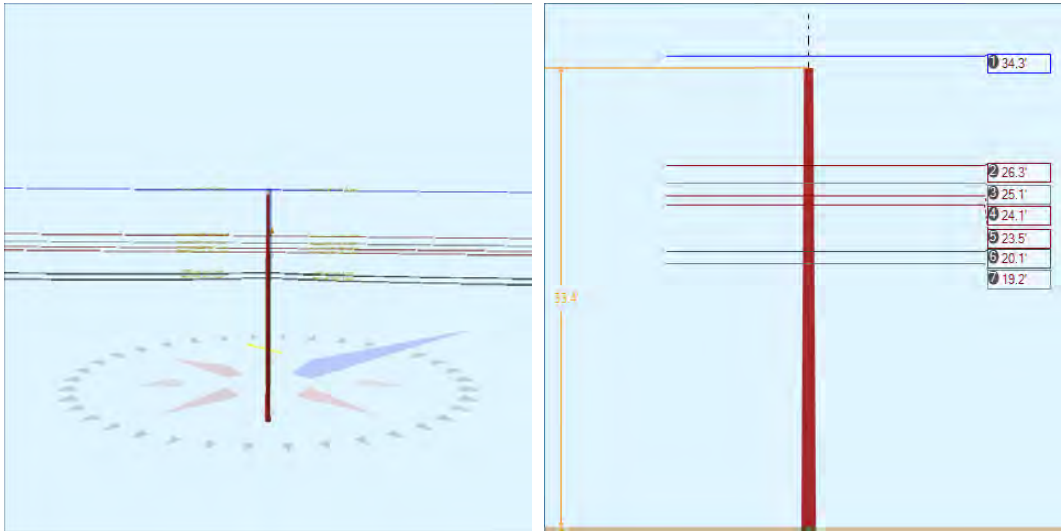
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 9/16	Down	KU, UTILITY	36.03	0.00	32.42	0.562	75.00	317.0	47.9	0.67	46.76	2.60
EHS 7/16	Down	KU, UTILITY	27.04	0.00	30.00	0.438	75.00	317.0	41.9	0.399	38.63	1.33
EHS 3/8	Span/Head	KU, UTILITY	26.64	26.64	187.70	0.375	75.00	138.5	0.0	0.273	185.84	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	24.19	0.00	26.18	0.25	75.00	317.0	42.6	0.121	33.88	0.99
EHS 1/4	Down	Unknown, COMMUNICATION	22.23	0.00	25.06	0.25	75.00	317.0	41.5	0.121	31.71	0.84
EHS 1/4	Down	Unknown, COMMUNICATION	22.48	0.00	25.06	0.25	75.00	234.0	41.8	0.121	31.89	0.62

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 9/16	Down	2.30e+7	35,000	0.90	31,500	700	21,832	19,847	19,826	14,702	13,301	-6,165	-220,449
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	8,168	7,425	7,421	4,956	5,523	-2,560	-68,814
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	-324
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,261	2,055	2,055	1,391	1,512	-701	-16,876
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,053	1,866	1,866	1,235	1,399	-648	-14,343
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,619	3,290	1,375	916	1,025	-960	-21,354
Totals:										23,201	22,762	-11,034	-342,160

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	32.42	317.0	25,000	1.00	25,000	19,847	19,826	79.4
Single Helix Anchor		18.00	30.00	317.0	20,000	1.00	20,000	7,425	7,421	37.1
Single Helix Anchor		18.00	187.70	138.5	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	26.18	317.0	20,000	1.00	20,000	2,055	2,055	10.3
Single Helix Anchor		18.00	25.06	317.0	20,000	1.00	20,000	1,866	1,866	9.3
Single Helix Anchor		18.00	25.06	234.0	20,000	1.00	20,000	3,290	1,375	16.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.74	34.81	10.41	33.20	7.32	11.72	1.60e+6	60.00	57.00	37.15	106,669	1066.96	2.69

Pole Num:	165W - 73666-33365	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.56	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067840 Deg	Longitude:	-84.452309 Deg	Elevation:	896.612351540427		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.1	0.0
Groundline	29.1	0.0
Vertical	7.7	18.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,991	318.1
Groundline	18,991	318.1
GL Allowable	66,226	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	387	45.6	10,542	55.5	15.9	1,078	393	4	1,082	15.9
Comms	287	33.8	5,372	28.3	8.1	549	516	6	555	8.2
Pole	169	19.8	2,877	15.2	4.3	294	1,579	18	312	4.6
Insulators	7	0.8	200	1.1	0.3	21	59	1	21	0.3
Pole Load	850	100.0	18,991	100.0	28.7	1,942	2,548	29	1,970	29.0
Pole Reserve Capacity			47,235		71.3	4,859			4,830	71.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	394	46.3	10,752	56.6	16.2	1,099	433	5	1,104	16.2
Unknown, COMMUNICATION	287	33.8	5,362	28.2	8.1	548	535	6	554	8.2
Pole	169	19.8	2,877	15.2	4.3	294	1,579	18	312	4.6
Totals:	850	100.0	18,991	100.0	28.7	1,942	2,548	29	1,970	29.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.32	0.00	0.3980	0.27	0.145	120.0	47.9	120.0	2,128	214	0	1,079	1,294
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.32	0.00	0.3980	0.27	0.145	119.0	228.3	119.0	2,128	296	0	1,070	1,366
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.34	6.26	0.3980	0.27	0.145	120.0	47.9	120.0	2,128	164	21	828	1,013
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.34	6.26	0.3980	0.27	0.145	119.0	228.3	119.0	2,128	227	20	821	1,068
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.06	6.33	0.3980	0.27	0.145	120.0	47.9	120.0	2,128	156	21	788	965
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.06	6.33	0.3980	0.27	0.145	119.0	228.3	119.0	2,128	216	21	781	1,018
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.14	6.39	0.3980	0.27	0.145	120.0	47.9	120.0	2,128	151	21	759	931
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.14	6.39	0.3980	0.27	0.145	119.0	228.3	119.0	2,128	208	21	752	981
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.47	6.43	0.3980	0.27	0.145	120.0	47.9	120.0	2,128	146	21	738	906
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.47	6.43	0.3980	0.27	0.145	119.0	228.3	119.0	2,128	202	21	732	955
										Totals:	1,981	167	8,348	10,496

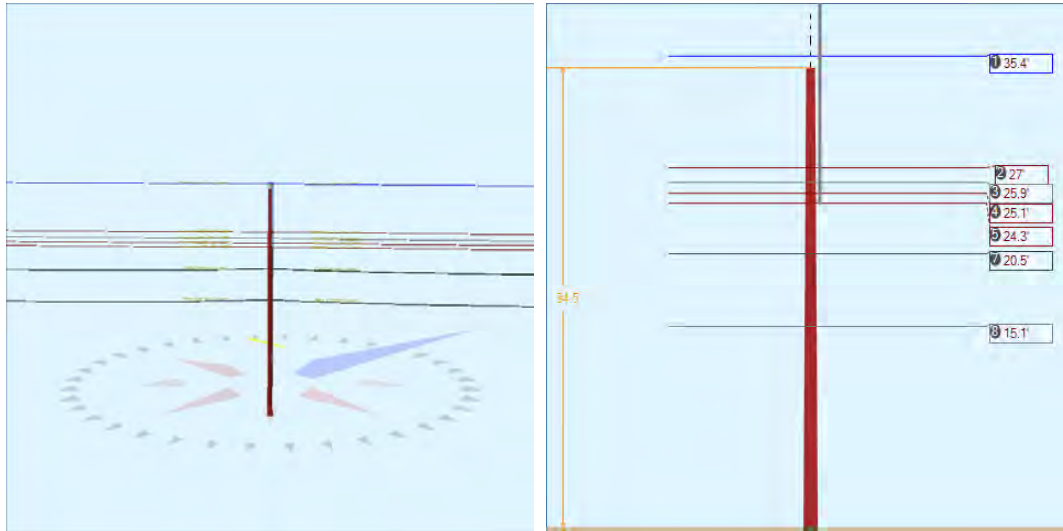
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.08	6.62	1.3300	1.64	0.337	120.0	47.9	120.0	925	54	-52	1,286	1,288
CATV	CATV 1.0 Unknown, COMMUNICATION	20.08	6.62	1.3300	1.62	0.337	119.0	228.3	119.0	925	75	-52	1,275	1,299

Telco	TELE 1.5	Unknown, COMMUNICATION	19.20	6.68	1.5000	1.91	0.900	120.0	47.9	120.0	2,000	113	-92	1,344	1,365
Telco	TELE 1.5	Unknown, COMMUNICATION	19.20	6.68	1.5000	1.89	0.900	119.0	228.3	119.0	2,000	155	-91	1,332	1,397
Totals:												398	-286	5,238	5,349

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.44	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.34	0.00	318.1	228.1	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	318.1	228.1	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.14	0.00	318.1	228.1	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.47	0.00	318.1	228.1	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.08	0.00	137.9	47.9	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.20	0.00	137.9	47.9	5.00	3.00	0.00	-5	0	-5
Totals:										-2	202	199

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.24	33.02	9.89	11.31	6.69	10.60	1.60e+6	60.00	57.00	33.44	32,926	330.86	12.99

Pole Num:	166W - 73746-33441	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.52	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.68	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068060 Deg	Longitude:	-84.452003 Deg	Elevation:	900.106681137864		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.7	0.0
Groundline	29.7	0.0
Vertical	7.5	18.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,025	317.5
Groundline	20,025	317.5
GL Allowable	68,538	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 317.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	388	43.8	10,880	54.3	15.9	1,076	394	4	1,080	15.9
Comms	288	32.5	5,388	26.9	7.9	533	517	6	538	7.9
Pole	175	19.8	3,072	15.3	4.5	304	1,653	18	322	4.7
Risers	28	3.2	457	2.3	0.7	45	46	1	46	0.7
Insulators	7	0.7	228	1.1	0.3	23	59	1	23	0.3
Pole Load	885	100.0	20,025	100.0	29.2	1,979	2,669	30	2,009	29.5
Pole Reserve Capacity			48,513		70.8	4,821			4,791	70.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 317.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	422	47.7	11,554	57.7	16.9	1,142	480	5	1,147	16.9
Unknown, COMMUNICATION	288	32.5	5,399	27.0	7.9	534	536	6	540	7.9
Pole	175	19.8	3,072	15.3	4.5	304	1,653	18	322	4.7
Totals:	885	100.0	20,025	100.0	29.2	1,979	2,669	30	2,009	29.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.36	0.00	0.3980	0.27	0.145	119.4	47.5	119.4	2,128	-48	0	1,106	1,059
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.36	0.00	0.3980	0.27	0.145	120.0	227.9	120.0	2,128	573	0	1,112	1,685
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.99	6.28	0.3980	0.27	0.145	119.4	47.5	119.4	2,128	-36	21	844	828
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.99	6.28	0.3980	0.27	0.145	120.0	227.9	120.0	2,128	437	21	848	1,306
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.88	6.35	0.3980	0.27	0.145	119.4	47.5	119.4	2,128	-35	21	809	795
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.88	6.35	0.3980	0.27	0.145	120.0	227.9	120.0	2,128	419	21	813	1,253
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.39	0.3980	0.27	0.145	119.4	47.5	119.4	2,128	-34	21	784	771

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.06	6.39	0.3980	0.27	0.145	120.0	227.9	120.0	2,128	406	21	788	1,215
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.32	6.44	0.3980	0.27	0.145	119.4	47.5	119.4	2,128	-33	21	761	749
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.32	6.44	0.3980	0.27	0.145	120.0	227.9	120.0	2,128	394	21	764	1,179
Totals:											2,044	167	8,628	10,840	

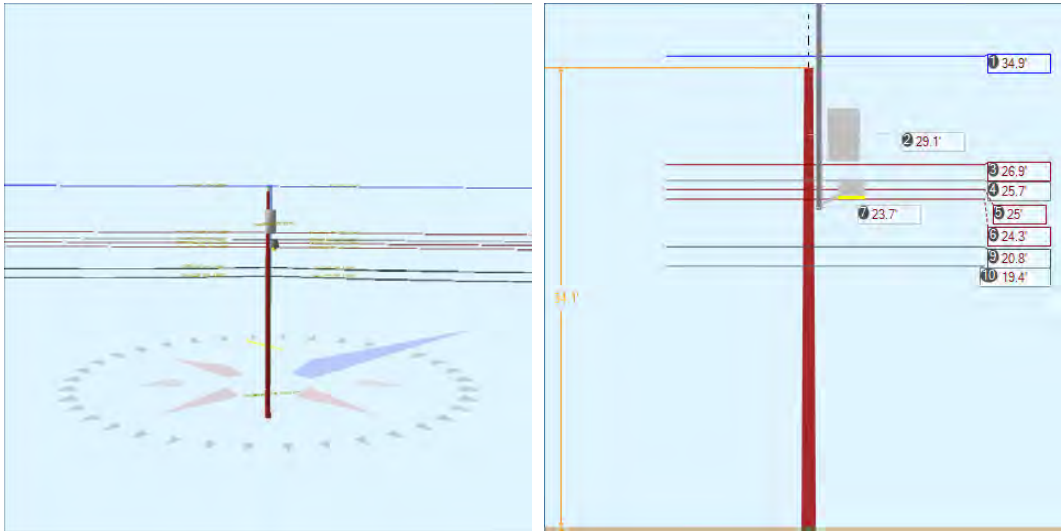
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.54	6.66	1.3300	1.63	0.337	119.4	47.5	119.4	925	-12	52	1,309	1,349
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.54	6.66	1.3300	1.64	0.337	120.0	227.9	120.0	925	145	52	1,315	1,512
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.08	6.98	1.5000	1.89	0.900	119.4	47.5	119.4	2,000	-19	95	1,050	1,127
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.08	6.98	1.5000	1.91	0.900	120.0	227.9	120.0	2,000	230	96	1,055	1,381
		COMMUNICATION													
Totals:											343	296	4,729	5,368	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 9.0°	Riser	KU, UTILITY	24.08	5.45	9.0	9.0	24.08	288.97	2.50	2.50	288.97	7	448	455
Totals:											7	448	455	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.49	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.99	0.00	317.7	227.7	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.88	0.00	317.7	227.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.06	0.00	317.7	227.7	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.32	0.00	317.7	227.7	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.54	0.00	317.7	227.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	15.08	0.00	317.7	227.7	5.00	3.00	0.00	6	0	6
Totals:										19	208	227

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.06	32.96	10.02	11.57	6.69	10.73	1.60e+6	60.00	57.00	34.49	35,391	355.81	13.33

Pole Num:	167W - 73826-33517	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.94	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.52	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068281 Deg	Longitude:	-84.451684 Deg	Elevation:	890.014781660453		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.6	0.0
Groundline	31.6	0.0
Vertical	18.9	22.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,936	318.8
Groundline	20,936	318.8
GL Allowable	67,590	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	406	41.3	11,330	54.1	16.8	1,136	394	4	1,141	16.8
Comms	293	29.8	6,174	29.5	9.1	619	517	6	625	9.2
PowerEquipments	55	5.6	-483	-2.3	-0.7	-48	1,216	14	-35	-0.5
Pole	172	17.5	2,986	14.3	4.4	299	1,623	18	318	4.7
Streetlights	20	2.0	246	1.2	0.4	25	86	1	26	0.4
Risers	30	3.1	459	2.2	0.7	46	44	0	47	0.7
Insulators	6	0.7	225	1.1	0.3	23	59	1	23	0.3
Pole Load	983	100.0	20,936	100.0	31.0	2,099	3,938	44	2,143	31.5
Pole Reserve Capacity			46,654		69.0	4,701			4,657	68.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	518	52.7	11,766	56.2	17.4	1,180	1,780	20	1,200	17.6
Unknown, COMMUNICATION	293	29.8	6,185	29.5	9.2	620	536	6	626	9.2
Pole	172	17.5	2,986	14.3	4.4	299	1,623	18	318	4.7
Totals:	983	100.0	20,936	100.0	31.0	2,099	3,938	44	2,143	31.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.94	0.00	0.3980	0.27	0.145	120.1	47.0	120.1	2,128	2,279	0	1,099	3,378
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.94	0.00	0.3980	0.27	0.145	119.4	227.5	119.4	2,128	-1,630	0	1,092	-538
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.88	6.26	0.3980	0.27	0.145	120.1	47.0	120.1	2,128	1,753	21	845	2,618
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.88	6.26	0.3980	0.27	0.145	119.4	227.5	119.4	2,128	-1,254	21	840	-393
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.71	6.33	0.3980	0.27	0.145	120.1	47.0	120.1	2,128	1,676	21	808	2,506
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.71	6.33	0.3980	0.27	0.145	119.4	227.5	119.4	2,128	-1,199	21	804	-375

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.05	6.37	0.3980	0.27	0.145	120.1	47.0	120.1	2,128	1,633	21	787	2,441
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.05	6.37	0.3980	0.27	0.145	119.4	227.5	119.4	2,128	-1,168	21	783	-364
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.33	6.41	0.3980	0.27	0.145	120.1	47.0	120.1	2,128	1,586	21	765	2,372
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.33	6.41	0.3980	0.27	0.145	119.4	227.5	119.4	2,128	-1,135	21	760	-353
Totals:											2,542	167	8,584	11,293	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.80	6.62	1.3300	1.64	0.337	120.1	47.0	120.1	925	590	52	1,333	1,974
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.80	6.62	1.3300	1.63	0.337	119.4	227.5	119.4	925	-422	52	1,325	955
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.36	6.70	1.5000	1.91	0.900	120.1	47.0	120.1	2,000	1,186	92	1,356	2,634
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.36	6.70	1.5000	1.89	0.900	119.4	227.5	119.4	2,000	-849	91	1,348	591
		COMMUNICATION													
Totals:											506	287	5,361	6,154	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.12	21.63	120.0	120.0	640.00	47.00	--	24.00	--	-2,076	1,594	-481
Totals:											-2,076	1,594	-481	

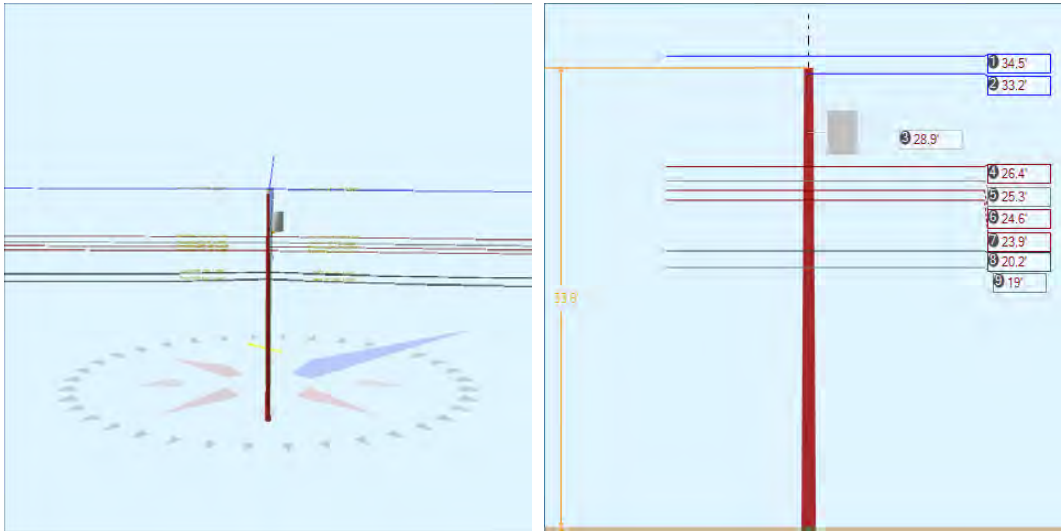
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	23.71	3.95	120.0	120.0	45.00	24.00	20.00	3.00	36.00	-225	469	245
Totals:											-225	469	245	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 170.0°	Riser	KU, UTILITY	23.06	5.45	170.0	170.0	23.06	276.69	4.00	4.00	276.69	-9	466	457
Totals:											-9	466	457	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.06	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.88	0.00	317.2	227.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.71	0.00	317.2	227.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.05	0.00	317.2	227.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.33	0.00	317.2	227.2	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.80	0.00	317.2	227.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.36	0.00	317.2	227.2	5.00	3.00	0.00	5	0	5
Totals:										19	206	224

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.44	33.69	9.79	15.16	6.69	10.68	1.60e+6	60.00	57.00	34.06	20,840	208.38	5.29

Pole Num:	168W - 73906-33593	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.42	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.35	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068508 Deg	Longitude:	-84.451379 Deg	Elevation:	891.645428264659		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.8	0.0
Groundline	28.8	0.0
Vertical	14.1	21.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,784	320.9
Groundline	18,784	320.9
GL Allowable	66,534	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	372	46.9	10,589	56.4	15.9	1,078	435	5	1,083	15.9
Comms	201	25.4	3,678	19.6	5.5	375	518	6	380	5.6
PowerEquipments	42	5.3	1,332	7.1	2.0	136	694	8	143	2.1
Pole	169	21.4	2,899	15.4	4.4	295	1,589	18	313	4.6
Insulators	9	1.2	285	1.5	0.4	29	68	1	30	0.4
Pole Load	793	100.0	18,784	100.0	28.2	1,912	3,304	37	1,950	28.7
Pole Reserve Capacity			47,750		71.8	4,888			4,850	71.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	423	53.3	12,217	65.0	18.4	1,244	1,178	13	1,257	18.5
Unknown, COMMUNICATION	201	25.4	3,668	19.5	5.5	373	537	6	379	5.6
Pole	169	21.4	2,899	15.4	4.4	295	1,589	18	313	4.6
Totals:	793	100.0	18,784	100.0	28.2	1,912	3,304	37	1,950	28.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.46	0.00	0.3980	0.27	0.145	119.7	48.3	119.7	2,128	3,333	0	1,080	4,413
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	34.46	0.00	0.3980	0.27	0.145	120.1	227.0	120.1	2,128	-4,995	0	1,082	-3,913
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	33.15	16.12	0.3980	0.05	0.145	61.1	316.1	61.1	150	4,955	6	2	4,963
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.38	6.26	0.3980	0.27	0.145	119.7	48.3	119.7	2,128	2,550	-21	826	3,356
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.38	6.26	0.3980	0.27	0.145	120.1	227.0	120.1	2,128	-3,822	-21	828	-3,015
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.33	6.33	0.3980	0.27	0.145	119.7	48.3	119.7	2,128	2,449	-21	794	3,222
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.33	6.33	0.3980	0.27	0.145	120.1	227.0	120.1	2,128	-3,670	-21	795	-2,896

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.64	6.37	0.3980	0.27	0.145	119.7	48.3	119.7	2,128	2,382	-21	772	3,133
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.64	6.37	0.3980	0.27	0.145	120.1	227.0	120.1	2,128	-3,569	-21	773	-2,817
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.91	6.41	0.3980	0.27	0.145	119.7	48.3	119.7	2,128	2,311	-21	749	3,039
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.91	6.41	0.3980	0.27	0.145	120.1	227.0	120.1	2,128	-3,464	-21	750	-2,735
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.33	6.33	0.3980	0.05	0.145	61.1	316.1	61.1	150	3,786	11	1	3,798
Totals:											2,247	-150	8,451	10,548	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.21	6.62	1.3300	1.63	0.337	119.7	48.3	119.7	925	849	-52	1,290	2,088
CATV	CATV 1.0	Unknown, COMMUNICATION	20.21	6.62	1.3300	1.64	0.337	120.1	227.0	120.1	925	-1,273	-52	1,292	-33
Telco	TELE 1.5	Unknown, COMMUNICATION	19.00	6.70	1.5000	1.90	0.900	119.7	48.3	119.7	2,000	1,726	-92	1,325	2,960
Telco	TELE 1.5	Unknown, COMMUNICATION	19.00	6.70	1.5000	1.91	0.900	120.1	227.0	120.1	2,000	-2,587	-92	1,327	-1,351
Totals:											-1,284	-287	5,235	3,664	

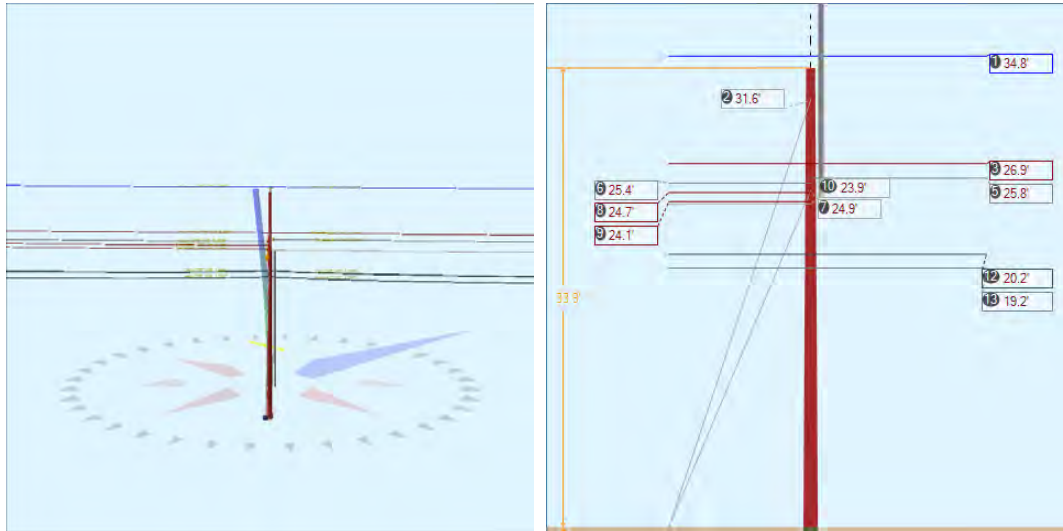
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	28.90	20.62	45.0	45.0	365.00	39.00	--	22.00	--	123	1,205	1,327
Totals:											123	1,205	1,327	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.58	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.15	0.00	316.1	316.1	3.00	3.80	12.75	8	78	86
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.38	0.00	137.6	47.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.33	0.00	137.6	47.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.64	0.00	137.6	47.6	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.91	0.00	137.6	47.6	2.00	3.00	3.19	-2	11	9

Bolt	Three Bolt	Unknown, COMMUNICATION	20.21	0.00	137.6	47.6	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.00	0.00	137.6	47.6	5.00	3.00	0.00	-5	0	-5
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.33	0.00	316.1	316.1	2.00	3.00	3.19	2	12	14
Totals:										-9	293	284

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.18	33.50	9.78	13.58	6.69	10.62	1.60e+6	60.00	57.00	33.58	23,381	234.31	7.09

Pole Num:	169W - 73985-33669	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.05	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.48	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068743 Deg	Longitude:	-84.451079 Deg	Elevation:	879.823337928169		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	19.1	0.0
Groundline	19.1	0.0
Vertical	1.0	18.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,542	176.8
Groundline	12,542	176.8
GL Allowable	67,336	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.3	137.0		0.0	137.0	6.7	315.0
? EHS 3/8 (Down)			31.6	0.0	137.0	3.1	320.0
? EHS 3/8 (Down)			24.9	0.0	137.0	7.5	310.0
? Single Helix Anchor	113.2	47.4		26.4	137.0	27.2	240.0
? EHS 3/8 (Span/Head)			23.9	38.0	137.0	43.1	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 176.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	3,531	628.1	85,677	683.1	127.2	8,653	309	3	8,656	127.3
Comms	156	27.7	2,853	22.8	4.2	288	503	6	294	4.3
GuyBraces	-3,322	-590.9	-79,400	-633.1	-117.9	-8,019	48	1	-8,018	-117.9
Pole	132	23.5	2,275	18.1	3.4	230	1,615	18	248	3.6
Risers	60	10.6	977	7.8	1.5	99	95	1	100	1.5
Insulators	5	0.9	160	1.3	0.2	16	63	1	17	0.2
Pole Load	562	100.0	12,542	100.0	18.6	1,267	2,632	30	1,296	19.1
Pole Reserve Capacity			54,794		81.4	5,533			5,504	80.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 176.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	274	48.8	7,421	59.2	11.0	750	495	6	755	11.1
Unknown, COMMUNICATION	156	27.7	2,845	22.7	4.2	287	522	6	293	4.3
Pole	132	23.5	2,275	18.1	3.4	230	1,615	18	248	3.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	562	100.0	12,542	100.0	18.6	1,267	2,632	30	1,296	19.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.82	0.00	0.3980	0.24	0.145	113.2	47.4	113.2	2,128	-61,115	0	799	-60,316
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.82	0.00	0.3980	0.27	0.145	119.7	228.3	119.7	2,128	59,937	0	855	60,792
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.87	6.26	0.3980	0.24	0.145	113.2	47.4	113.2	2,128	-47,129	-15	616	-46,529
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.87	6.26	0.3980	0.27	0.145	119.7	228.3	119.7	2,128	46,221	-16	660	46,864
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.80	6.32	0.3980	0.24	0.145	113.2	47.4	113.2	2,128	-45,257	-12	591	-44,678

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.43	6.34	0.3980	0.27	0.145	119.7	228.3	119.7	2,128	43,750	13	624	44,388
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.73	6.38	0.3980	0.27	0.145	119.7	228.3	119.7	2,128	42,542	13	607	43,162
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.06	6.42	0.3980	0.27	0.145	119.7	228.3	119.7	2,128	41,393	13	591	41,997
Totals:											80,343	-4	5,343	85,681	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.17	6.65	1.3300	1.53	0.337	113.2	47.4	113.2	925	-15,384	-38	942	-14,480
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.17	6.65	1.3300	1.63	0.337	119.7	228.3	119.7	925	15,087	-41	1,009	16,056
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.15	6.71	1.5000	1.77	0.900	113.2	47.4	113.2	2,000	-31,579	-68	978	-30,668
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.15	6.71	1.5000	1.90	0.900	119.7	228.3	119.7	2,000	30,970	-71	1,047	31,946
		COMMUNICATION													
Totals:											-905	-218	3,977	2,854	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 180.0°	Riser	KU, UTILITY	26.32	5.45	180.0	180.0	26.32	315.87	2.50	2.50	315.87	12	353	365
Riser 25.0°	Riser	KU, UTILITY	23.80	5.45	25.0	25.0	23.80	285.56	4.00	4.00	285.56	-16	628	612
Totals:											-5	981	977	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.95	0.00	0.0	0.0	13.00	9.00	10.50	0	121	121
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.87	0.00	317.8	227.8	2.00	3.00	3.19	-2	10	8
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.80	0.00	47.4	47.4	2.00	3.00	3.19	-1	9	8
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.43	0.00	228.3	228.3	2.00	3.00	3.19	1	9	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.73	0.00	228.3	228.3	2.00	3.00	3.19	1	9	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.06	0.00	228.3	228.3	2.00	3.00	3.19	1	9	10
Bolt	Three Bolt	Unknown, COMMUNICATION	20.17	0.00	317.8	227.8	5.00	3.00	0.00	-4	0	-4

Bolt	Three Bolt	Unknown, COMMUNICATION	19.15	0.00	317.8	227.8	5.00	3.00	0.00	-4	0	-4
Totals:										-7	167	160

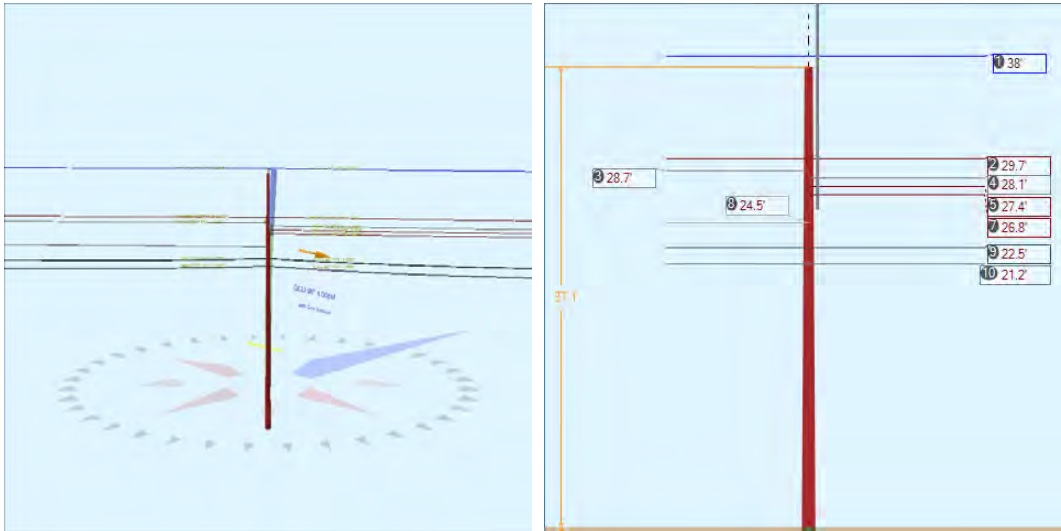
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	31.56	0.00	19.25	0.375	75.00	137.0	58.4	0.273	35.32	0.00
EHS 3/8	Down	KU, UTILITY	24.86	0.00	19.25	0.375	75.00	137.0	52.1	0.273	29.74	0.00
EHS 3/8	Span/Head	KU, UTILITY	23.91	23.91	113.18	0.375	75.00	47.4	0.0	0.273	111.35	3.70

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	434	395	0	0	0	27	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,035	941	0	0	0	21	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,975	5,432	5,273	0	5,273	-3,345	-79,452
Totals:										0	5,273	-3,345	-79,404

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load² (lbs)	Load at Pole MCU³ (lbs)	Max Required Capacity² (%)
Single Helix Anchor		18.00	19.25	137.0	20,000	1.00	20,000	1,334	0	6.7
Single Helix Anchor		18.00	113.18	47.4	20,000	1.00	20,000	5,432	5,273	27.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.30	33.01	9.95	6.85	6.69	10.66	1.60e+6	60.00	57.00	33.95	267,788	2631.80	100.00

Pole Num:	170W - 74065-33744	Pole Length / Class:	45 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.91	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	34.31	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068942 Deg	Longitude:	-84.450788 Deg	Elevation:	879.161431859882		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.7	24.3
Groundline	42.8	0.0
Vertical	1.2	20.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,478	61.5
Groundline	25,598	131.4
GL Allowable	72,495	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	113.2	227.4		30.3	95.6	30.6	50.0
? EHS 3/8 (Span/Head)			24.5	43.7	95.6	48.6	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 131.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,055	112.8	30,085	117.5	41.5	2,814	400	4	2,818	41.4
Comms	302	32.3	6,950	27.2	9.6	650	622	7	657	9.7
GuyBraces	-614	-65.7	-15,106	-59.0	-20.8	-1,413	26	0	-1,413	-20.8
Pole	155	16.5	2,886	11.3	4.0	270	1,822	19	289	4.3
Risers	32	3.4	578	2.3	0.8	54	52	1	55	0.8
Insulators	6	0.6	207	0.8	0.3	19	63	1	20	0.3
Pole Load	935	100.0	25,598	100.0	35.3	2,394	2,985	32	2,426	35.7
Pole Reserve Capacity			46,897		64.7	4,406			4,374	64.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 131.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	478	51.1	15,752	61.5	21.7	1,473	522	6	1,479	21.7
Unknown, COMMUNICATION	302	32.3	6,960	27.2	9.6	651	641	7	658	9.7
Pole	155	16.5	2,886	11.3	4.0	270	1,822	19	289	4.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	935	100.0	25,598	100.0	35.3	2,394	2,985	32	2,426	35.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.97	0.00	0.3980	0.47	0.145	175.0	48.4	175.0	2,128	12,869	0	1,268	14,137
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.97	0.00	0.3980	0.20	0.145	113.2	227.4	113.2	2,128	-11,047	0	835	-10,212
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.70	6.26	0.3980	0.47	0.145	175.0	48.4	175.0	2,128	10,062	30	992	11,083
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.70	6.26	0.3980	0.20	0.145	113.2	227.4	113.2	2,128	-8,637	19	653	-7,965
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.71	6.32	0.3980	0.20	0.145	113.2	227.4	113.2	2,128	-8,352	-2	631	-7,722
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.15	6.35	0.3980	0.47	0.145	175.0	48.4	175.0	2,128	9,538	4	940	10,481

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.45	6.39	0.3980	0.47	0.145	175.0	48.4	175.0	2,128	9,301	4	917	10,221
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.79	6.43	0.3980	0.47	0.145	175.0	48.4	175.0	2,128	9,078	4	895	9,976
Totals:											22,811	58	7,130	30,000	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.52	6.67	1.3300	2.59	0.337	175.0	48.4	175.0	925	3,317	76	1,533	4,926
CATV	CATV 1.0	Unknown, COMMUNICATION	22.52	6.67	1.3300	1.52	0.337	113.2	227.4	113.2	925	-2,848	49	1,009	-1,789
Telco	TELE 1.5	Unknown, COMMUNICATION	21.21	6.75	1.5000	3.08	0.900	175.0	48.4	175.1	2,000	6,755	134	1,578	8,467
Telco	TELE 1.5	Unknown, COMMUNICATION	21.21	6.75	1.5000	1.77	0.900	113.2	227.4	113.2	2,000	-5,799	87	1,039	-4,674
Totals:											1,426	346	5,158	6,930	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	27.27	5.68	360.0	360.0	27.27	327.28	2.50	2.50	327.28	-8	584	576
Totals:											-8	584	576	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	37.09	0.00	0.0	0.0	13.00	9.00	10.50	0	140	140	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.70	0.00	137.9	47.9	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.71	0.00	227.4	227.4	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.15	0.00	48.4	48.4	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.45	0.00	48.4	48.4	2.00	3.00	3.19	0	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.79	0.00	48.4	48.4	2.00	3.00	3.19	0	10	10	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.52	0.00	137.9	47.9	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.21	0.00	137.9	47.9	5.00	3.00	0.00	5	0	5	
Totals:											13	193	206

Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	24.53	24.53	113.18	0.375	75.00	227.4	0.0	0.273	111.34	4.25

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	6,729	6,118	6,063	0	6,063	-635	-15,064
Totals:										0	6,063	-635	-15,064

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	113.18	227.4	20,000	1.00	20,000	6,118	6,063	30.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.15	33.16	10.16	7.63	6.69	10.93	1.60e+6	60.00	57.00	37.09	240,178	2487.22	83.33

41' 6" - 102W - NT

31' 1" - Lowest Power

25' 7" - Proposed Metronet

22' 7" - Highest Tel Cable

4' - Base offset

Base

37' 11" - 103W - 236-315

23' 9" - Lowest Power

21' - Proposed Metronet

20' - Highest Tel Cable

4' - Base offset

Base



31' 9" - 104W - 236-217

19' 1" - Lowest Power

17' 9" - Proposed Metronet

15' 9" - Highest Tel Cable

4' - Base offset

Base

29' 9"

18' 11" - Lowest Power

17' 7" - Proposed Metronet

15' 5" - Highest Tel Cable

15' 5" - Highest Tel Drop

4' - Base offset

Base

34' 5" - 106W - 27230-245

24' 4" - Lowest Power

21' - Proposed Metronet

18' - Highest Tel Cable

18' - Highest Tel Drop

4' - Base offset

Base

33' - 107W - 26230-241-01

25' - Lowest Power

21' 4" - Proposed Metronet

19' 2" - Highest Tel Cable

19' 2" - Highest Tel Drop

4' - Base offset

Base

WIN6385

35' 7" - 108W - 27230-243

27' 11" - Lowest Power

24' 7" - Proposed Metronet

20' 5" - Highest Tel Drop

19' 7" - Highest Tel Cable

4' - Base offset

Base

WIN6386

34' 5" - 109W - NT

20' 1" - Lowest Power

18' 8" - Proposed Metronet

16' 5" - Highest Tel Drop

15' 8" - Highest Tel Cable

4' - Base offset

Base

WIN6387

34' 1" - 110W - NT

21' 6" - Lowest Power

18' 1" - Proposed Metronet

17' 3" - Highest Tel Cable

4' - Base offset

Base

34' 3" - 111W - 27230-265

21' - Lowest Power

17' 8" - Proposed Metronet

16' 5" - Highest Tel Drop

16' 1" - Highest Tel Cable

4' - Base offset

Base

35' 3" - 112W - 26230-283

26' 1" - Lowest Power

21' 9" - Proposed Metronet

17' 6" - Highest Tel Drop

17' 4" - Highest Tel Cable

4' - Base offset

Base

31' 8" - 157W - 75128-32621

21' 6" - Lowest Power

17' 9" - Highest Tel Cable

17' 9" - Proposed Metronet

17' 1" - Highest Tel Drop

4' - Base offset

Base

33' 6" - 158W - NT

23' 8" - Lowest Power

19' 10" - Proposed Metronet

18' 9" - Highest Tel Cable

18' 3" - Highest Tel Drop

4' - Base offset

Base

32' 11" - 159W - 73972-32794

22' 6" - Lowest Power

19' 2" - Proposed Metronet

18' 5" - Highest Tel Cable

4' - Base offset

Base

33' 7" - 160W - 73931-32836

24' 2" - Lowest Power

20' 7" - Proposed Metronet

18' 8" - Highest Tel Cable

17' 7" - Highest Tel Drop

4' - Base offset

Base

33' 7" - 161W - 73859-32912

23' 4" - Lowest Power

19' 7" - Proposed Metronet

17' 6" - Highest Tel Cable

4' - Base offset

Base

WIN6395

33' - 162W - 73777-3300

23' 5" - Lowest Power

20' 1" - Proposed Metronet

18' 11" - Highest Tel Drop

18' 10" - Highest Tel Cable

4' - Base offset

Base

34' - 163W - 73685-33103

24' 1" - Lowest Power

19' 8" - Proposed Metronet

19' 2" - Highest Tel Cable

18' 6" - Highest Tel Drop

4' - Base offset

Base

WIN6397

37' 2" - 164W - 73555-33260

27' 6" - Lowest Power

24' 2" - Proposed Metronet

23' 10" - Proposed Metronet

22' 6" - Highest Tel Cable

22' 6" - Highest Tel Drop

4' - Base offset

Base

WIN6398

33' 5" - 165W - 73666-33365

23' 6" - Lowest Power

21' 1" - Proposed Metronet

19' 2" - Highest Tel Cable

19' - Highest Tel Drop

4' - Base offset

Base

34' 6" - 166W - 73746-33441

23' 10" - Lowest Power

20' 6" - Proposed Metronet

15' 1" - Highest Tel Drop

15' 1" - Highest Tel Cable

4' - Base offset

Base

34' 1" - 167W - 73826-33517

23' 1" - Lowest Power

19' 4" - Highest Tel Cable

19' 4" - Proposed Metronet

18' 9" - Highest Tel Drop

4' - Base offset

Base

33' 7" - 168W - 73906-33593

23' 11" - Lowest Power

20' 3" - Proposed Metronet

19' - Highest Tel Cable

18' 6" - Highest Tel Drop

4' - Base offset

Base

33' 11" - 169W - 73985-33669

23' 10" - Lowest Power

20' 2" - Proposed Metronet

19' 2" - Highest Tel Cable

18' 10" - Highest Tel Drop

4' - Base offset

Base

37' 1" - 170W - 74065-33744

26' 10" - Lowest Power

23' 6" - Proposed Metronet

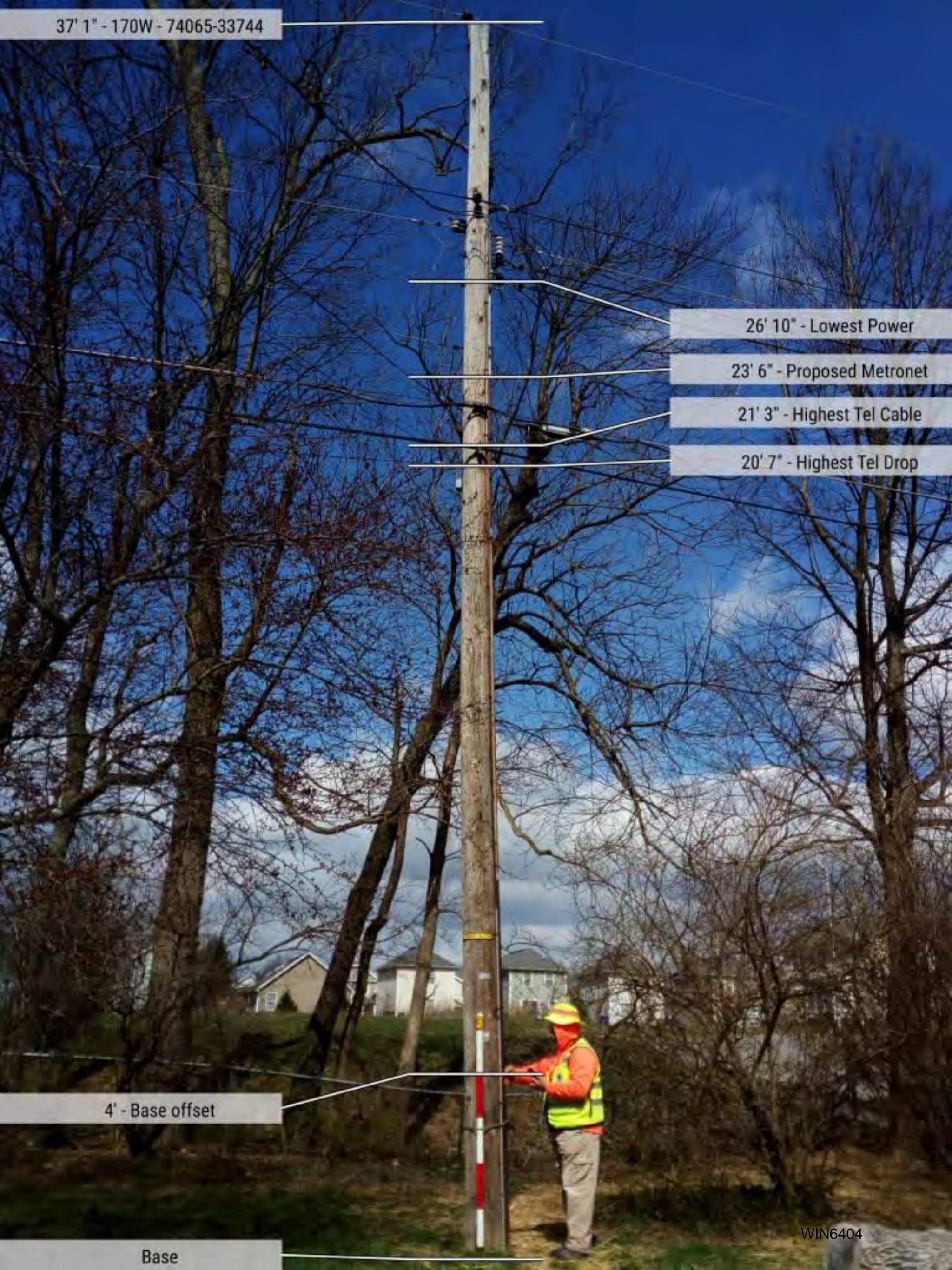
21' 3" - Highest Tel Cable

20' 7" - Highest Tel Drop

4' - Base offset

Base

WIN6404



From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, March 19, 2018 3:19 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX167-04W
Attachments: Map Key.pdf; LX167-04W - Windstream Inventory Report.pdf; LX167-04W POLE APP MAP 171-195.pdf; O-Calcs.pdf; Pole Photos.pdf; LX167-04W - METRONET POLE INVENTORY REPORT.XLSX

Good Afternoon,
Please see attached for proposal titled LX167-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
173W 74447-33926		WS	
174W 74574-33815	45/4	WS	2=Comms
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
174W 74574-33815		WS	
175W 74491-33737	35/5	WS	2=Comms
175W 74491-33737		WS	
175W 74491-33737		WS	
175W 74491-33737		WS	
175W 74491-33737		WS	
175W 74491-33737		WS	
175W 74491-33737		WS	
175W 74491-33737		WS	
175W 74491-33737		WS	
175W 74491-33737		WS	
176W 74397-33648	35/5	WS	2=Comms
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
176W 74397-33648		WS	
177W 74314-33570	40/4	WS	2=Comms
177W 74314-33570		WS	
177W 74314-33570		WS	

177W	74314-33570		WS	
177W	74314-33570		WS	
177W	74314-33570		WS	
177W	74314-33570		WS	
177W	74314-33570		WS	
177W	74314-33570		WS	
178W	74233-33497	40/4	WS	1=None
178W	74233-33497		WS	
178W	74233-33497		WS	
178W	74233-33497		WS	
178W	74233-33497		WS	
178W	74233-33497		WS	
178W	74233-33497		WS	
178W	74233-33497		WS	
178W	74233-33497		WS	
179W	74252-33414	40/4	WS	2=Comms
179W	74252-33414		WS	
179W	74252-33414		WS	
179W	74252-33414		WS	
179W	74252-33414		WS	
179W	74252-33414		WS	
179W	74252-33414		WS	
179W	74252-33414		WS	
179W	74252-33414		WS	
180W	74058-33325	40/4	WS	2=Comms
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
180W	74058-33325		WS	
181W	73998-33233	40/4	WS	3=Elec
181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	

181W	73998-33233		WS	
181W	73998-33233		WS	
181W	73998-33233		WS	
182W	75135-33087	40/4	WS	2=Comms
182W	75135-33087		WS	
182W	75135-33087		WS	
182W	75135-33087		WS	
182W	75135-33087		WS	
182W	75135-33087		WS	
182W	75135-33087		WS	
182W	75135-33087		WS	
183W	74204-33015	40/4	WS	2=Comms
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
183W	74204-33015		WS	
184W	74256-33106	40/4	WS	2=Comms
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
184W	74256-33106		WS	
185W	74338-34198	40/4	WS	2=Comms
185W	74338-34198		WS	
185W	74338-34198		WS	
185W	74338-34198		WS	
185W	74338-34198		WS	
185W	74338-34198		WS	
185W	74338-34198		WS	
185W	74338-34198		WS	

185W	74338-34198		WS	
186W	74433-33283	40/4	WS	4=Comms&Elec
186W	74433-33283		WS	
186W	74433-33283		WS	
186W	74433-33283		WS	
186W	74433-33283		WS	
186W	74433-33283		WS	
186W	74433-33283		WS	
186W	74433-33283		WS	
187W	74517-33969	40/4	WS	2=Comms
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
187W	74517-33969		WS	
188W	74700-33705	40/4	WS	2=Comms
188W	74700-33705		WS	
188W	74700-33705		WS	
188W	74700-33705		WS	
188W	74700-33705		WS	
188W	74700-33705		WS	
188W	74700-33705		WS	
188W	74700-33705		WS	
189W	74793-33623	40/4	WS	2=Comms
189W	74793-33623		WS	
189W	74793-33623		WS	
189W	74793-33623		WS	
189W	74793-33623		WS	
189W	74793-33623		WS	
189W	74793-33623		WS	
189W	74793-33623		WS	
189W	74793-33623		WS	
189W	74793-33623		WS	
190W	75209-33188	45/3	WS	2=Comms
190W	75209-33188		WS	

190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
190W	75209-33188		WS	
191W	75257-33304	40/4	WS	2=Comms
191W	75257-33304		WS	
191W	75257-33304		WS	
191W	75257-33304		WS	
191W	75257-33304		WS	
191W	75257-33304		WS	
191W	75257-33304		WS	
191W	75257-33304		WS	
191W	75257-33304		WS	
191W	75257-33304		WS	
192W	75073-33378	40/4	WS	2=Comms
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
192W	75073-33378		WS	
193W	74984-33456	40/4	WS	2=Comms
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
193W	74984-33456		WS	
194W	74863-33316	30/5	WS	2=Comms
194W	74863-33316		WS	
194W	74863-33316		WS	
194W	74863-33316		WS	

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
44.90	1945 WICKLAND DR	38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	KU		
		38.06926	-84.45035	Metronet		
Lower Charter		38.06926	-84.45035	Charter		
Lower Windstream		38.06926	-84.45035	Windstream		
47.90	1951 WICKLAND DR	38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	KU		
		38.06961	-84.44987	Metronet		
		38.06961	-84.44987	Metronet		
Lower Charter		38.06961	-84.44987	Charter		
Lower Charter		38.06961	-84.44987	Charter		
Lower Windstream		38.06961	-84.44987	Windstream		
Lower Windstream		38.06961	-84.44987	Windstream		
Lower Windstream		38.06961	-84.44987	Windstream		
46.10	1954 WICKLAND DR	38.06942	-84.44961	KU		

			38.06942	-84.44961	KU
			38.06942	-84.44961	KU
			38.06942	-84.44961	KU
			38.06942	-84.44961	KU
			38.06942	-84.44961	KU
			38.06942	-84.44961	KU
			38.06942	-84.44961	Metronet
Lower Charter			38.06942	-84.44961	Charter
Lower Windstream			38.06942	-84.44961	Windstream
	41.80	1955 SPRING STATION	38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	KU
			38.06908	-84.44915	Metronet
Lower Charter			38.06908	-84.44915	Charter
Lower Windstream			38.06908	-84.44915	Windstream
Lower Windstream			38.06908	-84.44915	Windstream
	33.30	1951 SPRING STATION	38.06886	-84.44945	KU
			38.06886	-84.44945	KU
			38.06886	-84.44945	KU
			38.06886	-84.44945	KU
			38.06886	-84.44945	KU
			38.06886	-84.44945	KU
			38.06886	-84.44945	Metronet
Lower Charter			38.06886	-84.44945	Charter
Lower Windstream			38.06886	-84.44945	Windstream
	34.30	1946 WICKLAND DR	38.06869	-84.44972	KU
			38.06869	-84.44972	KU
			38.06869	-84.44972	KU
			38.06869	-84.44972	KU
			38.06869	-84.44972	KU
			38.06869	-84.44972	KU
			38.06869	-84.44972	KU
			38.06869	-84.44972	Metronet
Lower Charter			38.06869	-84.44972	Charter
Lower Windstream			38.06869	-84.44972	Windstream
	29.20	1940 WICKLAND DR	38.06844	-84.45002	KU
			38.06844	-84.45002	KU
			38.06844	-84.45002	KU

		38.06844	-84.45002	KU	
		38.06844	-84.45002	KU	
		38.06844	-84.45002	KU	
		38.06844	-84.45002	Metronet	
		38.06844	-84.45002	Charter	
		38.06844	-84.45002	Windstream	
	26.50	1930 WICKLAND DR	38.06822	-84.45039	KU
			38.06822	-84.45039	KU
			38.06822	-84.45039	KU
			38.06822	-84.45039	KU
			38.06822	-84.45039	KU
			38.06822	-84.45039	Metronet
			38.06822	-84.45039	Charter
			38.06822	-84.45039	Windstream
	31.90	1922 WICKLAND DR	38.06802	-84.45064	KU
			38.06802	-84.45064	KU
			38.06802	-84.45064	KU
			38.06802	-84.45064	KU
			38.06802	-84.45064	KU
			38.06802	-84.45064	KU
			38.06802	-84.45064	Metronet
Lower Charter			38.06802	-84.45064	Charter
			38.06802	-84.45064	Windstream
	16.70	1914 WICKLAND DR	38.06780	-84.45095	KU
			38.06780	-84.45095	KU
			38.06780	-84.45095	KU
			38.06780	-84.45095	KU
			38.06780	-84.45095	KU
			38.06780	-84.45095	KU
			38.06780	-84.45095	KU
			38.06780	-84.45095	KU
			38.06780	-84.45095	Metronet
Lower Charter			38.06780	-84.45095	Charter
			38.06780	-84.45095	Windstream
	61.10	1907 SPRING STATION	38.06749	-84.45118	KU
			38.06749	-84.45118	KU
			38.06749	-84.45118	KU
Resag Neutral			38.06749	-84.45118	KU
Resag Secondary			38.06749	-84.45118	KU
Resag Secondary			38.06749	-84.45118	KU
			38.06749	-84.45118	Metronet
			38.06749	-84.45118	Metronet
			38.06749	-84.45118	Charter

	38.06749	-84.45118	Charter
	38.06749	-84.45118	Windstream
	38.06749	-84.45118	Windstream
36.20 1904 SPRING STATION	38.06717	-84.45080	KU
	38.06717	-84.45080	KU
	38.06717	-84.45080	KU
	38.06717	-84.45080	KU
	38.06717	-84.45080	KU
	38.06717	-84.45080	Metronet
Lower & Resag Charter	38.06717	-84.45080	Charter
Lower & Resag Windstream	38.06717	-84.45080	Windstream
63.90 1905 GLENGARRY WA	38.06690	-84.45051	KU
	38.06690	-84.45051	KU
	38.06690	-84.45051	KU
	38.06690	-84.45051	KU
	38.06690	-84.45051	KU
	38.06690	-84.45051	KU
	38.06690	-84.45051	KU
	38.06690	-84.45051	KU
	38.06690	-84.45051	Metronet
Lower Charter	38.06690	-84.45051	Charter
Lower Charter	38.06690	-84.45051	Charter
Lower Windstream	38.06690	-84.45051	Windstream
Lower Windstream	38.06690	-84.45051	Windstream
26.30 1908 SPRING STATION	38.06721	-84.45028	KU
	38.06721	-84.45028	KU
	38.06721	-84.45028	KU
	38.06721	-84.45028	KU
	38.06721	-84.45028	KU
	38.06721	-84.45028	KU
	38.06721	-84.45028	KU
	38.06721	-84.45028	KU
	38.06721	-84.45028	Metronet
Lower Charter	38.06721	-84.45028	Charter
Lower Windstream	38.06721	-84.45028	Windstream
30.00 1916 SPRING STATION	38.06742	-84.44999	KU
	38.06742	-84.44999	KU
	38.06742	-84.44999	KU
	38.06742	-84.44999	KU
	38.06742	-84.44999	KU
	38.06742	-84.44999	KU
	38.06742	-84.44999	Metronet
Lower Charter	38.06742	-84.44999	Charter

Lower Windstream		38.06742	-84.44999	Windstream
	28.40 1925 GLENGARRY WA	38.06765	-84.44967	KU
		38.06765	-84.44967	KU
		38.06765	-84.44967	KU
		38.06765	-84.44967	KU
Resag secondary		38.06765	-84.44967	KU
		38.06765	-84.44967	Metronet
Lower Charter		38.06765	-84.44967	Charter
Lower Windstream		38.06765	-84.44967	Windstream
	31.10 1932 SPRING STATION	38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	KU
		38.06786	-84.44936	Metronet
Lower Charter		38.06786	-84.44936	Charter
Lower Windstream		38.06786	-84.44936	Windstream
	38.30 1961 SPRING STATION	38.06876	-84.44870	KU
		38.06876	-84.44870	KU
		38.06876	-84.44870	KU
		38.06876	-84.44870	KU
		38.06876	-84.44870	KU
		38.06876	-84.44870	Metronet
Lower Charter		38.06876	-84.44870	Charter
Lower Windstream		38.06876	-84.44870	Windstream
	27.90 1969 SPRING STATION	38.06853	-84.44841	KU
		38.06853	-84.44841	KU
		38.06853	-84.44841	KU
		38.06853	-84.44841	KU
		38.06853	-84.44841	KU
		38.06853	-84.44841	KU
		38.06853	-84.44841	KU
		38.06853	-84.44841	Metronet
Lower Charter		38.06853	-84.44841	Charter
Lower Windstream		38.06853	-84.44841	Windstream
	22.20 405 SPRING STATION	38.06729	-84.44674	KU
		38.06729	-84.44674	KU

		38.06729	-84.44674	KU
		38.06729	-84.44674	KU
		38.06729	-84.44674	KU
		38.06729	-84.44674	KU
		38.06729	-84.44674	Metronet
Lower Charter		38.06729	-84.44674	Charter
		38.06729	-84.44674	Windstream
		38.06729	-84.44674	Windstream
	47.40 2001 SPRING STATION	38.06760	-84.44715	KU
		38.06760	-84.44715	KU
		38.06760	-84.44715	KU
		38.06760	-84.44715	KU
		38.06760	-84.44715	KU
		38.06760	-84.44715	KU
		38.06760	-84.44715	Metronet
Lower Charter		38.06760	-84.44715	Charter
Lower Windstream		38.06760	-84.44715	Windstream
	40.90 1993 SPRING STATION	38.06787	-84.44748	KU
		38.06787	-84.44748	KU
		38.06787	-84.44748	KU
		38.06787	-84.44748	KU
		38.06787	-84.44748	KU
		38.06787	-84.44748	KU
		38.06787	-84.44748	KU
		38.06787	-84.44748	KU
		38.06787	-84.44748	Metronet
Lower Charter		38.06787	-84.44748	Charter
Lower Windstream		38.06787	-84.44748	Windstream
	33.00 1985 SPRING STATION	38.06809	-84.44779	KU
		38.06809	-84.44779	KU
		38.06809	-84.44779	KU
		38.06809	-84.44779	KU
		38.06809	-84.44779	KU
		38.06809	-84.44779	KU
		38.06809	-84.44779	KU
		38.06809	-84.44779	Metronet
		38.06809	-84.44779	Metronet
Lower Charter		38.06809	-84.44779	Charter
Lower Windstream		38.06809	-84.44779	Windstream
	38.00 1988 SPRING STATION	38.06776	-84.44816	KU
		38.06776	-84.44816	KU
		38.06776	-84.44816	KU
		38.06776	-84.44816	Metronet

	g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped	A: DOT Tr	Y/N
Primary	33' 9"				N	N		D: Pedestrian Only 9.5'					
Primary	31' 6"				N	N							
Transformer	27' 7"				N	N							
Secondary	27' 2"				N	N							
Neutral	26' 2"				N	N							
Secondary	25' 4"				N	N							
Secondary	24' 6"				N	N							
Streetlight	22' 10"				N	N							
Communication		21' 2"			N	N							
Communication	21' 2"	19' 11"		40	N	N							
Communication	19' 11"	18' 11"	12' 9"		N	N							
Primary	33' 0"				Y	N		D: Pedestrian Only 9.5'					
Primary	32' 8"				Y	N							
Primary	31' 3"				Y	N							
Down Guy	31' 1"				Y	N							
Down Guy	31' 0"				Y	N							
Secondary	26' 7"				Y	N							
Secondary	26' 5"				Y	N							
Neutral	25' 8"				Y	N							
Neutral	25' 4"				Y	N							
Secondary	24' 10"				Y	N							
Secondary	24' 8"				Y	N							
Secondary	24' 1"				Y	N							
Secondary	23' 9"				Y	N							
Streetlight	22' 2"				Y	N							
Streetlight Drip Loop	21' 10"				Y	N							
Communication		20' 3"			Y	N							
Communication		19' 11"			Y	N							
Communication	20' 9"	19' 4"			Y	N							
Communication	20' 3"	18' 11"			Y	N							
Communication	19' 4"	18' 3"			Y	N							
Communication	18' 11"	17' 11"		36	Y	N							
Communication	18' 6"	16' 11"	16' 3"		Y	N							
Primary	27' 11"				Y	N		D: Pedestrian Only 9.5'					

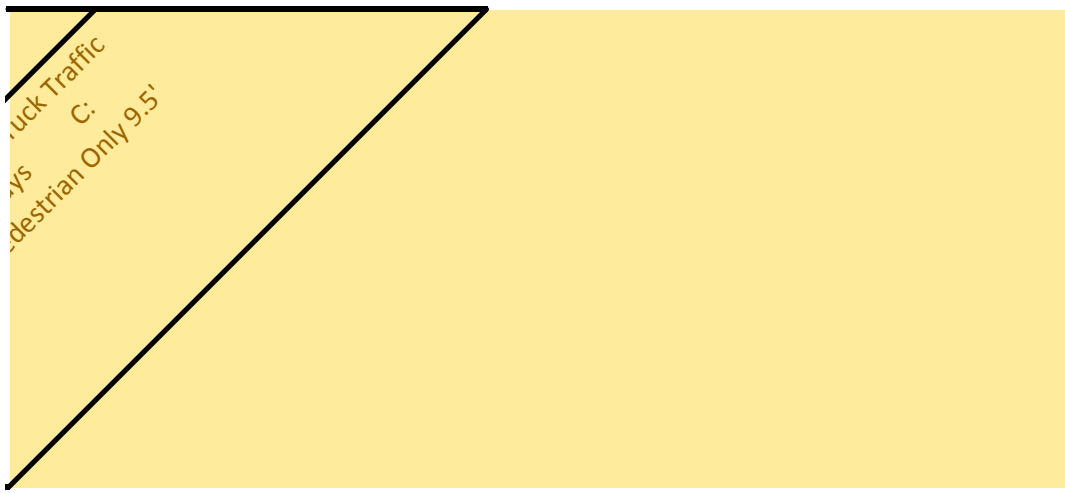
Secondary	26' 1"			Y	N	
Neutral	24' 11"			Y	N	
Neutral	24' 10"			Y	N	
Secondary	24' 2"			Y	N	
Secondary	23' 7"			Y	N	
Secondary Drip Loop	22' 7"			Y	N	
Communication		19'0"		Y	N	
Communication	19' 11"	18'0"	91	Y	N	
Communication	18' 0"	17'0"	19' 5"	Y	N	
Primary	34' 6"			Y	N	D: Pedestrian Only 9.5'
Primary	34' 0"			Y	N	
Primary	33' 9"			Y	N	
Secondary	28' 11"			Y	N	
Neutral	28' 0"			Y	N	
Neutral	27' 8"			Y	N	
Secondary	27' 0"			Y	N	
Secondary	26' 1"			Y	N	
Secondary Riser	23' 5"			Y	N	
Secondary Drip Loop	22' 11"			Y	N	
Communication		19'7"		Y	N	
Communication	20' 7"	18'8"		Y	N	
Communication	18' 8"	17'8"	45	Y	N	
Communication	18' 5"	17'4"	15' 5"	Y	N	
Primary	30' 3"			Y	N	D: Pedestrian Only 9.5'
Secondary	23' 6"			Y	N	
Neutral	22' 2"			Y	N	
Secondary	21' 5"			Y	N	
Secondary	20' 9"			Y	N	
Secondary Drip Loop	20' 6"			Y	N	
Communication		16'11"		Y	N	
Communication	18' 1"	15'11"	38	Y	N	
Communication	16' 11"	14'11"	16' 0"	Y	N	
Primary	30' 3"			N	Y	D: Pedestrian Only 9.5'
Transformer	24' 1"			N	Y	
Secondary	23' 9"			N	Y	
Neutral	23' 8"			N	Y	
Neutral	23' 3"			N	Y	
Secondary	22' 7"			N	Y	
Secondary	21' 10"			N	Y	
Communication		18'6"		N	Y	
Communication	18' 6"	17'7"	27	N	Y	
Communication	17' 7"	16'7"	16' 8"	N	Y	
Primary	32' 0"			Y	N	D: Pedestrian Only 9.5'
Transformer	25' 11"			Y	N	
Secondary	25' 0"			Y	N	

Neutral	23' 9"			Y	N	
Secondary	23' 3"			Y	N	
Secondary	22' 7"			Y	N	
Communication		19'0"		Y	N	
Communication	19' 5"	18'0"	31	Y	N	
Communication	18' 5"	17'0"	16' 10"	Y	N	
Primary	31' 0"			N	N	D: Pedestrian Only 9.5'
Secondary	24' 2"			N	N	
Neutral	23' 0"			N	N	
Secondary	22' 6"			N	N	
Secondary	21' 10"			N	N	
Communication		18'3"		N	N	
Communication	17' 3"		31	N	N	
Communication	16' 3"		17' 6"	N	N	
Primary	31' 10"			N	N	D: Pedestrian Only 9.5'
Secondary	24' 10"			N	N	
Neutral	23' 7"			N	N	
Secondary Riser	23' 1"			N	N	
Secondary	22' 11"			N	N	
Secondary	22' 4"			N	N	
Communication		19'0"		N	N	
Communication	18' 7"	18'0"	39	N	N	
Communication	17' 0"		17' 5"	N	N	
Primary	32' 0"			N	N	D: Pedestrian Only 9.5'
Transformer	24' 8"			N	N	
Secondary	24' 7"			N	N	
Neutral	24' 4"			N	N	
Neutral	23' 10"			N	N	
Secondary Riser	23' 5"			N	N	
Secondary	23' 2"			N	N	
Secondary	22' 6"			N	N	
Communication		18'9"		N	N	
Communication	18' 6"	17'9"	57	N	N	
Communication	16' 9"		14' 8"	N	N	
Primary	31' 1"			N	Y	B:Residential/Over Driveways
OH Guy	30' 1"			N	Y	
Secondary	25' 9"			N	Y	
Neutral	24' 6"			N	Y	
Secondary	23' 10"			N	Y	
Secondary	23' 2"			N	Y	
Communication		18'9"		N	Y	
Communication		18'5"		N	Y	
Communication	17' 7"			N	Y	

Communication	17' 5"			N	Y
Communication	16' 0"		27	N	Y
Communication	15' 8"	21' 2"		N	Y
Primary	33' 9"			Y	Y D: Pedestrian Only 9.5'
Secondary	27' 7"			Y	Y
Neutral	25' 10"			Y	Y
Secondary	25' 0"			Y	Y
Secondary	24' 4"			Y	Y
Communication		20'11"		Y	Y
Communication	21' 5"	19'11"	24	Y	Y
Communication	20' 3"	18'11"	18' 2"	Y	Y
Primary	33' 1"			N	N B:Residential/Over Driveways
Primary	30' 10"			N	N
Secondary	26' 7"			N	N
Neutral	24' 11"			N	N
Secondary	24' 2"			N	N
Secondary Riser	23' 7"			N	N
Secondary	23' 6"			N	N
Secondary	23' 2"			N	N
Communication		19'9"		N	N
Communication	19' 9"	18'9"		N	N
Down Guy	19' 2"	18'9"		N	N
Communication	18' 4"	17'8"	52	N	N
Communication	18' 0"	17'4"	17' 4"	N	N
Primary	32' 1"			N	N D: Pedestrian Only 9.5'
Secondary	26' 9"			N	N
Transformer	26' 9"			N	N
Neutral	25' 7"			N	N
Secondary	24' 11"			N	N
Secondary	24' 1"			N	N
Secondary Riser	23' 3"			N	N
Secondary Drip Loop	22' 8"			N	N
Communication		19'3"		N	N
Communication	19' 3"	18'0"	40	N	N
Communication	18' 0"	17'0"	17' 0"	N	N
Primary	33' 3"			N	N D: Pedestrian Only 9.5'
Transformer	27' 3"			N	N
Neutral	26' 4"			N	N
Neutral	25' 3"			N	N
Secondary	24' 9"			N	N
Secondary	24' 3"			N	N
Communication		20'9"		N	N
Communication	20' 9"	19'7"	34	N	N

Communication	19' 7"	18'7"	19' 0"		N	N	
Primary	31' 11"				N	Y	D: Pedestrian Only 9.5'
Secondary	25' 2"				N	Y	
Neutral	24' 2"				N	Y	
Secondary	23' 6"				N	Y	
Secondary	22' 9"				N	Y	
Communication		19'5"			N	Y	
Communication	19' 5"	18'6"		22	N	Y	
Communication	18' 6"	17'6"	18' 11"		N	Y	
Primary	33' 11"				Y	Y	D: Pedestrian Only 9.5'
Transformer	28' 5"				Y	Y	
Secondary	26' 11"				Y	Y	
Secondary	26' 7"				Y	Y	
Neutral	25' 6"				Y	Y	
Secondary	24' 10"				Y	Y	
Secondary Riser	24' 10"				Y	Y	
Secondary	24' 2"				Y	Y	
Secondary Drip Loop	23' 6"				Y	Y	
Streetlight	22' 7"				Y	Y	
Communication		20'2"			Y	Y	
Communication	21' 6"	19'2"		24	Y	Y	
Communication	20' 7"	18'2"	18' 1"		Y	Y	
Primary	33' 11"				Y	N	D: Pedestrian Only 9.5'
Secondary	27' 1"				Y	N	
Neutral	26' 1"				Y	N	
Secondary	25' 5"				Y	N	
Secondary	24' 8"				Y	N	
Communication		21'3"			Y	N	
Communication	21' 7"	20'3"		32	Y	N	
Communication	20' 3"	19'3"	19' 2"		Y	N	
Primary	34' 1"				Y	N	D: Pedestrian Only 9.5'
Transformer	26' 4"				Y	N	
Secondary	25' 5"				Y	N	
Secondary	25' 0"				Y	N	
Neutral	24' 2"				Y	N	
Secondary	23' 6"				Y	N	
Secondary	23' 1"				Y	N	
Communication		19'9"			Y	N	
Communication	20' 5"	18'9"		29	Y	N	
Communication	19' 3"	17'9"	17' 10"		Y	N	
Primary	37' 10"				N	N	D: Pedestrian Only 9.5'
Transformer	31' 3"				N	N	

Secondary	31' 1"			N	N	
Neutral	30' 3"			N	N	
Secondary	29' 6"			N	N	
Secondary	28' 11"			N	N	
Communication		25'7"		N	N	
Communication	24' 11"	24'8"		N	N	
Communication	23' 9"		41	N	N	
Communication	23' 8"		23' 7"	N	N	
Primary	31' 6"			Y	N	D: Pedestrian Only 9.5'
Secondary	25' 0"			Y	N	
Neutral	24' 0"			Y	N	
Secondary	23' 5"			Y	N	
Secondary	22' 7"			Y	N	
Secondary Drip Loop	22' 1"			Y	N	
Communication		18'9"		Y	N	
Communication	18' 9"	17'9"	51	Y	N	
Communication	18' 2"	16'9"	20' 8"	Y	N	
Primary	33' 11"			N	N	D: Pedestrian Only 9.5'
Transformer	26' 6"			N	N	
Secondary	26' 2"			N	N	
Neutral	25' 9"			N	N	
Neutral	25' 2"			N	N	
Secondary	24' 6"			N	N	
Secondary	23' 9"			N	N	
OH Guy	23' 5"			N	N	
Communication		20'4"		N	N	
Communication	20' 4"	19'3"	47	N	N	
Communication	19' 3"	18'3"	17' 8"	N	N	
Primary	32' 6"			Y	N	B:Residential/Over Driveways
Secondary	26' 3"			Y	N	
Neutral	25' 1"			Y	N	
Neutral	24' 9"			Y	N	
Secondary	24' 1"			Y	N	
Secondary	23' 5"			Y	N	
OH Guy	23' 4"			Y	N	
Communication		20'1"		Y	N	
Communication		19'9"		Y	N	
Communication	20' 7"	19'0"	N/A	Y	N	
Communication	19' 3"	18'0"	21' 9"	Y	N	
Secondary Riser	23' 8"			Y	Y	D: Pedestrian Only 9.5'
Secondary	23' 4"			Y	Y	
Secondary Drip Loop	22' 11"			Y	Y	
Communication		19'7"		Y	Y	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #:

LX167-04W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # LAUREN SANDEFUR 812-213-1328
EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

LSandefur 3-19-18

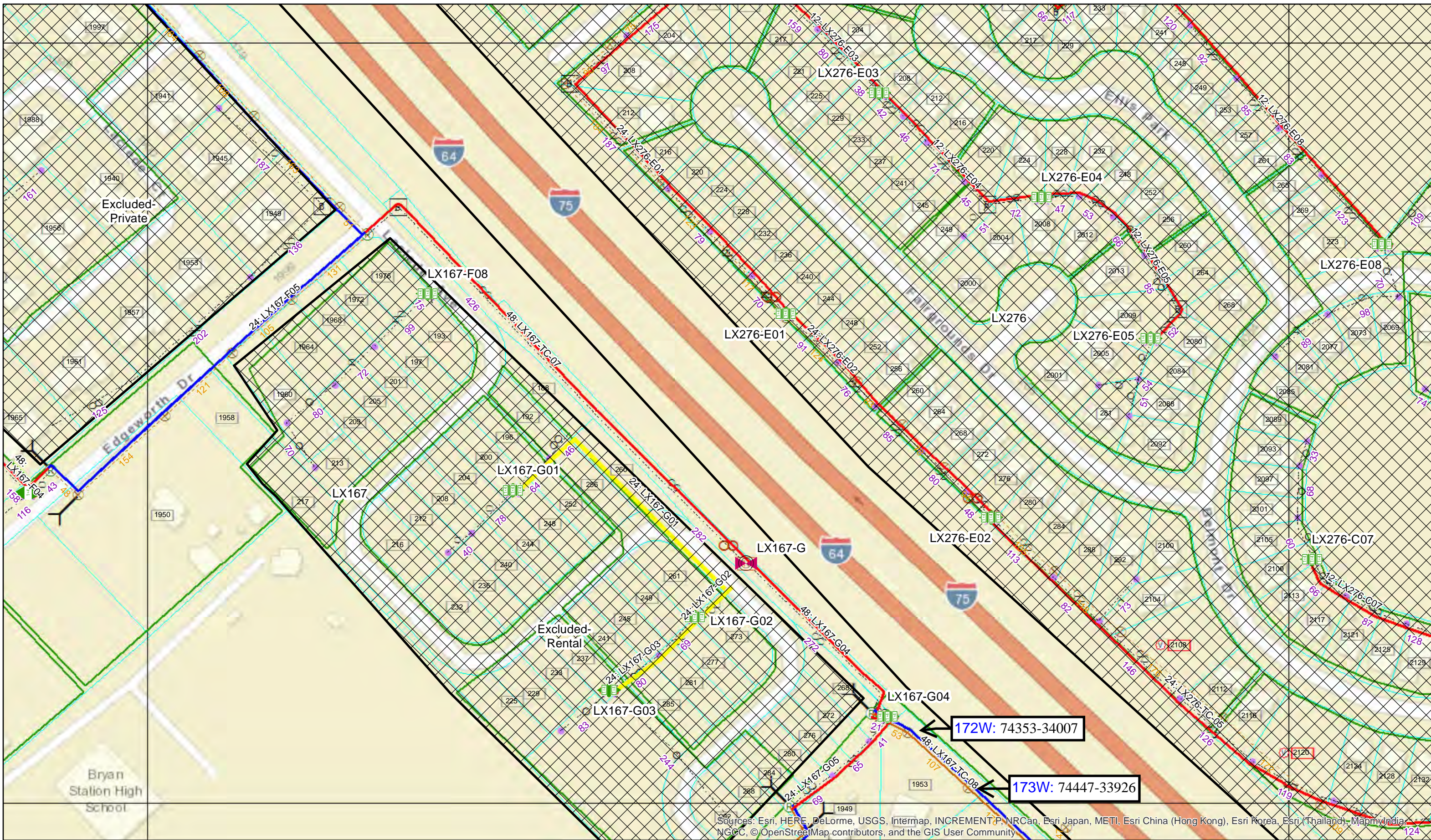
By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	74203-33862	171W	1945 WICKLAND DR, Lexington, KY 40505	40/3, WXM	19'11"	19'11"	22'10"	(1)Fiber/Strand			
2	74353-34007	172W	1951 WICKLAND DR, Lexington, KY 40505	40/3, WXM	19'4"	19'1"	21'10"	(2)Fiber/Strand			
3	74447-33926	173W	1954 WICKLAND DR, Lexington, KY 40505	35/5, WXM	18'0"	17'6"	22'7"	(1)Fiber/Strand			
4	74574-33815	174W	1955 SPRING STATION DR, Lexington, KY	45/4, WXM	18'8"	N/A	22'11"	(1)Fiber/Strand			
5	74491-33737	175W	1951 SPRING STATION DR, Lexington, KY	35/5, WXM	16'11"	16'11"	20'6"	(1)Fiber/Strand			
6	74397-33648	176W	1946 WICKLAND DR, Lexington, KY 40505	35/5, WXM	17'7"	16'8"	21'10"	(1)Fiber/Strand			
7	74314-33570	177W	1940 WICKLAND DR, Lexington, KY 40505	40/4, WXM	18'5"	18'7"	22'7"	(1)Fiber/Strand			
8	74233-33497	178W	1930 WICKLAND DR, Lexington, KY 40505	40/4, WXM	16'3"	16'2"	21'10"	(1)Fiber/Strand			
9	74252-33414	179W	1922 WICKLAND DR, Lexington, KY 40505	40/4, WXM	17'0"	N/A	22'4"	(1)Fiber/Strand			
10	74058-33325	180W	1914 WICKLAND DR, Lexington, KY 40505	40/4, WXM	16'9"	17'10"	22'6"	(1)Fiber/Strand			
11	73998-33233	181W	1907 SPRING STATION DR, Lexington, KY	40/4, WXM	16'0"	N/A	23'2"	(2)Fiber/Strand			
12	75135-33087	182W	1904 SPRING STATION DR, Lexington, KY	40/4, WXM	20'3"	N/A	24'4"	(1)Fiber/Strand			
13	74204-33015	183W	1905 GLENGARRY WAY, Lexington, KY 40	40/4, WXM	18'4"	18'10"	23'2"	(1)Fiber/Strand			
14	74256-33106	184W	1908 SPRING STATION DR, Lexington, KY	40/4, WXM	18'0"	18'0"	22'8"	(1)Fiber/Strand			
15	74338-34198	185W	1916 SPRING STATION DR, Lexington, KY	40/4, WXM	19'7"	19'7"	24'3"	(1)Fiber/Strand			
16	74433-33283	186W	1925 GLENGARRY WAY, Lexington, KY 40	40/4, WXM	18'6"	18'4"	22'9"	(1)Fiber/Strand			
17	74517-33969	187W	1932 SPRING STATION DR, Lexington, KY	40/4, WXM	20'7"	20'5"	22'7"	(1)Fiber/Strand			
18	74700-33705	188W	1981 SPRING STATION DR, Lexington, KY	40/4, WXM	20'3"	20'0"	24'8"	(1)Fiber/Strand			
19	74793-33623	189W	1989 SPRING STATION DR, Lexington, KY	40/4, WXM	19'3"	18'11"	23'1"	(1)Fiber/Strand			

20	75209-33188	190W	405 SPRING STATION CIR, Lexington, KY	45/3, WXM	23'9"	23'9"	28'11"		(1)Fiber/Strand			
21	75257-33304	191W	2001 SPRING STATION DR, Lexington, KY	40/4, WXM	18'2"	17'6"	22'1"		(1)Fiber/Strand			
22	75073-33378	192W	1993 SPRING STATION DR, Lexington, KY	40/4, WXM	19'3"	19'6"	23'9"		(1)Fiber/Strand			
23	74984-33456	193W	1985 SPRING STATION DR, Lexington, KY	40/4, WXM	19'3"	18'8"	23'5"		(2)Fiber/Strand			
24	74863-33316	194W	1988 SPRING STATION DR, Lexington, KY	30/5, WXM	22'0"	N/A	22'11"		(1)Fiber/Strand			
25	74815-33230	195W	1938 GLENGARRY WAY, Lexington, KY	40/4, WXM	18'6"	N/A	23'2"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXBN36

PROJECT NUMBER:
LXTNXY.00437.CB

DATE
12/11/2017

USER NAME:
argis

DESIGN ENG

STAKING GRID DRAWING

ROUTE: LX167 REV0
PROJECT: LEXINGTON CITY BUILD
LOCATION: LEXINGTON, KY

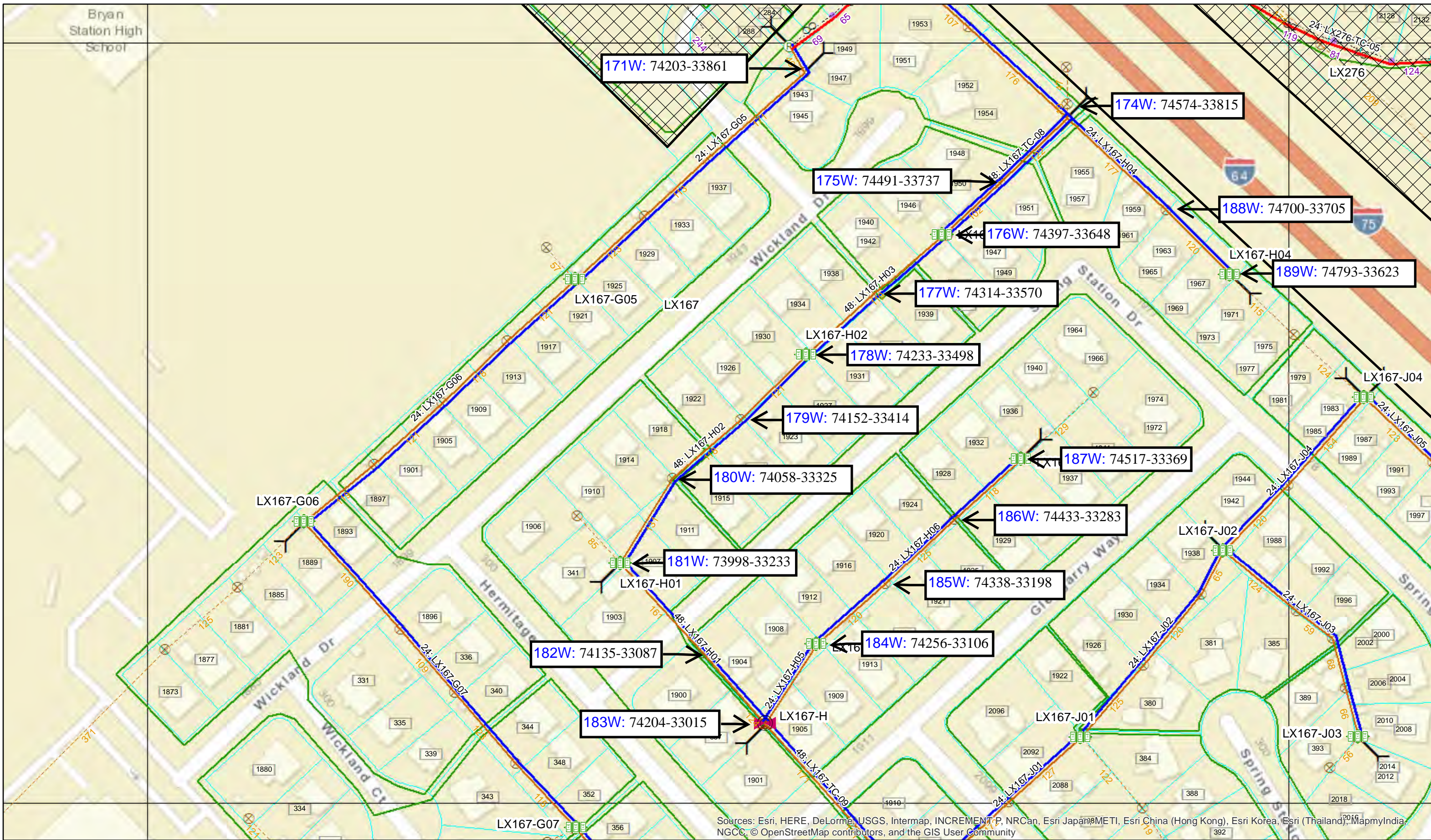
REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET

3701 Communications Way
Evansville, In 47715

WIN6430



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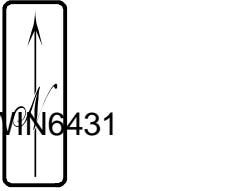
LXBM36
 PROJECT NUMBER:
 LXTNXY00437.CB
 DATE: 12/11/2017
 USER NAME: argris
 DESIGN ENG

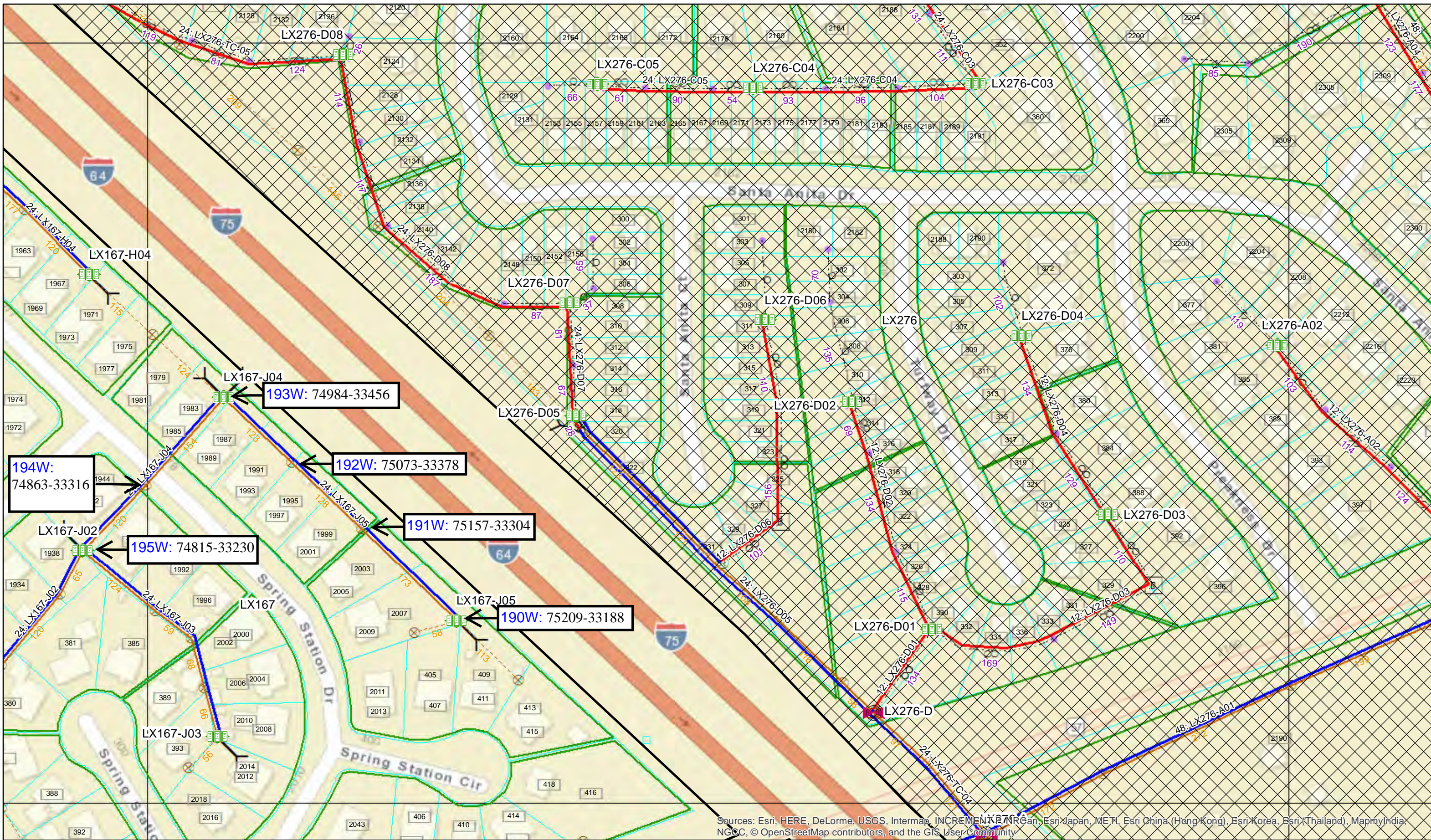
STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715





LXBM37

DESIGN ENG
 USER NAME: arjalis
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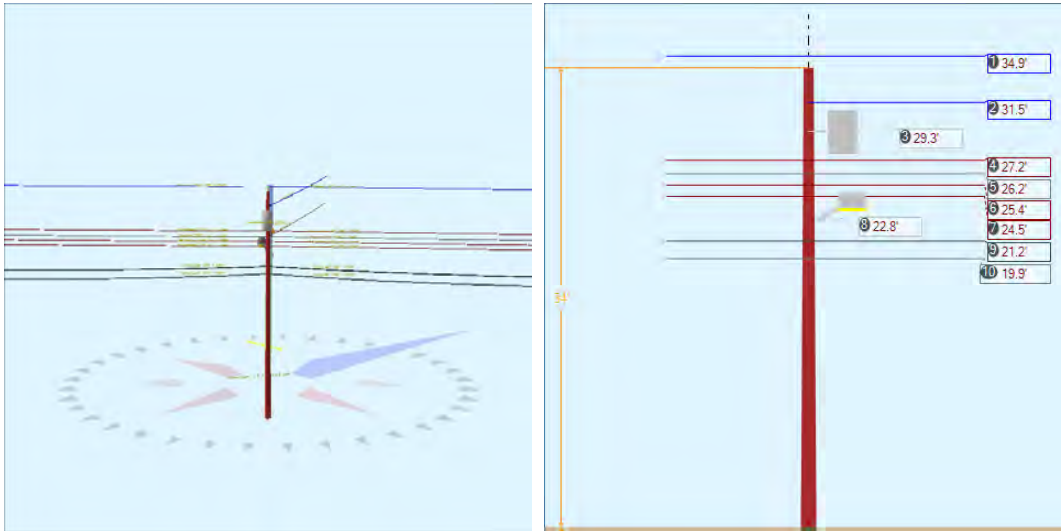
3701 Communications Way
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WIN6432

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND																																																					
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Pole Num:	171W - 74203-33862	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069263 Deg	Longitude:	-84.450346 Deg	Elevation:	877.849404156811		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.9	0.0
Groundline	44.9	0.0
Vertical	13.3	21.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,170	320.8
Groundline	37,170	320.8
GL Allowable	83,821	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	864	55.7	24,559	66.1	29.3	1,989	625	6	1,995	29.3
Comms	431	27.8	8,403	22.6	10.0	681	785	8	688	10.1
PowerEquipments	42	2.7	12	0.0	0.0	1	694	7	8	0.1
Pole	186	12.0	3,235	8.7	3.9	262	1,898	18	280	4.1
Streetlights	20	1.3	676	1.8	0.8	55	86	1	56	0.8
Insulators	9	0.6	286	0.8	0.3	23	65	1	24	0.3
Pole Load	1,552	100.0	37,170	100.0	44.3	3,010	4,151	40	3,051	44.9
Pole Reserve Capacity			46,651		55.7	3,790			3,749	55.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	935	60.2	25,544	68.7	30.5	2,069	1,450	14	2,083	30.6
Unknown, COMMUNICATION	431	27.8	8,392	22.6	10.0	680	804	8	687	10.1
Pole	186	12.0	3,235	8.7	3.9	262	1,898	18	280	4.1
Totals:	1,552	100.0	37,170	100.0	44.3	3,010	4,151	40	3,051	44.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.92	0.00	0.3980	0.65	0.145	188.5	47.9	188.5	2,128	3,768	0	1,722	5,491
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.92	0.00	0.3980	0.56	0.145	175.0	228.4	175.0	2,128	-3,120	0	1,600	-1,521
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.48	16.57	0.3980	0.02	0.145	40.4	331.0	40.4	150	4,647	4	13	4,664
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.20	6.58	0.3980	0.65	0.145	188.5	47.9	188.5	2,128	2,934	34	1,341	4,309
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.20	6.58	0.3980	0.56	0.145	175.0	228.4	175.0	2,128	-2,429	32	1,245	-1,152
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.18	6.64	0.3980	0.65	0.145	188.5	47.9	188.5	2,128	2,825	34	1,291	4,150
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.18	6.64	0.3980	0.56	0.145	175.0	228.4	175.0	2,128	-2,339	32	1,199	-1,108

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.18	6.64	0.3980	0.02	0.145	40.4	331.0	40.4	150	3,866	7	11	3,883
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.36	6.69	0.3980	0.65	0.145	188.5	47.9	188.5	2,128	2,735	35	1,250	4,020
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.36	6.69	0.3980	0.56	0.145	175.0	228.4	175.0	2,128	-2,265	32	1,161	-1,072
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.52	6.74	0.3980	0.65	0.145	188.5	47.9	188.5	2,128	2,645	35	1,209	3,888
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.52	6.74	0.3980	0.56	0.145	175.0	228.4	175.0	2,128	-2,190	32	1,123	-1,035
Totals:											11,076	277	13,164	24,517	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.20	6.94	1.3300	2.89	0.337	188.5	47.9	188.5	925	994	-86	2,130	3,039
CATV	CATV 1.0	Unknown, COMMUNICATION	21.20	6.94	1.3300	2.62	0.337	175.0	228.4	175.0	925	-823	-80	1,979	1,076
Telco	TELE 1.5	Unknown, COMMUNICATION	19.92	7.02	1.5000	3.43	0.900	188.5	47.9	188.6	2,000	2,019	-151	2,187	4,055
Telco	TELE 1.5	Unknown, COMMUNICATION	19.92	7.02	1.5000	3.10	0.900	175.0	228.4	175.1	2,000	-1,672	-140	2,031	219
Totals:											518	-457	8,327	8,388	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.32	20.95	140.0	140.0	365.00	39.00	--	22.00	--	-1,210	1,222	12
Totals:											-1,210	1,222	12	

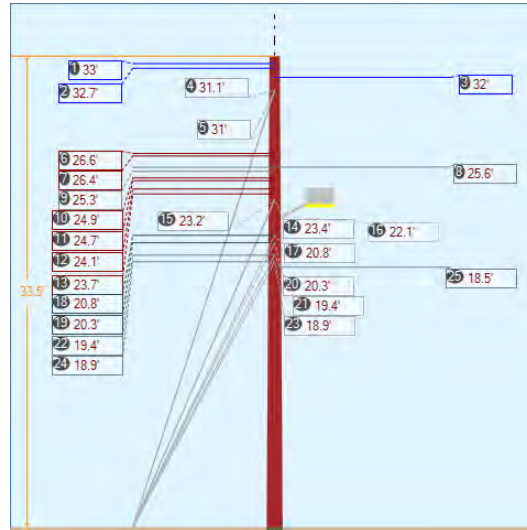
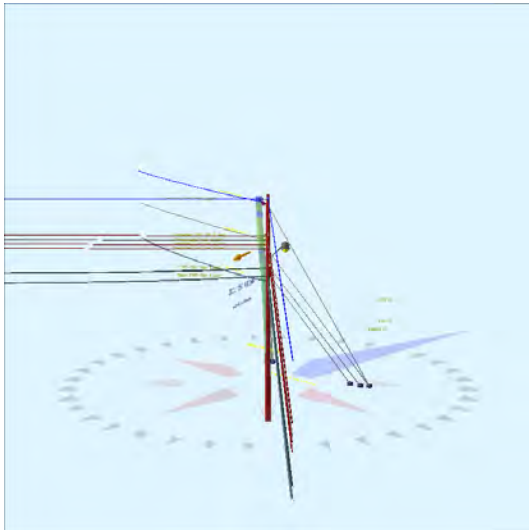
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	22.79	4.35	300.0	300.0	45.00	24.00	20.00	3.00	36.00	224	452	675
Totals:											224	452	675	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.04	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.48	0.00	331.0	331.0	3.00	3.80	12.75	8	74	82

Spool	Spool Insulator - 25 kV	KU, UTILITY	27.20	0.00	318.1	228.1	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.18	0.00	318.2	228.2	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.36	0.00	318.1	228.1	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.52	0.00	318.1	228.1	2.00	3.00	3.19	2	11	14
Bolt	Three Bolt	Unknown, COMMUNICATION	21.20	0.00	138.1	228.1	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.92	0.00	138.1	228.1	5.00	3.00	0.00	-6	0	-6
Totals:										5	280	285

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.45	33.42	10.59	15.30	7.32	11.47	1.60e+6	60.00	57.00	34.04	31,284	312.08	7.52

Pole Num:	172W - 74353-34007	Pole Length / Class:	40 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.47	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069613 Deg	Longitude:	-84.449871 Deg	Elevation:	886.724832494334		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	47.9	26.3
Groundline	13.6	0.0
Vertical	46.6	25.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,216	3.5
Groundline	11,126	184.0
GL Allowable	82,473	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	16.2	317.5		85.1	155.6	85.2	140.0
? EHS 3/8 (Down)			31.1	75.0	155.6	82.5	140.0
? EHS 3/8 (Down)			23.2	78.9	155.6	86.9	140.0
? Single Helix Anchor	17.7	47.3		80.1	155.6	81.3	220.0
? EHS 3/8 (Down)			31.0	70.5	155.6	78.6	220.0
? EHS 3/8 (Down)			23.4	74.2	155.6	83.0	220.0
? Single Helix Anchor	16.1	46.8		20.6	155.6	21.0	220.0
? EHS 1/4 (Down)			20.8	68.8	155.6	77.1	220.0
? Single Helix Anchor	15.4	318.3		41.5	155.6	41.6	140.0
? EHS 1/4 (Down)			20.3	71.8	155.6	79.1	140.0
? EHS 1/4 (Down)			18.9	67.0	155.6	73.8	140.0
? Single Helix Anchor	14.4	41.8		20.8	155.6	21.2	220.0
? EHS 1/4 (Down)			19.4	69.6	155.6	77.9	220.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 184.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	18,954	1080.1	96,773	869.8	117.3	41,730	519	5	41,735	613.7
Comms	5,281	301.0	19,855	178.5	24.1	8,562	705	7	8,569	126.0
GuyBraces	-22,673	-1292.1	-106,134	-953.9	-128.7	-45,766	72,558	711	-45,056	-662.6
Pole	161	9.2	526	4.7	0.6	227	1,856	18	245	3.6
Streetlights	17	1.0	28	0.3	0.0	12	86	1	13	0.2
Insulators	14	0.8	78	0.7	0.1	34	207	2	36	0.5
Pole Load	1,755	100.0	11,126	100.0	13.5	4,798	75,930	744	5,541	81.5
Pole Reserve Capacity			71,347		86.5	2,002			1,259	18.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 184.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	3,597	205.0	18,362	165.0	22.3	7,918	53,448	523	8,441	124.1
Unknown, COMMUNICATION	-2,003	-114.1	-7,762	-69.8	-9.4	-3,347	20,626	202	-3,145	-46.3
Pole	161	9.2	526	4.7	0.6	227	1,856	18	245	3.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,755	100.0	11,126	100.0	13.5	4,798	75,930	744	5,541	81.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.99	16.44	0.3980	0.16	0.145	106.8	133.7	106.8	2,128	58,275	7	265	58,548
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.67	20.84	0.3980	0.63	0.145	188.5	227.9	188.5	2,128	65,135	14	1,065	66,214
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.01	26.05	0.3980	0.04	0.145	49.5	284.5	49.5	150	-1,136	-6	318	-824
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.61	6.58	0.3980	0.16	0.145	106.8	133.7	106.8	2,128	46,997	12	214	47,223
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.43	6.59	0.3980	0.63	0.145	188.5	227.9	188.5	2,128	52,695	25	861	53,581
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.63	6.64	0.3980	0.63	0.145	188.5	227.9	188.5	2,128	51,105	25	835	51,965
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.63	6.64	0.3980	0.04	0.145	49.5	284.5	49.5	150	-909	-2	254	-657
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.34	6.66	0.3980	0.16	0.145	106.8	133.7	106.8	2,128	44,755	12	204	44,971
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.85	6.69	0.3980	0.63	0.145	188.5	227.9	188.5	2,128	49,553	25	810	50,388
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.66	6.70	0.3980	0.16	0.145	106.8	133.7	106.8	2,128	43,555	13	198	43,766
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.08	6.74	0.3980	0.63	0.145	188.5	227.9	188.5	2,128	48,009	25	785	48,819
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.73	6.76	0.3980	0.16	0.145	106.8	133.7	106.8	2,128	41,916	13	191	42,119
Totals:											499,950	162	6,000	506,112	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	20.78	6.94	1.3300	2.88	0.337	188.5	227.9	188.5	925	18,007	62	1,380	19,449
CATV	CATV 1.0	Unknown, COMMUNICATION	20.26	6.97	1.3300	1.41	0.337	106.8	133.7	106.8	925	15,559	31	332	15,922
Telco	TELE 1.5	Unknown, COMMUNICATION	19.37	7.02	1.5000	3.42	0.900	188.5	227.9	188.6	2,000	36,306	109	1,406	37,821
Telco	TELE 1.5	Unknown, COMMUNICATION	18.90	7.05	1.5000	1.64	0.900	106.8	133.7	106.8	2,000	31,384	55	338	31,777
Telco	TELE 1.5	Unknown, COMMUNICATION	18.51	7.07	1.5000	0.69	0.900	49.5	284.5	49.5	350	-1,532	-7	409	-1,130
Totals:											99,723	250	3,866	103,839	

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	22.13	4.35	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-239	386	148
Totals:											-239	386	148	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.99	0.00	133.7	133.7	3.00	3.80	12.75	5	68	73
Deadend	Deadend 17.13"	KU, UTILITY	32.67	0.00	227.9	227.9	3.00	3.90	17.13	7	93	100
Davit	Insulator, 15 kV	KU, UTILITY	31.26	0.00	284.5	284.5	60.00	5.00	24.00	-45	160	116
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.61	0.00	133.7	133.7	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.43	0.00	227.9	227.9	2.00	3.00	3.19	2	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.63	0.00	227.9	227.9	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.63	0.00	286.0	196.0	2.00	3.00	3.19	0	10	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.34	0.00	133.7	133.7	2.00	3.00	3.19	1	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.85	0.00	227.9	227.9	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.66	0.00	133.7	133.7	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.08	0.00	227.9	227.9	2.00	3.00	3.19	2	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.73	0.00	133.7	133.7	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.78	0.00	227.9	227.9	5.00	3.00	0.00	4	0	4

Bolt	Single Bolt	Unknown, COMMUNICATION	20.26	0.00	133.7	223.7	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	19.37	0.00	227.9	227.9	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	18.90	0.00	133.7	223.7	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	18.51	0.00	284.5	374.5	5.00	3.00	0.00	-1	0	-1
Totals:										-8	415	407

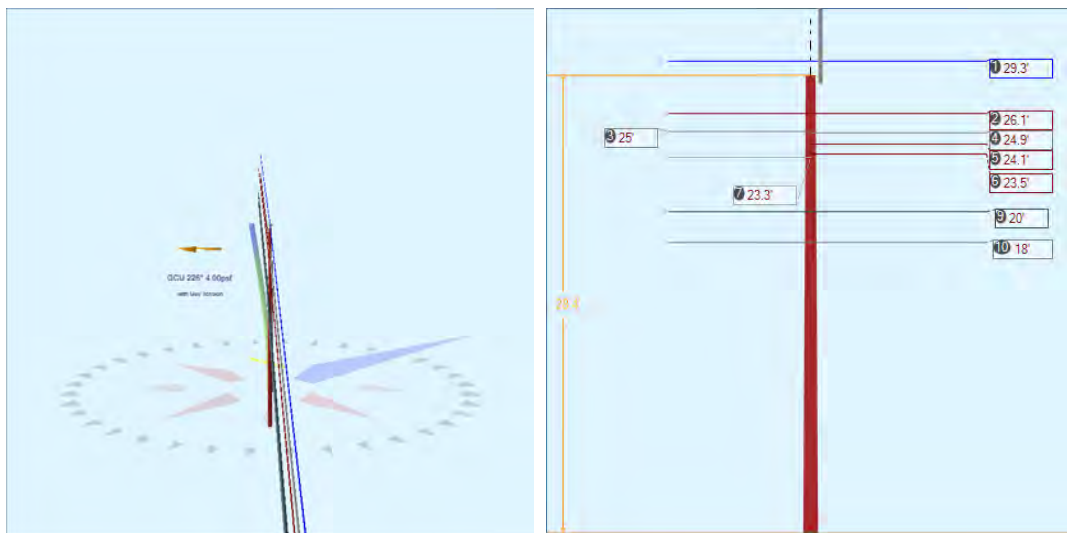
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	31.12	0.00	16.15	0.375	75.00	317.5	62.3	0.273	33.42	2.19
EHS 3/8	Down	KU, UTILITY	23.24	0.00	16.15	0.375	75.00	317.5	55.0	0.273	26.60	1.83
EHS 3/8	Down	KU, UTILITY	31.01	0.00	17.68	0.375	75.00	47.3	60.1	0.273	34.04	2.10
EHS 3/8	Down	KU, UTILITY	23.35	0.00	17.68	0.375	75.00	47.3	52.7	0.273	27.58	1.79
EHS 1/4	Down	Unknown, COMMUNICATION	20.78	0.00	16.09	0.25	75.00	46.8	52.1	0.121	24.55	1.43
EHS 1/4	Down	Unknown, COMMUNICATION	20.26	0.00	15.44	0.25	75.00	318.3	52.5	0.121	23.75	1.45
EHS 1/4	Down	Unknown, COMMUNICATION	18.90	0.00	15.44	0.25	75.00	318.3	50.6	0.121	22.67	1.29
EHS 1/4	Down	Unknown, COMMUNICATION	19.37	0.00	14.43	0.25	75.00	41.8	53.1	0.121	22.43	1.32

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,438	10,398	10,388	9,202	4,822	-3,316	-100,781
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,043	10,949	10,934	8,958	6,270	-4,312	-98,208
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,892	9,902	9,777	8,476	4,874	-3,546	-107,603
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,500	10,455	10,287	8,182	6,236	-4,537	-104,030
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,617	4,197	4,117	3,247	2,531	-1,858	-37,823
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,732	4,302	4,295	3,408	2,614	-1,825	-36,246
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,417	4,016	4,009	3,097	2,545	-1,777	-32,959
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,660	4,237	4,165	3,332	2,499	-1,976	-37,420
Totals:										47,901	32,392	-23,147	-555,070

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	16.15	317.5	25,000	1.00	25,000	21,303	21,279	85.2
Single Helix Anchor		18.00	17.68	47.3	25,000	1.00	25,000	20,314	20,022	81.3
Single Helix Anchor		18.00	16.09	46.8	20,000	1.00	20,000	4,197	4,117	21.0
Single Helix Anchor		18.00	15.44	318.3	20,000	1.00	20,000	8,316	8,303	41.6
Single Helix Anchor		18.00	14.43	41.8	20,000	1.00	20,000	4,237	4,165	21.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.39	34.07	10.35	41.03	7.32	11.41	1.60e+6	60.00	57.00	33.53	162,873	1629.41	2.15

Pole Num:	173W - 74447-33926	Pole Length / Class:	35 / 5	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	28.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069418 Deg	Longitude:	-84.449605 Deg	Elevation:	874.702554440794		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	46.1	0.0 226.3
Groundline	46.1	0.0 226.3
Vertical	1.4	17.9 313.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,571	243.4 226.3
Groundline	19,571	243.4 226.3
GL Allowable	42,907	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	179.3	133.9		26.8	226.3	27.3	310.0
? EHS 3/8 (Span/Head)			23.3	38.7	226.3	43.3	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 243.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,157	253.2	52,235	266.9	121.7	8,257	353	5	8,262	121.5
Comms	313	36.8	6,245	31.9	14.6	987	618	9	996	14.7
GuyBraces	-1,752	-205.7	-40,989	-209.4	-95.5	-6,479	42	1	-6,478	-95.3
Pole	121	14.2	1,797	9.2	4.2	284	1,039	16	300	4.4
Risers	6	0.7	89	0.5	0.2	14	44	1	15	0.2
Insulators	7	0.8	194	1.0	0.5	31	63	1	32	0.5
Pole Load	852	100.0	19,571	100.0	45.6	3,094	2,157	33	3,126	46.0
Pole Reserve Capacity			23,336		54.4	3,707			3,674	54.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 243.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	418	49.0	11,520	58.9	26.9	1,821	482	7	1,828	26.9
Unknown, COMMUNICATION	313	36.8	6,254	32.0	14.6	989	637	10	998	14.7
Pole	121	14.2	1,797	9.2	4.2	284	1,039	16	300	4.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	852	100.0	19,571	100.0	45.6	3,094	2,157	33	3,126	46.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.33	0.00	0.3980	0.59	0.145	179.3	133.9	179.3	2,128	-27,100	0	1,298	-25,802
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.33	0.00	0.3980	0.21	0.145	106.8	313.7	106.8	2,128	27,367	0	772	28,138
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.06	5.66	0.3980	0.59	0.145	179.3	133.9	179.3	2,128	-24,070	26	1,153	-22,891
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.06	5.66	0.3980	0.21	0.145	106.8	313.7	106.8	2,128	24,307	16	686	25,009
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.96	5.72	0.3980	0.59	0.145	179.3	133.9	179.3	2,128	-23,048	-9	1,104	-21,954
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.86	5.72	0.3980	0.21	0.145	106.8	313.7	106.8	2,128	23,185	6	654	23,845

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.15	5.76	0.3980	0.21	0.145	106.8	313.7	106.8	2,128	22,524	6	635	23,165
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.55	5.79	0.3980	0.21	0.145	106.8	313.7	106.8	2,128	21,962	6	619	22,587
Totals:											45,127	50	6,920	52,097	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.95	5.99	1.3300	2.70	0.337	179.3	133.9	179.4	925	-8,010	66	1,798	-6,145
CATV	CATV 1.0	Unknown, COMMUNICATION	19.95	5.99	1.3300	1.43	0.337	106.8	313.7	106.8	925	8,089	40	1,069	9,198
Telco	TELE 1.5	Unknown, COMMUNICATION	18.04	6.10	1.5000	3.20	0.900	179.3	133.9	179.4	2,000	-15,658	118	1,777	-13,763
Telco	TELE 1.5	Unknown, COMMUNICATION	18.04	6.10	1.5000	1.65	0.900	106.8	313.7	106.8	2,000	15,812	70	1,057	16,939
Totals:											233	294	5,702	6,229	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 35.0°	Riser	KU, UTILITY	22.98	4.73	35.0	35.0	22.98	275.71	2.50	2.50	275.71	-8	96	89
Totals:											-8	96	89	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	28.45	0.00	0.0	0.0	13.00	9.00	10.50	0	127	127
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.06	0.00	223.8	133.8	2.00	3.00	3.19	2	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.96	0.00	133.9	133.9	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.86	0.00	313.7	313.7	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.15	0.00	313.7	313.7	2.00	3.00	3.19	1	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.55	0.00	313.7	313.7	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	19.95	0.00	223.9	133.9	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	18.04	0.00	223.9	133.9	5.00	3.00	0.00	5	0	5
Totals:										12	182	194

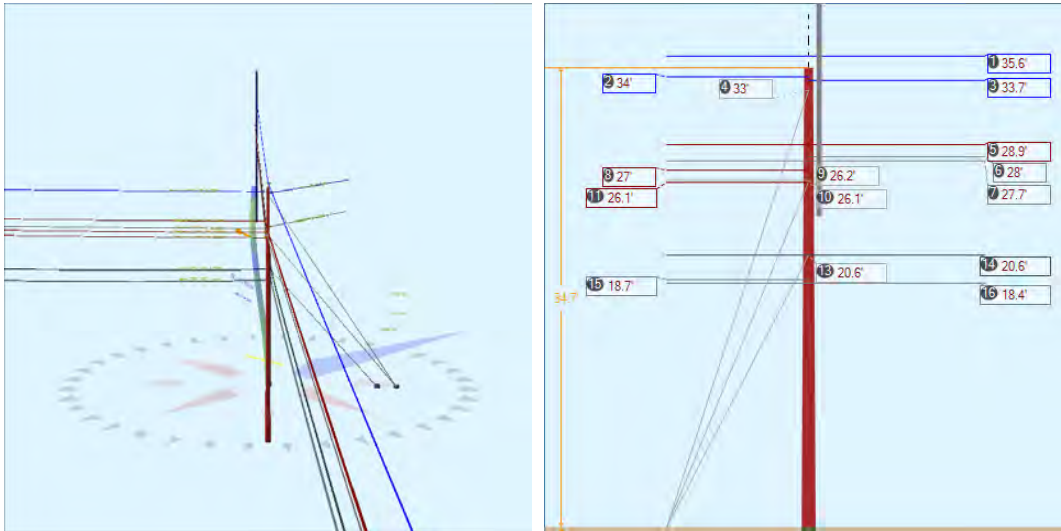
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.33	23.33	179.32	0.375	75.00	133.9	0.0	0.273	177.55	6.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,996	5,451	5,368	0	5,368	-1,795	-40,881
Totals:										0	5,368	-1,795	-40,881

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	179.32	133.9	20,000	1.00	20,000	5,451	5,368	27.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	17.89	33.21	8.52	6.02	6.05	9.18	1.60e+6	60.00	57.00	28.45	150,599	1540.93	71.43

Pole Num:	174W - 74574-33815	Pole Length / Class:	45 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	10.29	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.46	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.069082 Deg	Longitude:	-84.449147 Deg	Elevation:	863.479326636611		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.8	292.7
Groundline	27.2	198.6
Vertical	29.7	200.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,225	292.7
Groundline	16,103	198.6
GL Allowable	67,217	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.3	48.0		75.1	292.7	77.5	220.0
? EHS 3/8 (Down)			33.0	55.1	292.7	62.3	220.0
? EHS 3/8 (Down)			26.1	80.6	292.7	91.7	220.0
? Single Helix Anchor	179.3	313.9		17.0	292.7	20.7	140.0
? EHS 3/8 (Span/Head)			26.2	24.5	292.7	32.9	140.0
? Single Helix Anchor	19.0	48.0		25.6	292.7	26.9	220.0
? EHS 1/4 (Down)			20.6	85.6	292.7	98.8	220.0
System Capacity Summary:				Adequate		At Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 193.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	12,537	802.4	157,318	977.0	234.0	35,574	676	8	35,581	523.3
Comms	3,015	192.9	25,903	160.9	38.5	5,857	1,022	11	5,869	86.3
GuyBraces	-13,950	-892.8	-166,799	-1035.8	-248.2	-37,718	28,088	315	-37,402	-550.0
Pole	-29	-1.9	-228	-1.4	-0.3	-52	1,650	19	-33	-0.5
Risers	-8	-0.5	-63	-0.4	-0.1	-14	45	0	-14	-0.2
Insulators	-2	-0.1	-28	-0.2	0.0	-6	101	1	-5	-0.1
Pole Load	1,562	100.0	16,103	100.0	24.0	3,641	31,580	354	3,996	58.8
Pole Reserve Capacity			51,114		76.0	3,159			2,804	41.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 193.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,405	89.9	16,439	102.1	24.5	3,717	23,177	260	3,977	58.5
Unknown, COMMUNICATION	186	11.9	-108	-0.7	-0.2	-24	6,753	76	51	0.8
Pole	-29	-1.9	-228	-1.4	-0.3	-52	1,650	19	-33	-0.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,562	100.0	16,103	100.0	24.0	3,641	31,580	354	3,996	58.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.59	0.00	0.3980	0.43	0.145	175.4	131.8	175.4	2,128	47,211	0	471	47,681
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.59	0.00	0.3980	0.45	0.145	179.3	313.9	179.3	2,128	-50,346	0	521	-49,826
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.01	16.13	0.3980	0.24	0.145	118.7	228.9	118.7	2,128	76,373	9	-554	75,828
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.75	16.15	0.3980	0.01	0.145	22.0	354.6	22.0	450	-18,715	-2	55	-18,663
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.90	6.17	0.3980	0.43	0.145	175.4	131.8	175.4	2,128	38,318	25	382	38,725
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.90	6.17	0.3980	0.24	0.145	118.7	228.9	118.7	2,128	64,884	17	-471	64,430
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.90	6.17	0.3980	0.45	0.145	179.3	313.9	179.3	2,128	-40,863	26	423	-40,414
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.98	6.23	0.3980	0.01	0.145	22.0	354.6	22.0	450	-15,514	-4	45	-15,473
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.66	6.24	0.3980	0.43	0.145	175.4	131.8	175.4	2,128	36,683	26	366	37,075
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.66	6.24	0.3980	0.24	0.145	118.7	228.9	118.7	2,128	62,116	17	-451	61,683
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.66	6.24	0.3980	0.45	0.145	179.3	313.9	179.3	2,128	-39,120	26	405	-38,689
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.97	6.28	0.3980	0.43	0.145	175.4	131.8	175.4	2,128	35,763	14	357	36,134
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.97	6.28	0.3980	0.24	0.145	118.7	228.9	118.7	2,128	60,556	17	-439	60,134
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.06	6.34	0.3980	0.43	0.145	175.4	131.8	175.4	2,128	34,556	15	344	34,915
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.06	6.34	0.3980	0.24	0.145	118.7	228.9	118.7	2,128	58,507	18	-424	58,100
Totals:										350,407	205	1,028	351,640		

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.55	6.65	1.3300	2.59	0.337	175.4	131.8	175.4	925	11,847	-66	554	12,335
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.55	6.65	1.3300	2.66	0.337	179.3	313.9	179.4	925	-12,634	-68	613	-12,090
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.55	6.65	1.3300	1.61	0.337	118.7	228.9	118.7	925	20,061	42	-682	19,421
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.70	6.76	1.5000	1.88	0.900	118.7	228.9	118.7	2,000	39,458	74	-678	38,854
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.43	6.77	1.5000	3.08	0.900	175.4	131.8	175.4	2,000	22,974	-118	543	23,399
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.43	6.77	1.5000	3.18	0.900	179.3	313.9	179.4	2,000	-24,500	-121	601	-24,020
		COMMUNICATION													
Totals:											57,206	-257	949	57,899	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	23.45	5.68	360.0	360.0	23.45	281.35	4.00	4.00	281.35	-10	-130	-140
Totals:											-10	-130	-140	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.71	0.00	0.0	0.0	13.00	9.00	10.50	0	-27	-27
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.01	0.00	228.9	228.9	3.00	3.80	12.75	6	-13	-7
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.75	0.00	354.6	354.6	3.00	3.80	12.75	-7	-13	-20
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.90	0.00	224.9	134.9	2.00	3.00	3.19	2	-2	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.98	0.00	354.6	354.6	2.00	3.00	3.19	-2	-2	-4
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.66	0.00	224.9	134.9	2.00	3.00	3.19	2	-2	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.97	0.00	131.8	131.8	2.00	3.00	3.19	1	-2	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.97	0.00	224.9	134.9	2.00	3.00	3.19	2	-2	0
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.06	0.00	131.8	131.8	2.00	3.00	3.19	1	-2	-1

Spool	Spool Insulator - 25 kV	KU, UTILITY	26.06	0.00	224.9	134.9	2.00	3.00	3.19	2	-2	0
Bolt	Three Bolt	Unknown, COMMUNICATION	20.55	0.00	42.8	312.8	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	20.55	0.00	228.9	318.9	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	18.70	0.00	228.9	318.9	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	18.43	0.00	42.8	312.8	5.00	3.00	0.00	-5	0	-5
Totals:										5	-68	-62

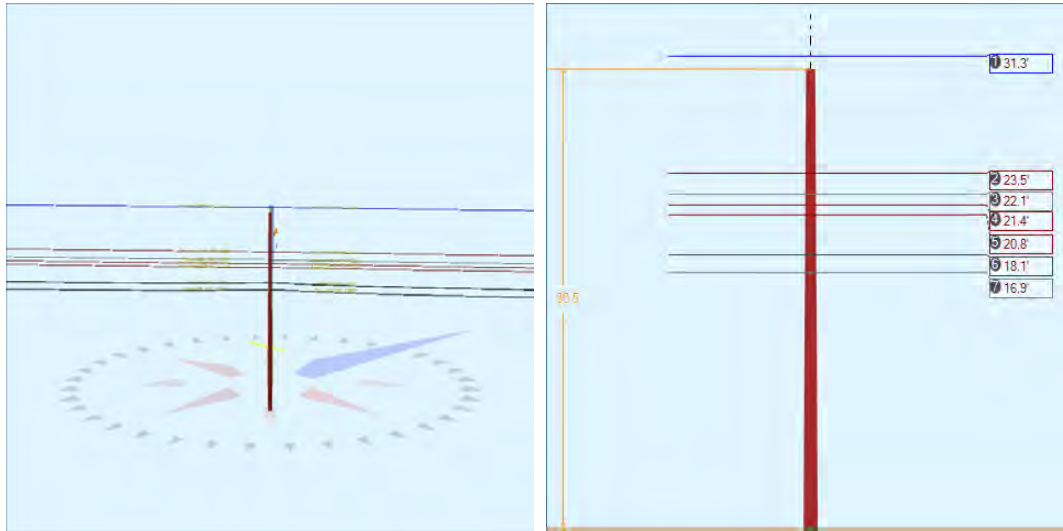
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	33.01	0.00	22.34	0.375	75.00	48.0	55.7	0.273	38.20	1.84
EHS 3/8	Down	KU, UTILITY	26.12	0.00	22.34	0.375	75.00	48.0	49.3	0.273	32.67	2.30
EHS 3/8	Span/Head	KU, UTILITY	26.20	26.20	179.32	0.375	75.00	313.9	0.0	0.273	177.50	3.80
EHS 1/4	Down	Unknown, COMMUNICATION	20.55	0.00	19.00	0.25	75.00	48.0	47.1	0.121	26.26	1.91

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,637	7,852	7,632	6,307	4,298	-3,528	-115,075
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,715	11,559	11,169	8,468	7,282	-5,976	-154,481
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	4,556	4,142	3,400	0	3,400	-1,736	-45,137
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,914	5,376	5,121	3,751	3,486	-2,861	-58,139
Totals:										18,527	18,465	-14,101	-372,832

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	22.34	48.0	25,000	1.00	25,000	19,381	18,772	77.5
Single Helix Anchor			18.00	179.32	313.9	20,000	1.00	20,000	4,142	3,400	20.7
Single Helix Anchor			18.00	19.00	48.0	20,000	1.00	20,000	5,376	5,121	26.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.98	34.34	9.59	27.32	6.69	10.66	1.60e+6	60.00	57.00	34.71	106,395	1063.30	3.37

Pole Num:	175W - 74491-33737	Pole Length / Class:	35 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068865 Deg	Longitude:	-84.449453 Deg	Elevation:	871.427846619505		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.3	319.3
Groundline	33.3	319.3
Vertical	8.7	319.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,138	319.3
Groundline	15,138	319.3
GL Allowable	46,070	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 319.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	328	44.9	7,995	52.8	17.4	1,175	365	5	1,180	17.4
Comms	258	35.4	4,784	31.6	10.4	703	479	7	710	10.4
Pole	137	18.8	2,158	14.3	4.7	317	1,146	17	334	4.9
Insulators	7	0.9	201	1.3	0.4	30	59	1	30	0.4
Pole Load	729	100.0	15,138	100.0	32.9	2,224	2,049	30	2,254	33.1
Pole Reserve Capacity			30,932		67.1	4,576			4,546	66.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 319.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	334	45.8	8,186	54.1	17.8	1,203	405	6	1,209	17.8
Unknown, COMMUNICATION	258	35.4	4,794	31.7	10.4	704	498	7	711	10.5
Pole	137	18.8	2,158	14.3	4.7	317	1,146	17	334	4.9
Totals:	729	100.0	15,138	100.0	32.9	2,224	2,049	30	2,254	33.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	31.33	0.00	0.3980	0.20	0.145	103.1	229.1	103.1	2,128	65	0	847	912
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	31.33	0.00	0.3980	0.26	0.145	118.7	48.9	118.7	2,128	168	0	974	1,142
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.53	5.90	0.3980	0.26	0.145	118.7	48.9	118.7	2,128	126	19	731	877
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.53	5.90	0.3980	0.20	0.145	103.1	229.1	103.1	2,128	49	17	636	701
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.14	5.98	0.3980	0.26	0.145	118.7	48.9	118.7	2,128	119	19	688	826
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.14	5.98	0.3980	0.20	0.145	103.1	229.1	103.1	2,128	46	17	598	661
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	21.44	6.02	0.3980	0.26	0.145	118.7	48.9	118.7	2,128	115	20	666	801
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	21.44	6.02	0.3980	0.20	0.145	103.1	229.1	103.1	2,128	44	17	579	640
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	20.77	6.06	0.3980	0.26	0.145	118.7	48.9	118.7	2,128	111	20	646	777
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	20.77	6.06	0.3980	0.20	0.145	103.1	229.1	103.1	2,128	43	17	561	621
										Totals:	886	146	6,927	7,958

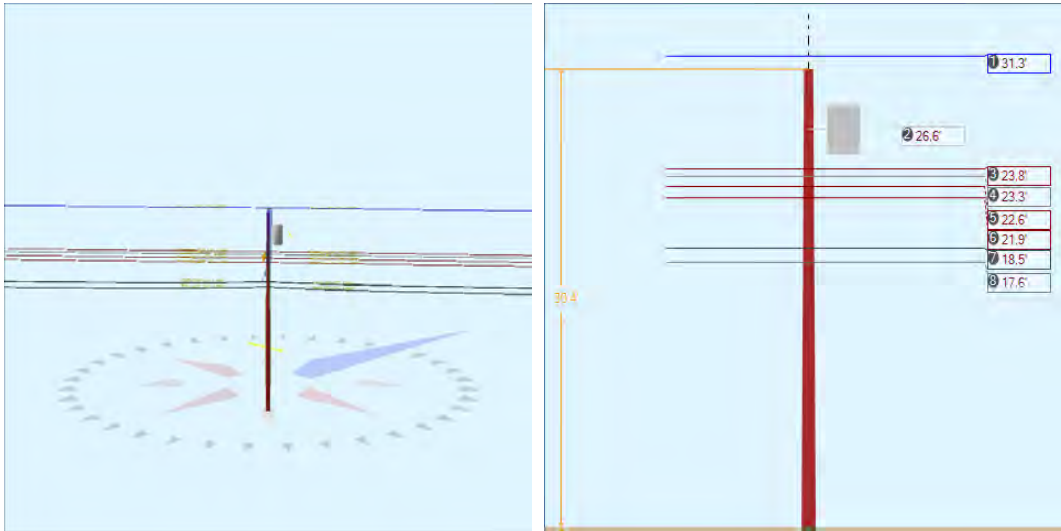
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	18.12	6.20	1.3300	1.61	0.337	118.7	48.9	118.7	925	42	48	1,148	1,239
CATV	CATV 1.0 Unknown, COMMUNICATION	18.12	6.20	1.3300	1.37	0.337	103.1	229.1	103.1	925	16	42	998	1,056

Telco	TELE 1.5	Unknown, COMMUNICATION	16.93	6.27	1.5000	1.88	0.900	118.7	48.9	118.7	2,000	85	85	1,172	1,342
Telco	TELE 1.5	Unknown, COMMUNICATION	16.93	6.27	1.5000	1.59	0.900	103.1	229.1	103.1	2,000	33	74	1,018	1,125
Totals:											177	249	4,336	4,762	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	30.46	0.00	0.0	0.0	13.00	9.00	10.50	0	142	142
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.53	0.00	319.0	229.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.14	0.00	319.0	229.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.44	0.00	319.0	229.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	20.77	0.00	319.0	229.0	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	18.12	0.00	319.1	229.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.93	0.00	319.1	229.1	5.00	3.00	0.00	5	0	5
Totals:										17	183	200

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.97	32.97	8.78	9.74	6.05	9.40	1.60e+6	60.00	57.00	30.46	23,572	235.50	11.49

Pole Num:	176W - 74397-33648	Pole Length / Class:	35 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.48	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068688 Deg	Longitude:	-84.449716 Deg	Elevation:	871.316994897205		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.3	0.0
Groundline	34.3	0.0
Vertical	17.3	20.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,477	134.5
Groundline	15,477	134.5
GL Allowable	45,948	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 134.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	292	40.2	7,353	47.5	16.0	1,084	369	5	1,089	16.0
Comms	249	34.3	4,762	30.8	10.4	702	483	7	709	10.4
PowerEquipments	42	5.7	1,018	6.6	2.2	150	694	10	160	2.4
Pole	137	18.8	2,142	13.8	4.7	316	1,142	17	332	4.9
Insulators	6	0.9	202	1.3	0.4	30	59	1	31	0.5
Pole Load	726	100.0	15,477	100.0	33.7	2,281	2,746	40	2,320	34.1
Pole Reserve Capacity			30,471		66.3	4,520			4,480	65.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 134.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	340	46.9	8,563	55.3	18.6	1,262	1,102	16	1,278	18.8
Unknown, COMMUNICATION	249	34.3	4,772	30.8	10.4	703	502	7	710	10.4
Pole	137	18.8	2,142	13.8	4.7	316	1,142	17	332	4.9
Totals:	726	100.0	15,477	100.0	33.7	2,281	2,746	40	2,320	34.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.25	0.00	0.3980	0.20	0.145	103.1	49.1	103.1	2,128	5,282	0	842	6,124
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.25	0.00	0.3980	0.27	0.145	120.8	229.1	120.8	2,128	-5,282	0	986	-4,296
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.77	5.89	0.3980	0.20	0.145	103.1	49.1	103.1	2,128	4,015	17	640	4,672
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.77	5.89	0.3980	0.27	0.145	120.8	229.1	120.8	2,128	-4,015	19	749	-3,247
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.28	5.91	0.3980	0.20	0.145	103.1	49.1	103.1	2,128	3,932	17	627	4,576
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.28	5.91	0.3980	0.27	0.145	120.8	229.1	120.8	2,128	-3,932	20	734	-3,179
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.61	5.95	0.3980	0.20	0.145	103.1	49.1	103.1	2,128	3,819	17	609	4,444

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.61	5.95	0.3980	0.27	0.145	120.8	229.1	120.8	2,128	-3,819	20	713	-3,086
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.86	5.99	0.3980	0.20	0.145	103.1	49.1	103.1	2,128	3,693	17	589	4,298
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.86	5.99	0.3980	0.27	0.145	120.8	229.1	120.8	2,128	-3,693	20	689	-2,984
Totals:											0	145	7,176	7,321	

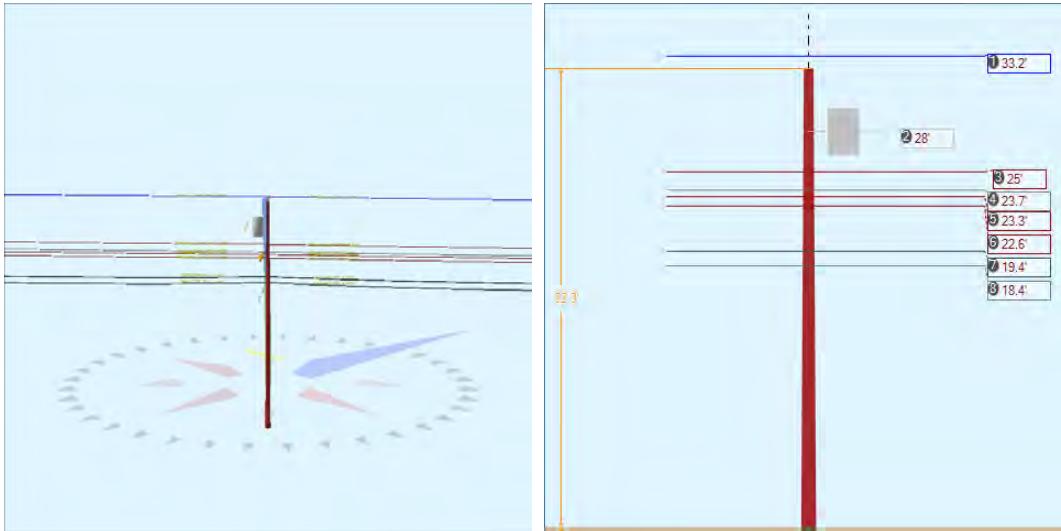
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, 18.51	6.18	1.3300	1.37	0.337	103.1	49.1	103.1	925	1,359	42	1,015	2,416
CATV	CATV 1.0	Unknown, 18.51	6.18	1.3300	1.65	0.337	120.8	229.1	120.8	925	-1,359	49	1,189	-121
Telco	TELE 1.5	Unknown, 17.58	6.23	1.5000	1.59	0.900	103.1	49.1	103.1	2,000	2,791	73	1,054	3,918
Telco	TELE 1.5	Unknown, 17.58	6.23	1.5000	1.92	0.900	120.8	229.1	120.8	2,000	-2,791	86	1,234	-1,471
Totals:											0	249	4,492	4,741

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	26.56	20.23	40.0	40.0	365.00	39.00	--	22.00	--	-93	1,106	1,013
Totals:											-93	1,106	1,013	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	30.38	0.00	0.0	0.0	13.00	9.00	10.50	0	141	141	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.77	0.00	139.1	49.1	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.28	0.00	139.1	49.1	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.61	0.00	139.1	49.1	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.86	0.00	139.1	49.1	2.00	3.00	3.19	2	10	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.51	0.00	139.1	49.1	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.58	0.00	139.1	49.1	5.00	3.00	0.00	5	0	5	
Totals:											17	184	201

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.04	33.52	8.65	11.98	6.05	9.39	1.60e+6	60.00	57.00	30.38	15,912	158.73	5.78

Pole Num:	177W - 74314-33570	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.71	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.87	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068440 Deg	Longitude:	-84.450020 Deg	Elevation:	867.831042569977		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.2	0.0
Groundline	29.2	0.0
Vertical	13.2	20.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,276	143.0
Groundline	18,276	143.0
GL Allowable	63,728	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 143.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	332	40.8	8,689	47.6	13.6	924	395	5	928	13.7
Comms	273	33.5	5,457	29.9	8.6	580	518	6	586	8.6
PowerEquipments	42	5.1	1,231	6.7	1.9	131	694	8	139	2.0
Pole	161	19.8	2,685	14.7	4.2	285	1,500	17	303	4.5
Insulators	6	0.8	213	1.2	0.3	23	59	1	23	0.3
Pole Load	814	100.0	18,276	100.0	28.7	1,943	3,166	37	1,980	29.1
Pole Reserve Capacity			45,452		71.3	4,857			4,820	70.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 143.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	380	46.7	10,124	55.4	15.9	1,076	1,129	13	1,089	16.0
Unknown, COMMUNICATION	273	33.5	5,468	29.9	8.6	581	537	6	588	8.6
Pole	161	19.8	2,685	14.7	4.2	285	1,500	17	303	4.5
Totals:	814	100.0	18,276	100.0	28.7	1,943	3,166	37	1,980	29.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	33.17	0.00	0.3980	0.27	0.145	120.8	49.1	120.8	2,128	-4,799	0	1,047	-3,752
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	33.17	0.00	0.3980	0.27	0.145	119.4	229.0	119.4	2,128	4,922	0	1,035	5,956
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.02	6.27	0.3980	0.27	0.145	120.8	49.1	120.8	2,128	-3,618	21	789	-2,808
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.02	6.27	0.3980	0.27	0.145	119.4	229.0	119.4	2,128	3,710	20	780	4,511
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.73	6.34	0.3980	0.27	0.145	120.8	49.1	120.8	2,128	-3,432	21	749	-2,662
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.73	6.34	0.3980	0.27	0.145	119.4	229.0	119.4	2,128	3,520	21	740	4,281
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.27	6.37	0.3980	0.27	0.145	120.8	49.1	120.8	2,128	-3,365	21	734	-2,610

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.27	6.37	0.3980	0.27	0.145	119.4	229.0	119.4	2,128	3,451	21	725	4,197
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.60	6.41	0.3980	0.27	0.145	120.8	49.1	120.8	2,128	-3,269	21	713	-2,534
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.60	6.41	0.3980	0.27	0.145	119.4	229.0	119.4	2,128	3,352	21	705	4,078
Totals:											474	167	8,017	8,657	

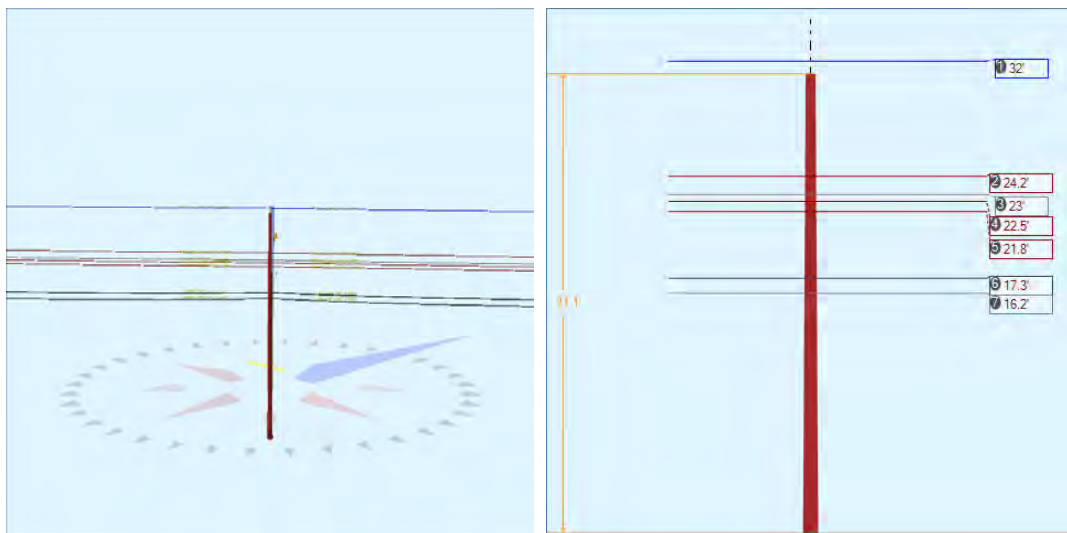
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.43	6.59	1.3300	1.65	0.337	120.8	49.1	120.8	925	-1,221	52	1,249	80
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.43	6.59	1.3300	1.63	0.337	119.4	229.0	119.4	925	1,253	51	1,235	2,539
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.41	6.65	1.5000	1.92	0.900	120.8	49.1	120.8	2,000	-2,502	92	1,293	-1,117
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.41	6.65	1.5000	1.89	0.900	119.4	229.0	119.4	2,000	2,566	91	1,278	3,935
		COMMUNICATION													
Totals:											95	286	5,056	5,437	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	27.96	20.60	230.0	230.0	365.00	39.00	--	22.00	--	62	1,165	1,227
Totals:											62	1,165	1,227	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.29	0.00	0.0	0.0	13.00	9.00	10.50	0	150	150	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.02	0.00	139.0	49.0	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.73	0.00	139.0	49.0	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.27	0.00	139.0	49.0	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.60	0.00	139.0	49.0	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.43	0.00	139.0	49.0	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.41	0.00	139.0	49.0	5.00	3.00	0.00	5	0	5	
Totals:											18	194	213

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	20.40	33.42	9.67	13.06	6.69	10.47	1.60e+6	60.00	57.00	32.29	23,993	239.83	7.58

Pole Num:	178W - 74233-33497	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.45	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068215 Deg	Longitude:	-84.450387 Deg	Elevation:	884.116423149882		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.5	0.0
Groundline	26.5	0.0
Vertical	6.8	16.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	15,963	319.1
Groundline	15,963	319.1
GL Allowable	61,314	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 319.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	332	43.4	8,401	52.6	13.7	927	394	5	932	13.7
Comms	272	35.6	4,865	30.5	7.9	537	516	6	543	8.0
Pole	155	20.2	2,490	15.6	4.1	275	1,423	17	292	4.3
Insulators	7	0.8	207	1.3	0.3	23	59	1	24	0.3
Pole Load	765	100.0	15,963	100.0	26.0	1,762	2,392	29	1,790	26.3
Pole Reserve Capacity			45,351		74.0	5,038			5,010	73.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 319.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	338	44.2	8,598	53.9	14.0	949	434	5	954	14.0
Unknown, COMMUNICATION	272	35.6	4,875	30.5	8.0	538	535	6	544	8.0
Pole	155	20.2	2,490	15.6	4.1	275	1,423	17	292	4.3
Totals:	765	100.0	15,963	100.0	26.0	1,762	2,392	29	1,790	26.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	32.02	0.00	0.3980	0.27	0.145	119.4	49.0	119.4	2,128	110	0	1,002	1,111
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	32.02	0.00	0.3980	0.27	0.145	119.8	229.1	119.8	2,128	9	0	1,006	1,015
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.20	6.25	0.3980	0.27	0.145	119.4	49.0	119.4	2,128	83	20	756	860
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.20	6.25	0.3980	0.27	0.145	119.8	229.1	119.8	2,128	7	21	759	787
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.96	6.32	0.3980	0.27	0.145	119.4	49.0	119.4	2,128	79	21	718	817
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.96	6.32	0.3980	0.27	0.145	119.8	229.1	119.8	2,128	7	21	721	748
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.48	6.35	0.3980	0.27	0.145	119.4	49.0	119.4	2,128	77	21	703	801
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.48	6.35	0.3980	0.27	0.145	119.8	229.1	119.8	2,128	6	21	706	733
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	21.80	6.39	0.3980	0.27	0.145	119.4	49.0	119.4	2,128	75	21	682	777
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	21.80	6.39	0.3980	0.27	0.145	119.8	229.1	119.8	2,128	6	21	684	711
										Totals:	459	166	7,736	8,360

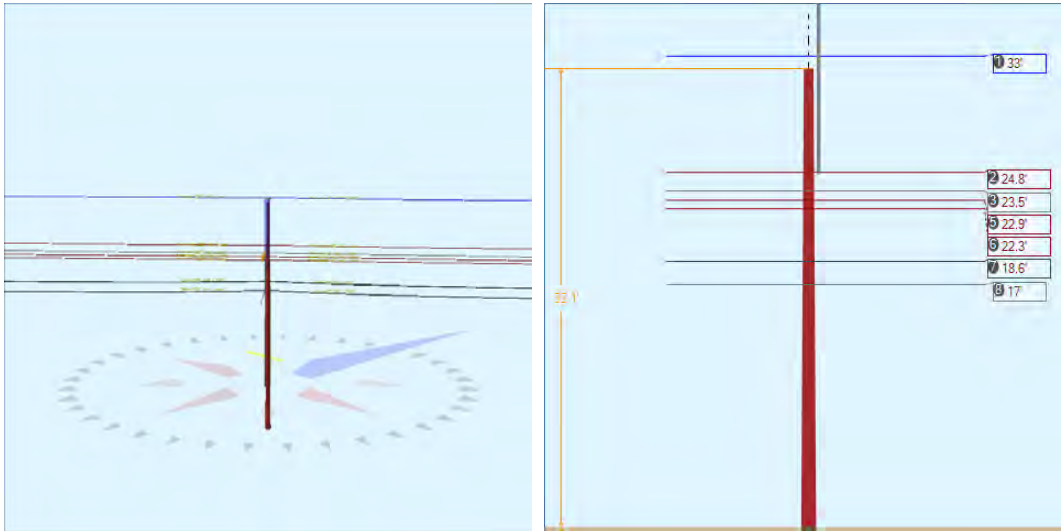
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	17.26	6.65	1.3300	1.63	0.337	119.4	49.0	119.4	925	26	52	1,100	1,177
CATV	CATV 1.0 Unknown, COMMUNICATION	17.26	6.65	1.3300	1.63	0.337	119.8	229.1	119.9	925	2	52	1,104	1,158

Telco	TELE 1.5	Unknown, COMMUNICATION	16.23	6.71	1.5000	1.89	0.900	119.4	49.0	119.4	2,000	52	92	1,130	1,274
Telco	TELE 1.5	Unknown, COMMUNICATION	16.23	6.71	1.5000	1.90	0.900	119.8	229.1	119.9	2,000	4	92	1,135	1,231
Totals:											85	288	4,469	4,841	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	31.15	0.00	0.0	0.0	13.00	9.00	10.50	0	145	145
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.20	0.00	319.0	229.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.96	0.00	319.0	229.0	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.48	0.00	319.0	229.0	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.80	0.00	319.0	229.0	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	17.26	0.00	319.0	229.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.23	0.00	319.0	229.0	5.00	3.00	0.00	5	0	5
Totals:										19	188	206

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.87	32.87	9.68	10.55	6.69	10.33	1.60e+6	60.00	57.00	31.15	35,286	351.76	14.71

Pole Num:	179W - 74252-33414	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.89	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.80	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068019 Deg	Longitude:	-84.450642 Deg	Elevation:	879.979355277296		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.9	0.0
Groundline	31.9	0.0
Vertical	7.2	17.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,939	138.8
Groundline	19,939	138.8
GL Allowable	63,342	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 138.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	425	46.0	10,960	55.0	17.3	1,173	394	5	1,177	17.3
Comms	298	32.3	5,594	28.1	8.8	599	517	6	605	8.9
Pole	160	17.4	2,655	13.3	4.2	284	1,488	17	301	4.4
Risers	34	3.6	518	2.6	0.8	55	44	1	56	0.8
Insulators	7	0.7	212	1.1	0.3	23	59	1	23	0.3
Pole Load	923	100.0	19,939	100.0	31.5	2,134	2,501	29	2,163	31.8
Pole Reserve Capacity			43,403		68.5	4,667			4,637	68.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 138.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	465	50.4	11,679	58.6	18.4	1,250	478	6	1,255	18.5
Unknown, COMMUNICATION	298	32.3	5,605	28.1	8.9	600	536	6	606	8.9
Pole	160	17.4	2,655	13.3	4.2	284	1,488	17	301	4.4
Totals:	923	100.0	19,939	100.0	31.5	2,134	2,501	29	2,163	31.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.98	0.00	0.3980	0.27	0.145	119.8	49.1	119.8	2,128	376	0	1,036	1,411
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.98	0.00	0.3980	0.27	0.145	119.6	228.5	119.6	2,128	360	0	1,033	1,393
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.84	6.27	0.3980	0.27	0.145	119.8	49.1	119.8	2,128	283	21	780	1,083
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.84	6.27	0.3980	0.27	0.145	119.6	228.5	119.6	2,128	271	21	778	1,069
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.55	6.34	0.3980	0.27	0.145	119.8	49.1	119.8	2,128	268	21	739	1,028
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.55	6.34	0.3980	0.27	0.145	119.6	228.5	119.6	2,128	257	21	737	1,015
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.89	6.38	0.3980	0.27	0.145	119.8	49.1	119.8	2,128	260	21	718	1,000

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.89	6.38	0.3980	0.27	0.145	119.6	228.5	119.6	2,128	250	21	717	987
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.42	0.3980	0.27	0.145	119.8	49.1	119.8	2,128	254	21	700	975
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.30	6.42	0.3980	0.27	0.145	119.6	228.5	119.6	2,128	243	21	698	962
Totals:											2,821	167	7,936	10,924	

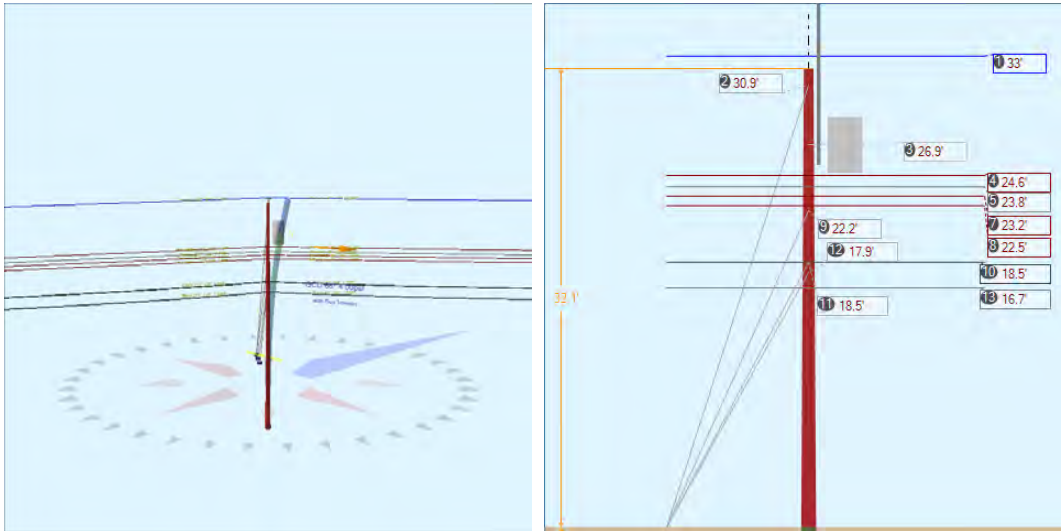
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.61	6.63	1.3300	1.63	0.337	119.8	49.1	119.9	925	92	52	1,190	1,334
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.61	6.63	1.3300	1.63	0.337	119.6	228.5	119.6	925	88	52	1,187	1,328
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.00	6.73	1.5000	1.90	0.900	119.8	49.1	119.9	2,000	182	92	1,188	1,462
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.00	6.73	1.5000	1.90	0.900	119.6	228.5	119.6	2,000	174	92	1,186	1,452
		COMMUNICATION													
Totals:											536	288	4,752	5,576	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 230.0°	Riser	KU, UTILITY	23.04	5.45	230.0	230.0	23.04	276.51	2.50	2.50	276.51	0	516	516
Totals:											0	516	516	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.11	0.00	0.0	0.0	13.00	9.00	10.50	0	150	150	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.84	0.00	138.8	48.8	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.55	0.00	138.8	48.8	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.89	0.00	138.8	48.8	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.30	0.00	138.8	48.8	2.00	3.00	3.19	2	10	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.61	0.00	138.8	48.8	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.00	0.00	138.8	48.8	5.00	3.00	0.00	5	0	5	
Totals:											19	193	212

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.32	32.91	9.77	10.93	6.69	10.45	1.60e+6	60.00	57.00	32.11	34,796	347.36	13.89

Pole Num:	180W - 74058-33325	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.92	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.80	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067800 Deg	Longitude:	-84.450952 Deg	Elevation:	891.354621800672		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	16.7	24.7
Groundline	10.2	0.0
Vertical	9.5	23.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	3,612	350.8
Groundline	4,430	53.1
GL Allowable	63,287	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.9	309.0		25.6	65.6	27.4	130.0
? EHS 3/8 (Down)			30.9	17.9	65.6	20.9	130.0
? EHS 3/8 (Down)			22.2	19.3	65.6	22.7	130.0
? Single Helix Anchor	18.0	309.0		9.9	65.6	10.8	130.0
? EHS 3/8 (Down)			18.5	14.3	65.6	17.2	130.0
? Single Helix Anchor	14.8	309.0		4.2	65.6	4.6	130.0
? EHS 1/4 (Down)			17.9	13.9	65.6	16.8	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 53.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	904	467.6	16,185	365.4	25.6	2,472	409	5	2,477	36.4
Comms	270	139.6	3,340	75.4	5.3	510	537	6	516	7.6
GuyBraces	-1,216	-628.8	-19,763	-446.1	-31.2	-3,018	9,170	107	-2,911	-42.8
PowerEquipments	54	27.7	2,516	56.8	4.0	384	1,216	14	398	5.9
Pole	156	80.9	1,814	41.0	2.9	277	1,486	17	294	4.3
Risers	19	9.7	202	4.6	0.3	31	45	1	31	0.5
Insulators	6	3.3	136	3.1	0.2	21	59	1	21	0.3
Pole Load	193	100.0	4,430	100.0	7.0	677	12,921	151	827	12.2
Pole Reserve Capacity			58,857		93.0	6,123			5,973	87.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 53.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-109	-56.6	826	18.7	1.3	126	9,909	116	242	3.6
Unknown, COMMUNICATION	146	75.7	1,789	40.4	2.8	273	1,527	18	291	4.3
Pole	156	80.9	1,814	41.0	2.9	277	1,486	17	294	4.3
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	193	100.0	4,430	100.0	7.0	677	12,921	151	827	12.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	32.96	0.00	0.3980	0.20	0.145	119.6	48.5	119.6	2,128	90,925	0	24	90,950
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	32.96	0.00	0.3980	0.24	0.145	129.0	212.2	129.0	2,128	-85,207	0	219	-84,988
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.60	6.28	0.3980	0.20	0.145	119.6	48.5	119.6	2,128	67,834	5	18	67,857
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.60	6.28	0.3980	0.24	0.145	129.0	212.2	129.0	2,128	-63,569	5	164	-63,400
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.81	6.33	0.3980	0.20	0.145	119.6	48.5	119.6	2,128	65,656	5	18	65,678
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.81	6.33	0.3980	0.24	0.145	129.0	212.2	129.0	2,128	-61,527	5	158	-61,364
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.16	6.36	0.3980	0.20	0.145	119.6	48.5	119.6	2,128	63,864	5	17	63,886
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.16	6.36	0.3980	0.24	0.145	129.0	212.2	129.0	2,128	-59,848	5	154	-59,689
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.48	6.40	0.3980	0.20	0.145	119.6	48.5	119.6	2,128	61,993	5	17	62,015
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.48	6.40	0.3980	0.24	0.145	129.0	212.2	129.0	2,128	-58,095	5	149	-57,940
Totals:											22,027	38	939	23,004

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	18.54	6.63	1.3300	1.61	0.337	119.6	48.5	119.6	925	22,220	12	28	22,259
CATV	CATV 1.0 Unknown, COMMUNICATION	18.54	6.63	1.3300	1.76	0.337	129.0	212.2	129.1	925	-20,823	12	251	-20,559

Telco	TELE 1.5	Unknown, COMMUNICATION	16.74	6.74	1.5000	1.88	0.900	119.6	48.5	119.6	2,000	43,382	20	28	43,431
Telco	TELE 1.5	Unknown, COMMUNICATION	16.74	6.74	1.5000	2.07	0.900	129.0	212.2	129.1	2,000	-40,654	22	248	-40,384
Totals:											4,125	66	555	4,746	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA KU, UTILITY	26.89	21.65	40.0	40.0	640.00	47.00	--	24.00	--	2,136	1,440	3,576
Totals:											2,136	1,440	3,576

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 280.0°	Riser KU, UTILITY	23.44	5.45	280.0	280.0	23.44	281.29	2.50	2.50	281.29	-7	294	287
Totals:											-7	294	287

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	32.08	0.00	0.0	0.0	13.00	9.00	10.50	0	146	146	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.60	0.00	130.3	40.3	2.00	3.00	3.19	0	11	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.81	0.00	130.3	40.3	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.16	0.00	130.3	40.3	2.00	3.00	3.19	0	11	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	22.48	0.00	130.3	40.3	2.00	3.00	3.19	0	10	11	
Bolt	Three Bolt Unknown, COMMUNICATION	18.54	0.00	130.3	40.3	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt Unknown, COMMUNICATION	16.74	0.00	130.3	40.3	5.00	3.00	0.00	1	0	1	
Totals:										4	189	193

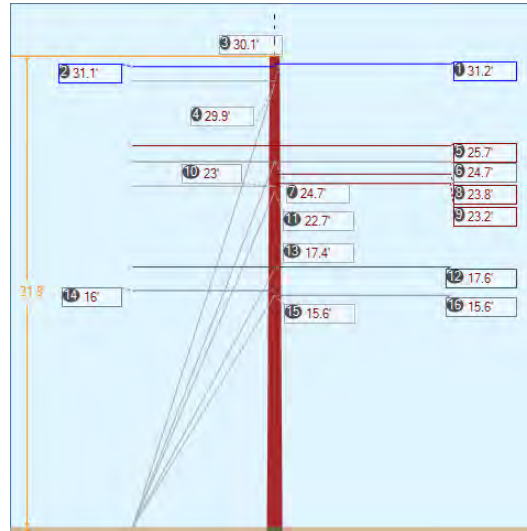
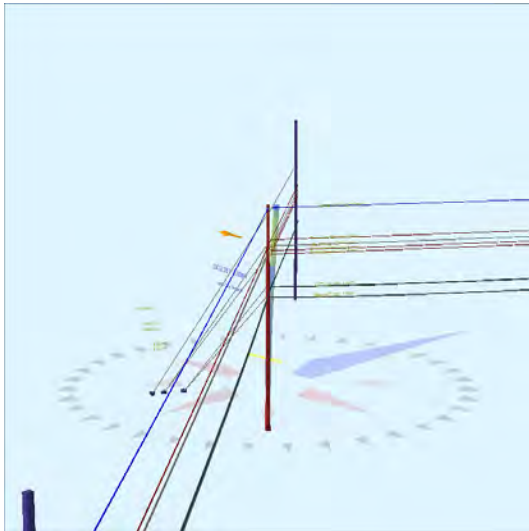
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down KU, UTILITY	30.94	0.00	20.93	0.375	75.00	309.0	55.7	0.273	35.70	0.56
EHS 3/8	Down KU, UTILITY	22.15	0.00	20.93	0.375	75.00	309.0	46.5	0.273	28.75	0.48
EHS 3/8	Down KU, UTILITY	18.54	0.00	18.00	0.375	75.00	309.0	45.7	0.273	24.10	0.30
EHS 1/4	Down Unknown, COMMUNICATION	17.85	0.00	14.84	0.25	75.00	309.0	50.1	0.121	21.49	0.25

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,894	2,631	2,476	2,046	1,394	-340	-10,129
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,146	2,860	2,668	1,935	1,838	-448	-9,679
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,383	2,166	1,980	1,417	1,383	-337	-6,075
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,005	914	830	637	533	-130	-2,206
Totals:										6,035	5,147	-1,256	-28,089

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	20.93	309.0	20,000	1.00	20,000	5,473	5,128	27.4
Single Helix Anchor		18.00	18.00	309.0	20,000	1.00	20,000	2,166	1,980	10.8
Single Helix Anchor		18.00	14.84	309.0	20,000	1.00	20,000	914	830	4.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.45	33.94	9.51	16.35	6.69	10.44	1.60e+6	60.00	57.00	32.08	135,965	1360.15	10.53

Pole Num:	181W - 73998-33233	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.21	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.69	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067493 Deg	Longitude:	-84.451178 Deg	Elevation:	891.331337672431		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	61.1	24.0
Groundline	10.0	0.0
Vertical	27.0	23.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,284	142.9
Groundline	4,582	25.0
GL Allowable	62,659	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	70.7	319.9		5.8	280.7	7.7	100.0
? EHS 3/8 (Span/Head)			30.1	8.3	280.7	12.2	100.0
? Single Helix Anchor	20.4	210.0		24.2	280.7	25.7	70.0
? EHS 7/16 (Down)			29.9	32.3	280.7	37.8	70.0
? Single Helix Anchor	162.6	139.6		6.9	280.7	6.9	286.9
? EHS 3/8 (Span/Head)			23.0	9.9	280.7	10.9	286.9
? Single Helix Anchor	15.0	210.0		22.6	280.7	24.6	50.0
? EHS 1/4 (Down)			17.4	39.2	280.7	46.6	50.0
? EHS 1/4 (Down)			15.7	36.5	280.7	43.9	50.0
? Single Helix Anchor	18.4	210.0		64.4	280.7	67.7	60.0
? EHS 7/16 (Down)			22.7	43.7	280.7	50.6	60.0
? EHS 7/16 (Down)			24.7	42.4	280.7	48.9	60.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 25.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	14,831	1310.8	52,783	1152.0	84.2	40,212	466	5	40,217	591.4
Comms	2,589	228.8	6,058	132.2	9.7	4,615	685	8	4,623	68.0
GuyBraces	-16,247	-1435.9	-54,163	-1182.1	-86.4	-41,263	31,887	375	-40,888	-601.3
Pole	-39	-3.5	-91	-2.0	-0.2	-70	1,466	17	-52	-0.8
Insulators	-2	-0.2	-5	-0.1	0.0	-4	55	1	-3	0.0
Pole Load	1,132	100.0	4,582	100.0	7.3	3,491	34,559	406	3,897	57.3
Pole Reserve Capacity			58,077		92.7	3,309			2,903	42.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 25.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,573	139.0	5,662	123.6	9.0	4,313	27,285	321	4,634	68.2
Unknown, COMMUNICATION	-403	-35.6	-989	-21.6	-1.6	-753	5,808	68	-685	-10.1
Pole	-39	-3.5	-91	-2.0	-0.2	-70	1,466	17	-52	-0.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,132	100.0	4,582	100.0	7.3	3,491	34,559	406	3,897	57.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.25	20.50	0.3980	0.29	0.145	129.0	32.2	129.0	2,128	85,774	12	123	85,909
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.07	16.13	0.3980	0.39	0.145	162.6	139.6	162.6	2,128	-35,734	-6	-756	-36,496
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.75	6.20	0.3980	0.29	0.145	129.0	32.2	129.0	2,128	70,664	20	101	70,785
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.75	6.20	0.3980	0.39	0.145	162.6	139.6	162.6	2,128	-29,612	25	-626	-30,213
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.75	6.20	0.3980	0.07	0.145	70.7	319.9	70.7	2,128	29,950	11	-273	29,688
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.66	6.26	0.3980	0.29	0.145	129.0	32.2	129.0	2,128	67,695	20	97	67,812
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.66	6.26	0.3980	0.39	0.145	162.6	139.6	162.6	2,128	-28,367	25	-600	-28,942
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.66	6.26	0.3980	0.07	0.145	70.7	319.9	70.7	2,128	28,692	11	-262	28,441
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.84	6.31	0.3980	0.29	0.145	129.0	32.2	129.0	2,128	65,422	20	94	65,536
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.84	6.31	0.3980	0.07	0.145	70.7	319.9	70.7	2,128	27,728	11	-253	27,486
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.20	6.34	0.3980	0.29	0.145	129.0	32.2	129.0	2,128	63,670	20	91	63,781
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.20	6.34	0.3980	0.07	0.145	70.7	319.9	70.7	2,128	26,986	11	-246	26,751
Totals:											372,869	181	-2,511	370,538	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	17.56	6.67	1.3300	2.35	0.337	162.6	139.6	162.7	925	-8,781	65	-871	-9,587
CATV	CATV 1.0	Unknown, COMMUNICATION	17.56	6.67	1.3300	0.89	0.337	70.7	319.9	70.7	925	8,882	28	-380	8,530
CATV	CATV 1.0	Unknown, COMMUNICATION	17.56	6.67	1.3300	1.78	0.337	129.0	32.2	129.1	925	20,956	51	140	21,148
Telco	TELE 1.5	Unknown, COMMUNICATION	15.96	6.77	1.5000	2.79	0.900	162.6	139.6	162.7	2,000	-17,253	-52	-865	-18,170
Telco	TELE 1.5	Unknown, COMMUNICATION	15.65	6.79	1.5000	2.08	0.900	129.0	32.2	129.1	2,000	40,368	99	137	40,604
Totals:											44,171	191	-1,838	42,524	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 17.13"	KU, UTILITY	31.25	0.00	32.2	32.2	3.00	3.90	17.13	10	-25	-15
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.07	0.00	139.6	139.6	3.00	3.80	12.75	-3	-18	-21
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.75	0.00	50.0	50.0	2.00	3.00	3.19	2	-3	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.66	0.00	50.0	50.0	2.00	3.00	3.19	2	-3	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.84	0.00	50.0	50.0	2.00	3.00	3.19	2	-3	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.20	0.00	50.0	50.0	2.00	3.00	3.19	2	-3	-1
Bolt	Three Bolt	Unknown, COMMUNICATION	17.56	0.00	49.8	319.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	15.96	0.00	139.6	139.6	5.00	3.00	0.00	-2	0	-2
Bolt	Three Bolt	Unknown, COMMUNICATION	15.65	0.00	32.2	32.2	5.00	3.00	0.00	5	0	5
Totals:										22	-54	-33

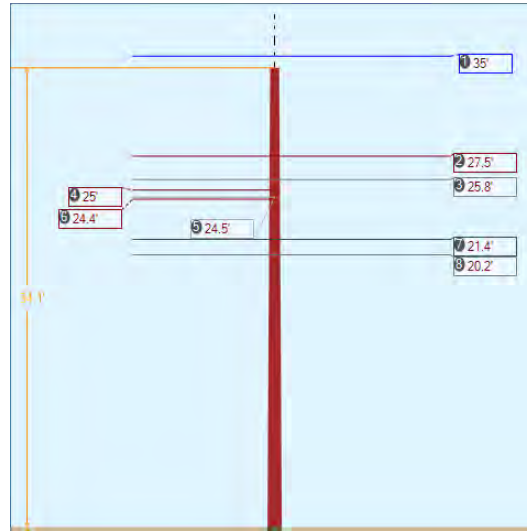
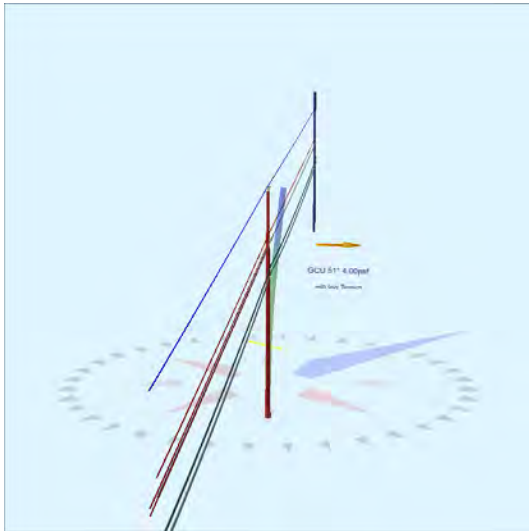
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	30.11	30.11	70.69	0.375	75.00	319.9	0.0	0.273	68.90	0.50
EHS 7/16	Down	KU, UTILITY	29.87	0.00	20.43	0.438	75.00	210.0	55.4	0.399	34.53	0.97
EHS 3/8	Span/Head	KU, UTILITY	23.02	23.02	162.63	0.375	75.00	139.6	0.0	0.273	160.81	1.39
EHS 1/4	Down	Unknown, COMMUNICATION	17.42	0.00	14.99	0.25	75.00	210.0	49.1	0.121	21.26	0.71
EHS 1/4	Down	Unknown, COMMUNICATION	15.65	0.00	14.99	0.25	75.00	210.0	46.1	0.121	19.92	0.62
EHS 7/16	Down	KU, UTILITY	22.67	0.00	18.43	0.438	75.00	210.0	50.7	0.399	27.51	1.04
EHS 7/16	Down	KU, UTILITY	24.66	0.00	18.43	0.438	75.00	210.0	53.1	0.399	29.10	1.07

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	1,688	1,535	1,152	0	1,152	485	14,301
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	7,073	6,430	6,054	4,986	3,434	-3,422	-100,730
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	1,511	1,373	1,373	0	1,373	-571	-13,705
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,789	2,535	2,344	1,772	1,534	-1,528	-26,182
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,630	2,391	2,186	1,575	1,516	-1,511	-23,290
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	9,472	8,611	8,178	6,330	5,178	-5,158	-115,266
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	9,156	8,324	7,930	6,337	4,767	-4,749	-115,350
Totals:										20,999	18,954	-16,454	-380,223

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	70.69	319.9	20,000	1.00	20,000	1,535	1,152	7.7
Single Helix Anchor			18.00	20.43	210.0	25,000	1.00	25,000	6,430	6,054	25.7
Single Helix Anchor			18.00	162.63	139.6	20,000	1.00	20,000	1,373	1,373	6.9
Single Helix Anchor			18.00	14.99	210.0	20,000	1.00	20,000	4,925	4,528	24.6
Single Helix Anchor			18.00	18.43	210.0	25,000	1.00	25,000	16,931	16,104	67.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.90	34.03	9.45	26.89	6.69	10.41	1.60e+6	60.00	57.00	31.79	127,887	1279.96	3.70

Pole Num:	182W - 75135-33087	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.88	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.54	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067171 Deg	Longitude:	-84.450802 Deg	Elevation:	884.153849261037		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	50.7
Groundline	0.0	50.7
Vertical	19.0	139.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	77.5	50.7
Groundline	77.5	50.7
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	162.6	319.6		25.6	50.7	26.1	140.0
? EHS 3/8 (Span/Head)			24.5	36.9	50.7	41.5	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 77.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,892	292.1	72,887	300.7	107.6	7,293	368	4	7,297	107.3
Comms	296	29.9	6,477	26.7	9.6	648	622	7	655	9.6
GuyBraces	-2,358	-238.2	-58,003	-239.3	-85.7	-5,803	38	0	-5,803	-85.3
Pole	154	15.6	2,679	11.1	4.0	268	1,627	18	286	4.2
Insulators	6	0.6	200	0.8	0.3	20	59	1	21	0.3
Pole Load	990	100.0	24,239	100.0	35.8	2,425	2,713	30	2,455	36.1
Pole Reserve Capacity			43,475		64.2	4,375			4,345	63.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 77.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	540	54.5	15,074	62.2	22.3	1,508	445	5	1,513	22.3
Unknown, COMMUNICATION	296	29.9	6,486	26.8	9.6	649	641	7	656	9.6
Pole	154	15.6	2,679	11.1	4.0	268	1,627	18	286	4.2
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	990	100.0	24,239	100.0	35.8	2,425	2,713	30	2,455	36.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.99	0.00	0.3980	0.30	0.145	125.7	139.4	125.7	2,128	45,661	0	1,016	46,677
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.99	0.00	0.3980	0.49	0.145	162.6	319.6	162.6	2,128	-45,362	0	1,317	-44,045
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.55	6.23	0.3980	0.30	0.145	125.7	139.4	125.7	2,128	35,932	19	800	36,750
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.55	6.23	0.3980	0.49	0.145	162.6	319.6	162.6	2,128	-35,697	25	1,037	-34,636
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.82	6.33	0.3980	0.30	0.145	125.7	139.4	125.7	2,128	33,678	19	749	34,446
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.82	6.33	0.3980	0.49	0.145	162.6	319.6	162.6	2,128	-33,458	25	972	-32,461
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.04	6.37	0.3980	0.30	0.145	125.7	139.4	125.7	2,128	32,657	10	727	33,394

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.36	6.41	0.3980	0.30	0.145	125.7	139.4	125.7	2,128	31,776	10	707	32,493
Totals:												65,186	108	7,325	72,619

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.39	6.59	1.3300	1.73	0.337	125.7	139.4	125.7	925	12,125	48	1,265	13,438
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.39	6.59	1.3300	2.38	0.337	162.6	319.6	162.7	925	-12,046	62	1,640	-10,344
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.23	6.65	1.5000	2.02	0.900	125.7	139.4	125.7	2,000	24,797	84	1,308	26,190
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.23	6.65	1.5000	2.81	0.900	162.6	319.6	162.7	2,000	-24,635	109	1,695	-22,831
		COMMUNICATION													
Totals:												241	304	5,908	6,453

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.12	0.00	0.0	0.0	13.00	9.00	10.50	0	142	142
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.55	0.00	49.5	319.5	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.82	0.00	49.5	319.5	2.00	3.00	3.19	2	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.04	0.00	139.4	139.4	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.36	0.00	139.4	139.4	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	21.39	0.00	49.5	319.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.23	0.00	49.5	319.5	5.00	3.00	0.00	5	0	5
Totals:										15	184	199

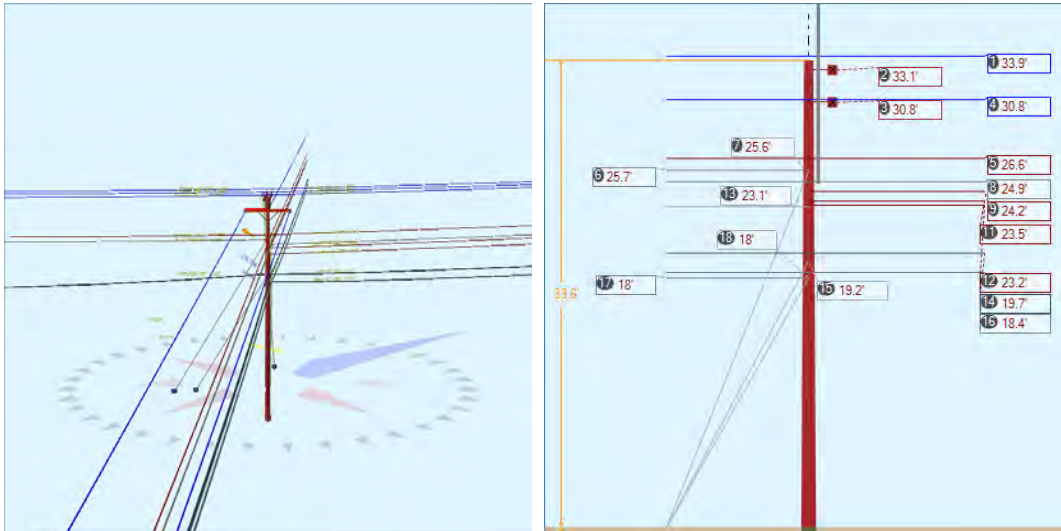
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	24.51	24.51	162.63	0.375	75.00	319.6	0.0	0.273	160.81	5.18

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,750	5,228	5,116	0	5,116	-2,394	-57,790
Totals:										0	5,116	-2,394	-57,790

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	162.63	319.6	20,000	1.00	20,000	5,228	5,116	26.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.00	33.12	9.94	7.06	6.69	10.68	1.60e+6	60.00	57.00	34.12	247,439	2466.78	90.91

Pole Num:	183W - 74204-33015	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.38	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.36	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066896 Deg	Longitude:	-84.450511 Deg	Elevation:	882.83237064688		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	63.9	297.9
Groundline	23.2	67.9
Vertical	11.4	30.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,818	297.9
Groundline	12,458	67.9
GL Allowable	66,625	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	16.6	211.0	25.6	29.8 43.0	297.9 297.9	38.4 61.0	50.0 50.0
? Single Helix Anchor ? EHS 3/8 (Span/Head)	170.9	138.9	23.1	29.4 42.4	297.9 297.9	29.4 46.6	299.3 299.3
? Single Helix Anchor ? EHS 1/4 (Down)	12.8	211.0	19.2	21.0 70.3	297.9 297.9	25.5 93.8	64.4 64.4
? Single Helix Anchor ? EHS 1/4 (Down)	12.0	320.5	18.0	0.0 0.0	297.9 297.9	0.0 0.0	0.0 0.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 28.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	7,172	552.2	86,349	693.1	129.6	16,928	1,180	13	16,941	249.1
Comms	1,675	129.0	16,405	131.7	24.6	3,216	1,366	15	3,231	47.5
GuyBraces	-7,546	-580.9	-90,242	-724.4	-135.5	-17,691	12,882	145	-17,545	-258.0
Pole	-2	-0.1	-17	-0.1	0.0	-3	1,592	18	15	0.2
Crossarms	0	0.0	-33	-0.3	-0.1	-6	380	4	-2	0.0
Risers	0	0.0	-5	0.0	0.0	-1	45	1	-1	0.0
Insulators	0	0.0	1	0.0	0.0	0	160	2	2	0.0
Pole Load	1,299	100.0	12,458	100.0	18.7	2,442	17,605	199	2,641	38.8
Pole Reserve Capacity			54,167		81.3	4,358			4,159	61.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 28.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,917	147.6	19,009	152.6	28.5	3,727	8,923	101	3,827	56.3
Unknown, COMMUNICATION	-616	-47.4	-6,501	-52.2	-9.8	-1,275	6,710	76	-1,199	-17.6
Pole	-2	-0.1	-17	-0.1	0.0	-3	1,592	18	15	0.2
<Undefined>	0	0.0	-33	-0.3	-0.1	-6	380	4	-2	0.0
Totals:	1,299	100.0	12,458	100.0	18.7	2,442	17,605	199	2,641	38.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.94	0.00	0.3980	1.31	0.145	277.5	225.5	277.5	2,128	-89,840	0	686	-89,154
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.94	0.00	0.3980	0.30	0.145	126.4	32.1	126.4	2,128	93,746	0	70	93,816
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.94	45.00	0.3980	1.31	0.145	277.5	225.5	277.5	2,128	-89,840	117	686	-89,037
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.94	45.00	0.3980	0.30	0.145	126.4	32.1	126.4	2,128	93,746	53	70	93,869
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.94	45.00	0.3980	1.31	0.145	277.5	225.5	277.5	2,128	-89,840	-117	686	-89,271
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.94	45.00	0.3980	0.30	0.145	126.4	32.1	126.4	2,128	93,746	-53	70	93,763
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.80	48.47	0.3980	0.41	0.145	170.9	138.9	170.9	2,128	-29,653	-16	-463	-30,133
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.80	48.47	0.3980	0.41	0.145	170.9	138.9	170.9	2,128	-29,653	12	-463	-30,104
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.80	18.01	0.3980	0.22	0.145	125.7	319.4	125.7	2,128	30,349	4	-347	30,006
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.57	6.26	0.3980	1.31	0.145	277.5	225.5	277.5	2,128	-70,300	-45	537	-69,807
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.72	6.30	0.3980	1.31	0.145	277.5	225.5	277.5	2,128	-68,053	-45	520	-67,578
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.88	6.35	0.3980	0.30	0.145	126.4	32.1	126.4	2,128	68,699	22	51	68,772
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.88	6.35	0.3980	0.41	0.145	170.9	138.9	170.9	2,128	-23,955	30	-374	-24,300
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.88	6.35	0.3980	0.22	0.145	125.7	319.4	125.7	2,128	24,517	22	-281	24,259
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.18	6.39	0.3980	0.30	0.145	126.4	32.1	126.4	2,128	66,767	8	50	66,824
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.18	6.39	0.3980	0.22	0.145	125.7	319.4	125.7	2,128	23,828	8	-273	23,563

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.49	6.44	0.3980	0.22	0.145	125.7	319.4	125.7	2,128	23,144	8	-265	22,887
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.19	6.45	0.3980	0.30	0.145	126.4	32.1	126.4	2,128	64,019	22	48	64,089
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.57	6.26	0.3980	0.30	0.145	126.4	32.1	126.4	2,128	73,361	22	55	73,437
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.57	6.26	0.3980	0.41	0.145	170.9	138.9	170.9	2,128	-25,581	29	-400	-25,951
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.57	6.26	0.3980	0.22	0.145	125.7	319.4	125.7	2,128	26,181	22	-300	25,903
Totals:											165,389	102	362	165,853	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.74	6.65	1.3300	4.99	0.337	277.5	225.5	277.6	925	-22,700	-119	813	-22,006
CATV	CATV 1.0	Unknown, COMMUNICATION	19.74	6.65	1.3300	2.50	0.337	170.9	138.9	170.9	925	-8,260	70	-605	-8,795
CATV	CATV 1.0	Unknown, COMMUNICATION	19.74	6.65	1.3300	1.71	0.337	125.7	319.4	125.7	925	8,454	51	-454	8,051
CATV	CATV 1.0	Unknown, COMMUNICATION	19.74	6.65	1.3300	1.74	0.337	126.4	32.1	126.4	925	23,687	52	83	23,822
Telco	TELE 1.5	Unknown, COMMUNICATION	18.35	6.74	1.5000	2.03	0.900	126.4	32.1	126.4	2,000	47,626	97	84	47,807
Telco	TELE 1.5	Unknown, COMMUNICATION	18.35	6.74	1.5000	2.98	0.900	170.9	138.9	170.9	2,000	-16,607	123	-615	-17,099
Telco	TELE 1.5	Unknown, COMMUNICATION	18.35	6.74	1.5000	2.00	0.900	125.7	319.4	125.7	2,000	16,997	91	-461	16,626
Telco	TELE 1.5	Unknown, COMMUNICATION	17.96	6.76	1.5000	2.98	0.900	170.9	138.9	170.9	2,000	-16,250	-46	-602	-16,898
Totals:											32,946	319	-1,757	31,509	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.12	5.12	228.5	228.5	50.00	4.50	3.50	96.00	0	-711	-711	
Normal	Crossarm	30.80	5.26	138.9	138.9	50.00	4.50	3.50	96.00	0	648	648	
Totals:											0	-63	-63

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 260.0°	Riser	KU, UTILITY	23.56	5.45	260.0	260.0	23.56	282.68	2.50	2.50	282.68	-6	-4	-10
											Totals:	-6	-4	-10

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.31	0.00	228.5	0.0	6.00	3.50	7.50	0	-1	-1	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.31	45.00	312.0	0.0	6.00	3.50	7.50	29	-1	28	
Pin	Pin Insulator - 5 kV	KU, UTILITY	33.31	-45.00	145.0	0.0	6.00	3.50	7.50	-29	-1	-30	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.80	45.00	222.3	0.0	3.00	3.80	12.75	-23	-1	-24	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.80	-45.00	55.6	0.0	3.00	3.80	12.75	17	-1	16	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.80	0.00	318.9	180.0	3.00	3.80	12.75	3	-1	2	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.57	0.00	228.5	228.5	2.00	3.00	3.19	-2	0	-2	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.72	0.00	228.5	228.5	2.00	3.00	3.19	-2	0	-2	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.88	0.00	32.1	32.1	2.00	3.00	3.19	2	0	2	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.18	0.00	319.4	319.4	2.00	3.00	3.19	1	0	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.49	0.00	319.4	319.4	2.00	3.00	3.19	1	0	1	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.19	0.00	32.1	32.1	2.00	3.00	3.19	2	0	2	
Bolt	Single Bolt	Unknown, COMMUNICATION	19.74	0.00	220.3	310.3	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.74	0.00	49.2	319.2	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	18.35	0.00	32.1	122.1	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.35	0.00	49.2	319.2	5.00	3.00	0.00	5	0	5	
Bolt	Single Bolt	Unknown, COMMUNICATION	17.96	0.00	138.9	228.9	5.00	3.00	0.00	-2	0	-2	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.57	0.00	32.1	32.1	2.00	3.00	3.19	2	0	2	
										Totals:	9	-6	3

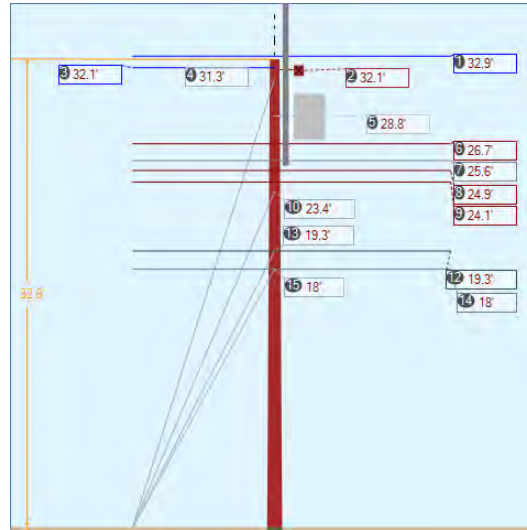
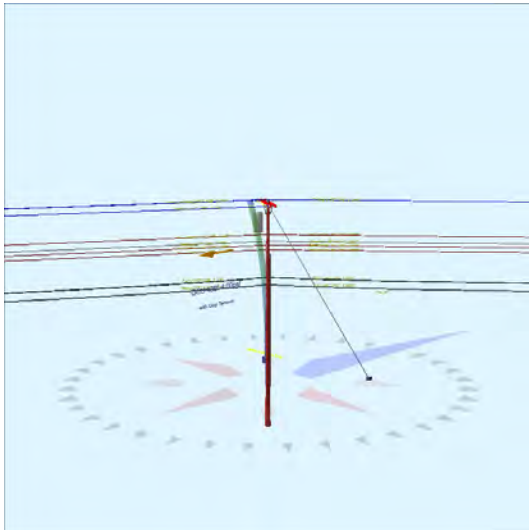
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	25.60	0.00	16.59	0.375	75.00	211.0	56.9	0.273	28.83	1.08
EHS 3/8	Span/Head	KU, UTILITY	23.09	23.09	170.85	0.375	75.00	138.9	0.0	0.273	169.02	6.26
EHS 1/4	Down	Unknown, COMMUNICATION	19.20	0.00	12.83	0.25	75.00	211.0	56.1	0.121	21.40	1.28
EHS 1/4	Down	Unknown, COMMUNICATION	17.96	0.00	11.97	0.25	75.00	320.5	56.1	0.121	19.89	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,457	7,689	5,954	4,985	3,255	-3,252	-81,700
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	6,465	5,877	5,877	0	5,877	-2,047	-47,626
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,615	5,104	4,205	3,489	2,348	-2,345	-43,982
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	-23
Totals:										8,473	11,480	-7,645	-173,330

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	16.59	211.0	20,000	1.00	20,000	7,689	5,954	38.4
Single Helix Anchor			18.00	170.85	138.9	20,000	1.00	20,000	5,877	5,877	29.4
Single Helix Anchor			18.00	12.83	211.0	20,000	1.00	20,000	5,104	4,205	25.5
Single Helix Anchor			18.00	11.97	320.5	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.94	33.79	9.71	18.86	6.69	10.62	1.60e+6	60.00	57.00	33.63	154,729	1544.26	8.77

Pole Num:	184W - 74256-33106	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.36	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.00	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067205 Deg	Longitude:	-84.450283 Deg	Elevation:	891.247380795443		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.3	31.3
Groundline	4.7	0.0
Vertical	31.1	28.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	4,091	197.3
Groundline	2,554	185.2
GL Allowable	64,476	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	18.4	313.0		31.6	180.0	33.5	125.0
? EHS 3/8 (Down)			31.3	22.3	180.0	26.1	120.0
? EHS 3/8 (Down)			23.4	23.4	180.0	27.2	130.0
? Single Helix Anchor	17.3	313.0		5.7	180.0	6.1	130.0
? EHS 1/4 (Down)			19.3	18.9	180.0	22.4	130.0
? Single Helix Anchor	15.8	313.0		5.2	180.0	5.6	130.0
? EHS 1/4 (Down)			18.0	17.4	180.0	20.7	130.0
? Single Helix Anchor	18.4	32.0		52.1	180.0	52.8	230.5
? EHS 3/8 (Down)			31.3	75.2	180.0	83.8	230.5
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 185.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	7,172	1662.3	30,588	1197.6	47.4	23,037	487	6	23,043	338.9
Comms	679	157.3	1,780	69.7	2.8	1,340	530	6	1,346	19.8
GuyBraces	-7,684	-1781.0	-30,774	-1204.9	-47.7	-23,177	23,887	276	-22,902	-336.8
PowerEquipments	42	9.6	304	11.9	0.5	229	694	8	237	3.5
Pole	163	37.8	382	15.0	0.6	288	1,524	18	306	4.5
Crossarms	51	11.9	231	9.0	0.4	174	190	2	176	2.6
Risers	0	0.0	-1	-0.1	0.0	-1	44	1	-1	0.0
Insulators	9	2.1	45	1.8	0.1	34	68	1	35	0.5
Pole Load	431	100.0	2,554	100.0	4.0	1,924	27,424	316	2,240	32.9
Pole Reserve Capacity			61,922		96.0	4,876			4,560	67.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 185.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	409	94.7	2,435	95.4	3.8	1,834	22,690	262	2,096	30.8
Unknown, COMMUNICATION	-192	-44.4	-494	-19.4	-0.8	-372	3,021	35	-338	-5.0
Pole	163	37.8	382	15.0	0.6	288	1,524	18	306	4.5
<Undefined>	51	11.9	231	9.0	0.4	174	190	2	176	2.6
Totals:	431	100.0	2,554	100.0	4.0	1,924	27,424	316	2,240	32.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.05	48.42	0.3980	0.23	0.145	126.4	212.1	126.4	2,128	79,078	-1	255	79,332
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.05	48.42	0.3980	0.23	0.145	126.4	212.1	126.4	2,128	79,078	9	255	79,342
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.86	18.00	0.3980	0.22	0.145	119.2	47.5	119.2	2,128	-67,285	27	509	-66,749
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.86	18.00	0.3980	0.23	0.145	126.4	212.1	126.4	2,128	81,124	28	262	81,414
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.74	6.19	0.3980	0.22	0.145	119.2	47.5	119.2	2,128	-54,714	11	414	-54,288
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.74	6.19	0.3980	0.23	0.145	126.4	212.1	126.4	2,128	65,967	12	213	66,192
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.57	6.26	0.3980	0.22	0.145	119.2	47.5	119.2	2,128	-52,320	12	396	-51,912
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.57	6.26	0.3980	0.23	0.145	126.4	212.1	126.4	2,128	63,081	12	203	63,296
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.88	6.30	0.3980	0.22	0.145	119.2	47.5	119.2	2,128	-50,913	12	385	-50,516
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.88	6.30	0.3980	0.23	0.145	126.4	212.1	126.4	2,128	61,384	12	198	61,595
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.09	6.34	0.3980	0.22	0.145	119.2	47.5	119.2	2,128	-49,286	12	373	-48,901
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.09	6.34	0.3980	0.23	0.145	126.4	212.1	126.4	2,128	59,423	12	192	59,627
										Totals:	214,618	158	3,655	218,432	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	19.28	6.62	1.3300	1.61	0.337	119.2	47.5	119.2	925	-17,145	35	608	-16,502
CATV	CATV 1.0	Unknown, COMMUNICATION	19.28	6.62	1.3300	1.72	0.337	126.4	212.1	126.4	925	20,671	37	313	21,021
Telco	TELE 1.5	Unknown, COMMUNICATION	18.01	6.70	1.5000	1.88	0.900	119.2	47.5	119.2	2,000	-34,630	61	621	-33,947
Telco	TELE 1.5	Unknown, COMMUNICATION	18.01	6.70	1.5000	2.02	0.900	126.4	212.1	126.4	2,000	41,752	65	319	42,136
Totals:											10,649	198	1,861	12,708	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-25KVA	KU, UTILITY	28.75	20.57	220.0	220.0	365.00	39.00	--	22.00	--	976	1,194	2,170
Totals:											976	1,194	2,170

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		32.05	5.13	212.1	212.1	50.00	4.50	3.50	96.00	0	1,648	1,648	
Totals:											0	1,648	1,648

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	KU, UTILITY	23.24	5.45	360.0	360.0	23.24	278.91	4.00	4.00	278.91	-10	0	-10
Totals:											-10	0	-10

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.05	45.00	295.6	0.0	3.00	3.80	12.75	-2	75	73
Deadend	Deadend Insulator - 15 kV KU, UTILITY	32.05	-45.00	128.5	0.0	3.00	3.80	12.75	17	75	92
Pin	Pin Insulator - 5 kV KU, UTILITY	32.24	-18.00	137.9	0.0	6.00	3.50	7.50	15	82	98
Spool	Spool Insulator - 25 kV KU, UTILITY	26.74	0.00	129.8	39.8	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV KU, UTILITY	25.57	0.00	129.8	39.8	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV KU, UTILITY	24.88	0.00	129.8	39.8	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV KU, UTILITY	24.09	0.00	129.8	39.8	2.00	3.00	3.19	1	11	12

Bolt	Three Bolt	Unknown, COMMUNICATION	19.28	0.00	137.5	47.5	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	18.01	0.00	137.5	47.5	5.00	3.00	0.00	4	0	4
Totals:										42	280	322

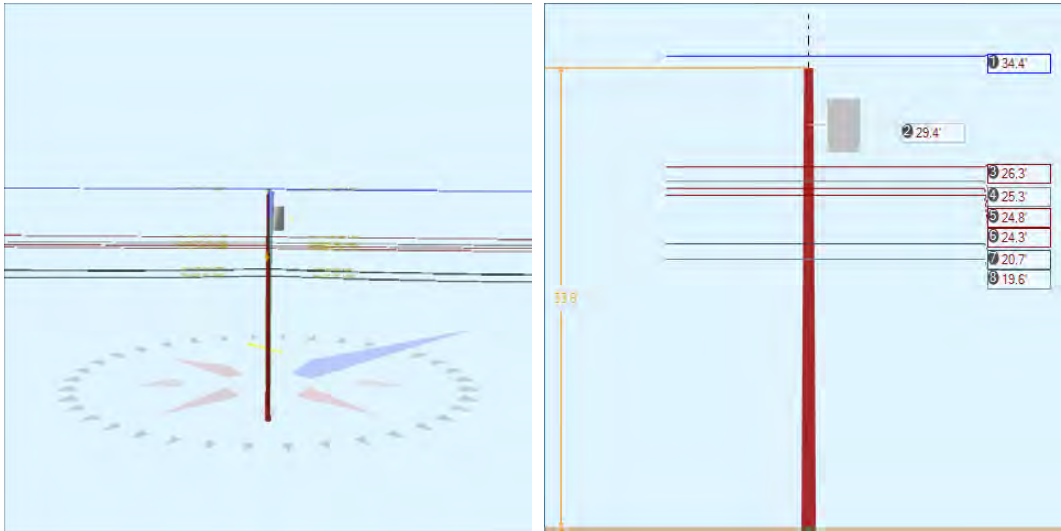
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	31.28	0.00	18.39	0.375	75.00	313.0	59.3	0.273	34.64	0.67
EHS 3/8	Down	KU, UTILITY	23.44	0.00	18.39	0.375	75.00	313.0	51.7	0.273	28.09	0.57
EHS 1/4	Down	Unknown, COMMUNICATION	19.27	0.00	17.29	0.25	75.00	313.0	48.0	0.121	24.17	0.39
EHS 1/4	Down	Unknown, COMMUNICATION	18.01	0.00	15.83	0.25	75.00	313.0	48.5	0.121	22.25	0.33
EHS 3/8	Down	KU, UTILITY	31.25	0.00	18.39	0.375	75.00	32.0	59.3	0.273	34.62	2.27

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,611	3,283	3,086	2,655	1,574	-965	-29,488
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,766	3,423	3,242	2,544	2,009	-1,231	-28,340
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,338	1,216	1,134	842	760	-465	-8,795
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,239	1,126	1,042	780	690	-423	-7,451
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,620	10,564	10,421	8,962	5,318	-4,747	-145,687
Totals:										15,784	10,350	-7,831	-219,761

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	18.39	313.0	20,000	1.00	20,000	6,691	6,314	33.5
Single Helix Anchor			18.00	17.29	313.0	20,000	1.00	20,000	1,216	1,134	6.1
Single Helix Anchor			18.00	15.83	313.0	20,000	1.00	20,000	1,126	1,042	5.6
Single Helix Anchor			18.00	18.39	32.0	20,000	1.00	20,000	10,564	10,421	52.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	28.21	34.71	9.36	26.02	6.69	10.51	1.60e+6	60.00	57.00	32.64	88,201	881.79	3.22

Pole Num:	185W - 74338-34198	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.43	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.34	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067416 Deg	Longitude:	-84.449987 Deg	Elevation:	869.901581048868		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.0	0.0
Groundline	30.0	0.0
Vertical	18.8	22.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,557	130.7
Groundline	19,557	130.7
GL Allowable	66,515	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 130.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	329	39.7	9,107	46.6	13.7	927	394	4	931	13.7
Comms	270	32.6	5,751	29.4	8.7	585	517	6	591	8.7
PowerEquipments	55	6.6	1,587	8.1	2.4	162	1,216	14	175	2.6
Pole	169	20.3	2,890	14.8	4.4	294	1,589	18	312	4.6
Insulators	6	0.8	222	1.1	0.3	23	59	1	23	0.3
Pole Load	830	100.0	19,557	100.0	29.4	1,991	3,774	43	2,033	29.9
Pole Reserve Capacity			46,958		70.6	4,809			4,767	70.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 130.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	391	47.1	10,905	55.8	16.4	1,110	1,650	19	1,129	16.6
Unknown, COMMUNICATION	270	32.6	5,761	29.5	8.7	587	536	6	593	8.7
Pole	169	20.3	2,890	14.8	4.4	294	1,589	18	312	4.6
Totals:	830	100.0	19,557	100.0	29.4	1,991	3,774	43	2,033	29.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.45	0.00	0.3980	0.27	0.145	120.1	47.6	120.1	2,128	8,798	0	1,076	9,874
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.45	0.00	0.3980	0.27	0.145	119.2	227.5	119.2	2,128	-8,671	0	1,068	-7,603
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.34	6.27	0.3980	0.27	0.145	120.1	47.6	120.1	2,128	6,723	20	822	7,565
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.34	6.27	0.3980	0.27	0.145	119.2	227.5	119.2	2,128	-6,626	20	816	-5,790
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.33	0.3980	0.27	0.145	120.1	47.6	120.1	2,128	6,456	21	789	7,266
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.29	6.33	0.3980	0.27	0.145	119.2	227.5	119.2	2,128	-6,363	21	783	-5,559
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	6.36	0.3980	0.27	0.145	120.1	47.6	120.1	2,128	6,322	21	773	7,116

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.77	6.36	0.3980	0.27	0.145	119.2	227.5	119.2	2,128	-6,231	21	767	-5,443
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.28	6.39	0.3980	0.27	0.145	120.1	47.6	120.1	2,128	6,197	21	758	6,976
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.28	6.39	0.3980	0.27	0.145	119.2	227.5	119.2	2,128	-6,108	21	752	-5,335
Totals:											498	165	8,404	9,068	

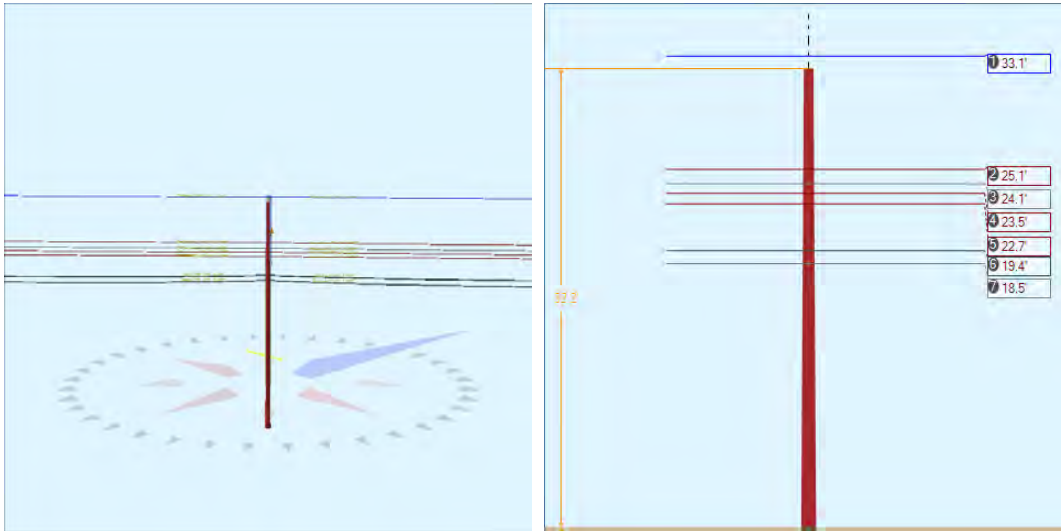
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.73	6.59	1.3300	1.64	0.337	120.1	47.6	120.1	925	2,300	52	1,318	3,670
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.73	6.59	1.3300	1.62	0.337	119.2	227.5	119.2	925	-2,266	51	1,308	-907
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.60	6.66	1.5000	1.91	0.900	120.1	47.6	120.1	2,000	4,702	91	1,363	6,156
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.60	6.66	1.5000	1.89	0.900	119.2	227.5	119.2	2,000	-4,634	90	1,352	-3,192
		COMMUNICATION													
Totals:											101	284	5,341	5,726	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.43	21.58	40.0	40.0	640.00	47.00	--	24.00	--	-27	1,608	1,581
Totals:											-27	1,608	1,581	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.58	0.00	0.0	0.0	13.00	9.00	10.50	0	156	156	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.34	0.00	137.6	47.6	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.29	0.00	137.6	47.6	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.77	0.00	137.6	47.6	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.28	0.00	137.6	47.6	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.73	0.00	137.6	47.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.60	0.00	137.6	47.6	5.00	3.00	0.00	5	0	5	
Totals:											18	202	221

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.58	33.73	9.72	14.88	6.69	10.62	1.60e+6	60.00	57.00	33.58	20,048	200.74	5.32

Pole Num:	186W - 74433-33283	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067649 Deg	Longitude:	-84.449672 Deg	Elevation:	859.201650391263		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.4	317.7
Groundline	28.4	317.7
Vertical	7.5	317.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	17,806	317.7
Groundline	17,806	317.7
GL Allowable	63,630	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 317.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	353	44.1	9,293	52.2	14.6	988	397	5	993	14.6
Comms	280	34.9	5,616	31.5	8.8	597	521	6	603	8.9
Pole	161	20.1	2,683	15.1	4.2	285	1,497	17	303	4.5
Insulators	7	0.8	214	1.2	0.3	23	59	1	23	0.3
Pole Load	800	100.0	17,806	100.0	28.0	1,894	2,473	29	1,923	28.3
Pole Reserve Capacity			45,824		72.0	4,906			4,877	71.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 317.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	288	36.0	7,828	44.0	12.3	833	354	4	837	12.3
Unknown, COMMUNICATION	351	43.8	7,295	41.0	11.5	776	623	7	783	11.5
Pole	161	20.1	2,683	15.1	4.2	285	1,497	17	303	4.5
Totals:	800	100.0	17,806	100.0	28.0	1,894	2,473	29	1,923	28.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.12	0.00	0.3980	0.27	0.145	121.1	47.4	121.1	2,128	170	0	1,051	1,221
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.12	0.00	0.3980	0.27	0.145	120.1	227.6	120.1	2,128	76	0	1,042	1,118
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.15	6.26	0.3980	0.27	0.145	121.1	47.4	121.1	2,128	129	21	798	948
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.15	6.26	0.3980	0.27	0.145	120.1	227.6	120.1	2,128	58	21	791	869
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.15	6.32	0.3980	0.27	0.145	121.1	47.4	121.1	2,128	124	21	766	911
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.15	6.32	0.3980	0.27	0.145	120.1	227.6	120.1	2,128	55	21	760	836
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.46	6.36	0.3980	0.27	0.145	121.1	47.4	121.1	2,128	121	21	744	886
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.46	6.36	0.3980	0.27	0.145	120.1	227.6	120.1	2,128	54	21	738	813
Secondary	ACSR 1/0 AWG 6/1 RAVEN	Unknown, COMMUNICATION	22.74	6.40	0.3980	0.27	0.145	121.1	47.4	121.1	2,128	117	21	721	859
Secondary	ACSR 1/0 AWG 6/1 RAVEN	Unknown, COMMUNICATION	22.74	6.40	0.3980	0.27	0.145	120.1	227.6	120.1	2,128	52	21	715	788
Totals:											955	168	8,126	9,249	

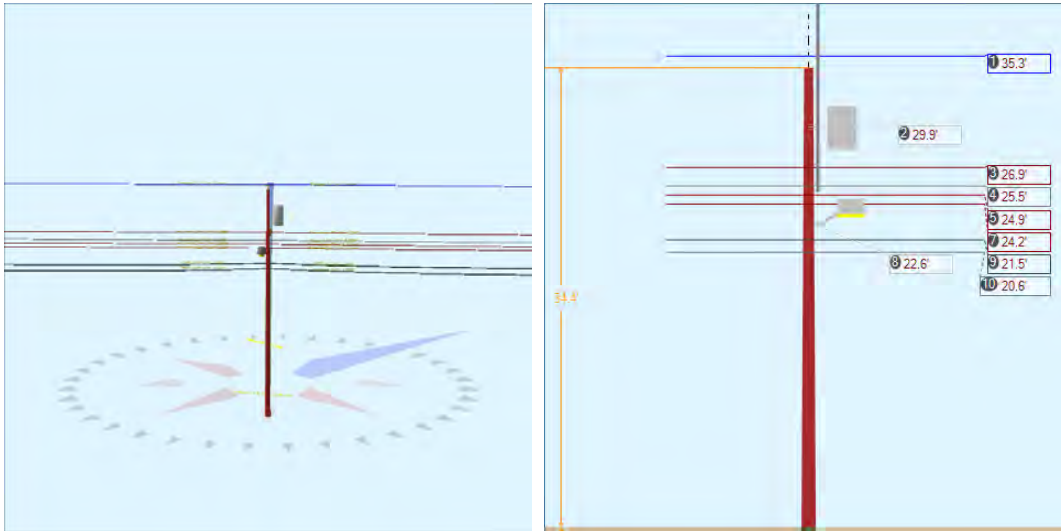
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.44	6.59	1.3300	1.65	0.337	121.1	47.4	121.1	925	43	52	1,256	1,352

CATV	CATV 1.0	Unknown, COMMUNICATION	19.44	6.59	1.3300	1.64	0.337	120.1	227.6	120.1	925	19	52	1,246	1,317
Telco	TELE 1.5	Unknown, COMMUNICATION	18.53	6.64	1.5000	1.93	0.900	121.1	47.4	121.1	2,000	90	92	1,309	1,490
Telco	TELE 1.5	Unknown, COMMUNICATION	18.53	6.64	1.5000	1.91	0.900	120.1	227.6	120.1	2,000	40	91	1,298	1,429
Totals:											192	287	5,110	5,589	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.24	0.00	0.0	0.0	13.00	9.00	10.50	0	150	150
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.15	0.00	317.5	227.5	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.15	0.00	317.5	227.5	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.46	0.00	317.5	227.5	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	Unknown, COMMUNICATION	22.74	0.00	317.5	227.5	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	19.44	0.00	317.5	227.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.53	0.00	317.5	227.5	5.00	3.00	0.00	5	0	5
Totals:										18	195	213

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.76	32.98	9.77	11.00	6.69	10.46	1.60e+6	60.00	57.00	32.24	33,060	329.78	13.33

Pole Num:	187W - 74517-33969	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.64	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067862 Deg	Longitude:	-84.449364 Deg	Elevation:	862.799617993993		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.1	0.0
Groundline	31.1	0.0
Vertical	14.9	21.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,864	320.3
Groundline	20,864	320.3
GL Allowable	68,297	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	335	38.2	9,394	45.0	13.8	930	399	4	934	13.7
Comms	275	31.4	6,108	29.3	8.9	605	523	6	610	9.0
PowerEquipments	42	4.7	1,467	7.0	2.2	145	694	8	153	2.2
Pole	174	19.8	3,054	14.6	4.5	302	1,645	18	321	4.7
Streetlights	20	2.3	214	1.0	0.3	21	86	1	22	0.3
Risers	25	2.8	401	1.9	0.6	40	47	1	40	0.6
Insulators	6	0.7	227	1.1	0.3	22	59	1	23	0.3
Pole Load	877	100.0	20,864	100.0	30.6	2,065	3,452	38	2,103	30.9
Pole Reserve Capacity			47,433		69.5	4,735			4,697	69.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	428	48.8	11,692	56.0	17.1	1,157	1,265	14	1,171	17.2
Unknown, COMMUNICATION	275	31.4	6,118	29.3	9.0	606	542	6	612	9.0
Pole	174	19.8	3,054	14.6	4.5	302	1,645	18	321	4.7
Totals:	877	100.0	20,864	100.0	30.6	2,065	3,452	38	2,103	30.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.25	0.00	0.3980	0.27	0.145	121.1	47.3	121.1	2,128	3,990	0	1,117	5,106
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.25	0.00	0.3980	0.27	0.145	121.1	227.4	121.1	2,128	-3,859	0	1,117	-2,742
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.91	6.28	0.3980	0.27	0.145	121.1	47.3	121.1	2,128	3,044	21	852	3,917
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.91	6.28	0.3980	0.27	0.145	121.1	227.4	121.1	2,128	-2,944	21	852	-2,071
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.54	6.36	0.3980	0.27	0.145	121.1	47.3	121.1	2,128	2,889	21	809	3,718
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.54	6.36	0.3980	0.27	0.145	121.1	227.4	121.1	2,128	-2,794	21	809	-1,964

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.86	6.40	0.3980	0.27	0.145	121.1	47.3	121.1	2,128	2,812	21	787	3,620
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.86	6.40	0.3980	0.27	0.145	121.1	227.4	121.1	2,128	-2,720	21	787	-1,911
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.19	6.44	0.3980	0.27	0.145	121.1	47.3	121.1	2,128	2,736	21	766	3,523
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.19	6.44	0.3980	0.27	0.145	121.1	227.4	121.1	2,128	-2,646	21	766	-1,859
Totals:											507	169	8,662	9,339	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.50	6.60	1.3300	1.65	0.337	121.1	47.3	121.1	925	1,057	52	1,387	2,497
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.50	6.60	1.3300	1.65	0.337	121.1	227.4	121.1	925	-1,023	52	1,388	418
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.57	6.65	1.5000	1.93	0.900	121.1	47.3	121.1	2,000	2,187	92	1,451	3,729
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.57	6.65	1.5000	1.93	0.900	121.1	227.4	121.1	2,000	-2,115	92	1,451	-572
		COMMUNICATION													
Totals:											106	288	5,677	6,072	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.89	20.61	40.0	40.0	365.00	39.00	--	22.00	--	214	1,244	1,458
Totals:											214	1,244	1,458	

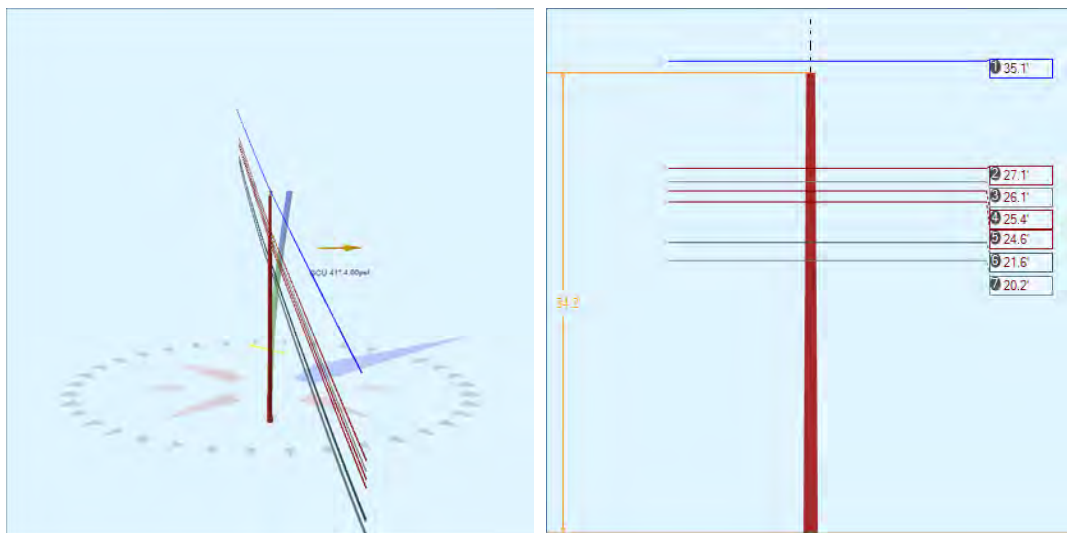
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	22.57	4.03	150.0	150.0	45.00	24.00	20.00	3.00	36.00	-234	447	213
Totals:											-234	447	213	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 180.0°	Riser	KU, UTILITY	24.81	5.45	180.0	180.0	24.81	297.67	2.50	2.50	297.67	-9	407	399
Totals:											-9	407	399	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.38	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.91	0.00	317.3	227.3	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.54	0.00	317.3	227.3	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.86	0.00	317.3	227.3	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.19	0.00	317.3	227.3	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	21.50	0.00	317.3	227.3	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.57	0.00	317.3	227.3	5.00	3.00	0.00	5	0	5
Totals:										19	207	225

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.58	33.54	9.86	14.01	6.69	10.71	1.60e+6	60.00	57.00	34.38	23,221	231.65	6.71

Pole Num:	188W - 74700-33705	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.76	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.59	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068764 Deg	Longitude:	-84.448697 Deg	Elevation:	869.443899865115		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.3	41.2
Groundline	38.3	41.2
Vertical	9.3	41.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,751	41.2
Groundline	25,751	41.2
GL Allowable	67,993	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 41.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	515	48.6	14,519	56.4	21.4	1,447	484	5	1,452	21.4
Comms	364	34.4	7,980	31.0	11.7	795	635	7	802	11.8
Pole	174	16.4	3,025	11.8	4.5	302	1,636	18	320	4.7
Insulators	7	0.6	227	0.9	0.3	23	59	1	23	0.3
Pole Load	1,060	100.0	25,751	100.0	37.9	2,567	2,814	31	2,598	38.2
Pole Reserve Capacity			42,242		62.1	4,233			4,202	61.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 41.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	522	49.2	14,735	57.2	21.7	1,469	524	6	1,474	21.7
Unknown, COMMUNICATION	364	34.4	7,991	31.0	11.8	796	654	7	804	11.8
Pole	174	16.4	3,025	11.8	4.5	302	1,636	18	320	4.7
Totals:	1,060	100.0	25,751	100.0	37.9	2,567	2,814	31	2,598	38.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.12	0.00	0.3980	0.26	0.145	118.8	131.1	118.8	2,128	482	0	1,093	1,576
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	35.12	0.00	0.3980	0.57	0.145	175.4	311.8	175.4	2,128	431	0	1,614	2,045
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.12	6.26	0.3980	0.26	0.145	118.8	131.1	118.8	2,128	372	20	844	1,237
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	27.12	6.26	0.3980	0.57	0.145	175.4	311.8	175.4	2,128	333	30	1,246	1,609
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.11	6.32	0.3980	0.26	0.145	118.8	131.1	118.8	2,128	358	21	813	1,192
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	26.11	6.32	0.3980	0.57	0.145	175.4	311.8	175.4	2,128	320	30	1,199	1,550
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.43	6.36	0.3980	0.26	0.145	118.8	131.1	118.8	2,128	349	21	792	1,161
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.43	6.36	0.3980	0.57	0.145	175.4	311.8	175.4	2,128	312	31	1,168	1,511
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.63	6.40	0.3980	0.26	0.145	118.8	131.1	118.8	2,128	338	21	766	1,125
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.63	6.40	0.3980	0.57	0.145	175.4	311.8	175.4	2,128	302	31	1,131	1,464
										Totals:	3,599	205	10,666	14,469

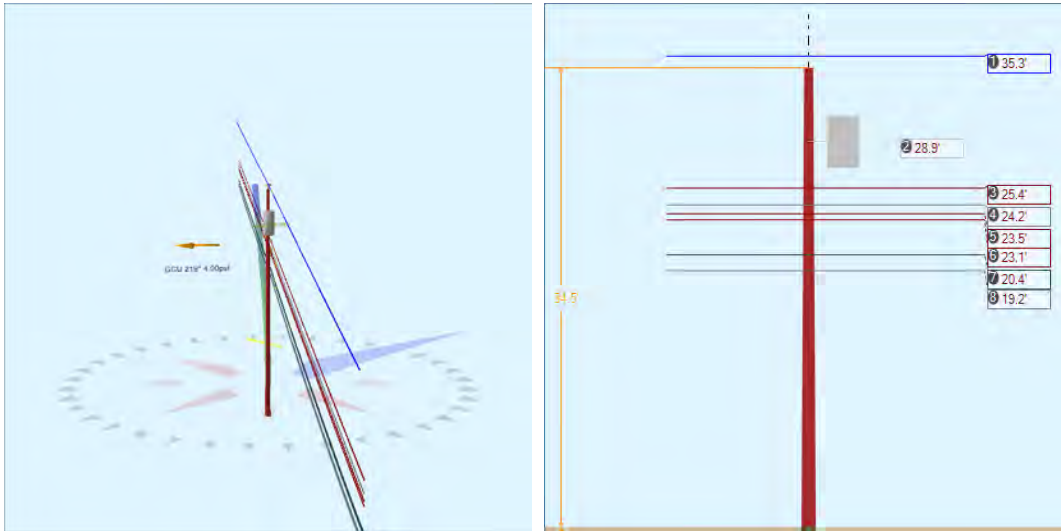
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	21.59	6.58	1.3300	1.62	0.337	118.8	131.1	118.8	925	129	51	1,369	1,549
CATV	CATV 1.0 Unknown, COMMUNICATION	21.59	6.58	1.3300	2.62	0.337	175.4	311.8	175.4	925	115	76	2,021	2,212

Telco	TELE 1.5	Unknown, COMMUNICATION	20.24	6.66	1.5000	1.88	0.900	118.8	131.1	118.8	2,000	261	90	1,403	1,755
Telco	TELE 1.5	Unknown, COMMUNICATION	20.24	6.66	1.5000	3.10	0.900	175.4	311.8	175.4	2,000	233	134	2,070	2,437
Totals:											739	351	6,863	7,953	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	34.24	0.00	0.0	0.0	13.00	9.00	10.50	0	159	159	
Spool	Spool Insulator - 25 kV KU, UTILITY	27.12	0.00	41.4	311.4	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	26.11	0.00	41.4	311.4	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.43	0.00	41.4	311.4	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.63	0.00	41.4	311.4	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt Unknown, COMMUNICATION	21.59	0.00	41.4	311.4	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	20.24	0.00	41.4	311.4	5.00	3.00	0.00	5	0	5	
Totals:										19	207	226

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	19.27	33.16	9.94	12.15	6.69	10.70	1.60e+6	60.00	57.00	34.24	30,109	302.56	10.75

Pole Num:	189W - 74793-33623	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.53	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.67	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068526 Deg	Longitude:	-84.448409 Deg	Elevation:	858.738753713671		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.9	0.0
Groundline	27.9	0.0
Vertical	17.7	22.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,672	213.9
Groundline	18,672	213.9
GL Allowable	68,504	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 213.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	329	39.4	8,523	45.7	12.4	843	394	4	847	12.5
Comms	270	32.4	5,085	27.2	7.4	503	516	6	508	7.5
PowerEquipments	55	6.5	1,820	9.7	2.7	180	1,216	13	193	2.8
Pole	174	20.9	3,058	16.4	4.5	302	1,652	18	321	4.7
Insulators	6	0.8	186	1.0	0.3	18	59	1	19	0.3
Pole Load	834	100.0	18,672	100.0	27.3	1,846	3,837	43	1,888	27.8
Pole Reserve Capacity			49,832		72.7	4,954			4,912	72.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 213.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	390	46.8	10,540	56.5	15.4	1,042	1,650	18	1,060	15.6
Unknown, COMMUNICATION	270	32.4	5,074	27.2	7.4	502	535	6	508	7.5
Pole	174	20.9	3,058	16.4	4.5	302	1,652	18	321	4.7
Totals:	834	100.0	18,672	100.0	27.3	1,846	3,837	43	1,888	27.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.35	0.00	0.3980	0.27	0.145	120.3	131.2	120.3	2,128	9,554	0	1,105	10,659
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.35	0.00	0.3980	0.26	0.145	118.8	311.1	118.8	2,128	-9,424	0	1,091	-8,332
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.45	6.37	0.3980	0.27	0.145	120.3	131.2	120.3	2,128	6,875	-21	795	7,649
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.45	6.37	0.3980	0.26	0.145	118.8	311.1	118.8	2,128	-6,781	-21	785	-6,017
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.17	6.44	0.3980	0.27	0.145	120.3	131.2	120.3	2,128	6,530	-21	755	7,265
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.17	6.44	0.3980	0.26	0.145	118.8	311.1	118.8	2,128	-6,441	-21	746	-5,716
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.53	6.48	0.3980	0.27	0.145	120.3	131.2	120.3	2,128	6,356	-21	735	7,070

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.53	6.48	0.3980	0.26	0.145	118.8	311.1	118.8	2,128	-6,269	-21	726	-5,564
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.06	6.51	0.3980	0.27	0.145	120.3	131.2	120.3	2,128	6,230	-21	720	6,929
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.06	6.51	0.3980	0.26	0.145	118.8	311.1	118.8	2,128	-6,145	-21	712	-5,454
Totals:											485	-168	8,171	8,488	

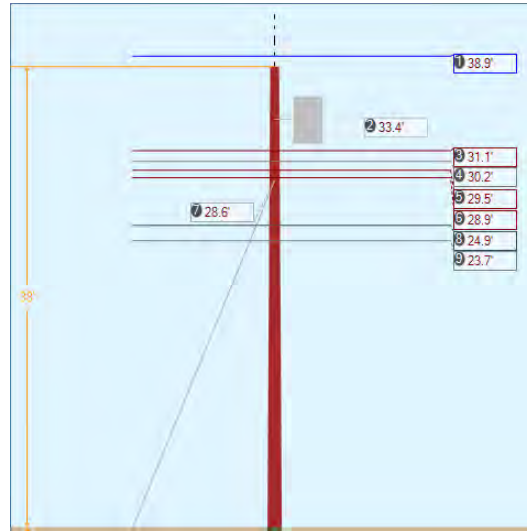
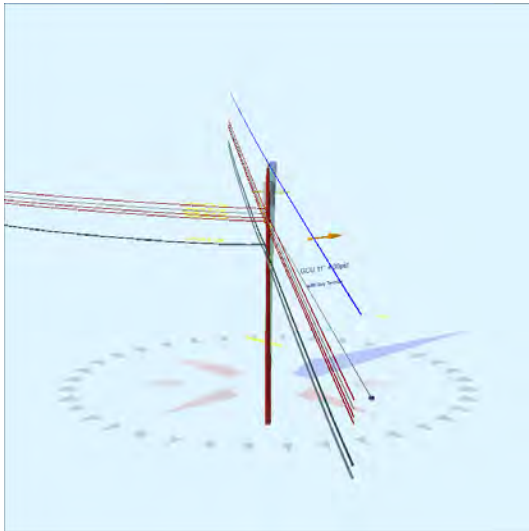
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.45	6.66	1.3300	1.64	0.337	120.3	131.2	120.4	925	2,401	-52	1,302	3,651
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.45	6.66	1.3300	1.62	0.337	118.8	311.1	118.8	925	-2,369	-51	1,286	-1,134
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.25	6.73	1.5000	1.91	0.900	120.3	131.2	120.4	2,000	4,887	-92	1,339	6,135
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.25	6.73	1.5000	1.88	0.900	118.8	311.1	118.8	2,000	-4,821	-91	1,323	-3,589
		COMMUNICATION													
Totals:											99	-286	5,251	5,064	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.92	21.67	130.0	130.0	640.00	47.00	--	24.00	--	233	1,579	1,812
Totals:											233	1,579	1,812	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.47	0.00	0.0	0.0	13.00	9.00	10.50	0	160	160	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.45	0.00	41.2	131.2	2.00	3.00	3.19	-2	12	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.17	0.00	41.2	131.2	2.00	3.00	3.19	-2	11	9	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.53	0.00	41.2	131.2	2.00	3.00	3.19	-2	11	9	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.06	0.00	41.2	131.2	2.00	3.00	3.19	-2	11	9	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.45	0.00	41.2	131.2	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.25	0.00	41.2	131.2	5.00	3.00	0.00	-5	0	-5	
Totals:											-19	204	186

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.24	33.64	9.84	14.93	6.69	10.72	1.60e+6	60.00	57.00	34.47	21,706	216.76	5.65

Pole Num:	190W - 75209-33188	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.14	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067290 Deg	Longitude:	-84.446739 Deg	Elevation:	855.646315929544		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.2	0.0
Groundline	22.2	0.0
Vertical	2.7	250.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,762	342.1
Groundline	19,762	342.1
GL Allowable	91,935	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.3	70.0		2.4	11.2	13.6	230.0
? EHS 3/8 (Down)			28.6	3.4	11.2	21.5	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 342.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	245	36.1	7,690	38.9	8.4	566	547	5	571	8.4
Comms	177	26.1	4,130	20.9	4.5	304	664	6	310	4.6
GuyBraces	17	2.6	499	2.5	0.5	37	606	6	42	0.6
PowerEquipments	48	7.1	3,681	18.6	4.0	271	1,216	11	282	4.1
Pole	186	27.4	3,568	18.1	3.9	263	2,207	20	283	4.2
Insulators	6	0.8	195	1.0	0.2	14	59	1	15	0.2
Pole Load	678	100.0	19,762	100.0	21.5	1,454	5,298	48	1,502	22.1
Pole Reserve Capacity			72,173		78.5	5,346			5,298	77.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 342.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	316	46.5	12,070	61.1	13.1	888	2,408	22	910	13.4
Unknown, COMMUNICATION	177	26.1	4,124	20.9	4.5	303	683	6	310	4.6
Pole	186	27.4	3,568	18.1	3.9	263	2,207	20	283	4.2
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	678	100.0	19,762	100.0	21.5	1,454	5,298	48	1,502	22.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.91	0.00	0.3980	0.22	0.145	115.1	130.8	115.1	2,128	-91,985	0	531 -91,454
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.91	0.00	0.3980	0.49	0.145	171.8	311.3	171.8	2,128	92,470	0	777 93,247
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.10	6.57	0.3980	0.22	0.145	115.1	130.8	115.1	2,128	-73,478	-8	424 -73,061
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.10	6.57	0.3980	0.05	0.145	56.7	249.5	56.7	150	-279	-4	392 109
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.10	6.57	0.3980	0.49	0.145	171.8	311.3	171.8	2,128	73,865	-11	621 74,475
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.21	6.62	0.3980	0.22	0.145	115.1	130.8	115.1	2,128	-71,393	-8	412 -70,988

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.21	6.62	0.3980	0.05	0.145	56.7	249.5	56.7	150	-271	-4	381	106
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.21	6.62	0.3980	0.49	0.145	171.8	311.3	171.8	2,128	71,769	-12	603	72,361
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.49	6.67	0.3980	0.22	0.145	115.1	130.8	115.1	2,128	-69,675	-8	402	-69,281
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.49	6.67	0.3980	0.05	0.145	56.7	249.5	56.7	150	-264	-4	372	104
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.49	6.67	0.3980	0.49	0.145	171.8	311.3	171.8	2,128	70,043	-12	589	70,620
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.88	6.70	0.3980	0.22	0.145	115.1	130.8	115.1	2,128	-68,234	-8	394	-67,848
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.88	6.70	0.3980	0.05	0.145	56.7	249.5	56.7	150	-259	-4	364	101
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.88	6.70	0.3980	0.49	0.145	171.8	311.3	171.8	2,128	68,594	-12	576	69,159
Totals:											904	-92	6,837	7,648	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.94	6.94	1.3300	1.55	0.337	115.1	130.8	115.1	925	-25,613	-27	693	-24,948
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.94	6.94	1.3300	2.54	0.337	171.8	311.3	171.8	925	25,748	-40	1,014	26,722
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.94	6.94	1.3300	0.71	0.337	56.7	249.5	56.7	150	-224	-13	641	404
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.66	7.01	1.5000	1.80	0.900	115.1	130.8	115.1	2,000	-52,545	-48	718	-51,874
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.66	7.01	1.5000	3.01	0.900	171.8	311.3	171.8	2,000	52,822	-71	1,052	53,803
		COMMUNICATION													
Totals:											189	-199	4,118	4,107	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	33.44	21.93	320.0	320.0	640.00	47.00	--	24.00	--	2,059	1,602	3,661
Totals:											2,059	1,602	3,661	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.04	0.00	0.0	0.0	13.00	9.00	10.50	0	154	154

Spool	Spool Insulator - 25 kV	KU, UTILITY	31.10	0.00	230.5	140.5	2.00	3.00	3.19	-1	13	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.21	0.00	230.5	140.5	2.00	3.00	3.19	-1	12	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.49	0.00	230.5	140.5	2.00	3.00	3.19	-1	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.88	0.00	230.5	140.5	2.00	3.00	3.19	-1	12	11
Bolt	Three Bolt	Unknown, COMMUNICATION	24.94	0.00	221.0	311.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	23.66	0.00	221.0	311.0	5.00	3.00	0.00	-3	0	-3
Totals:										-9	203	194

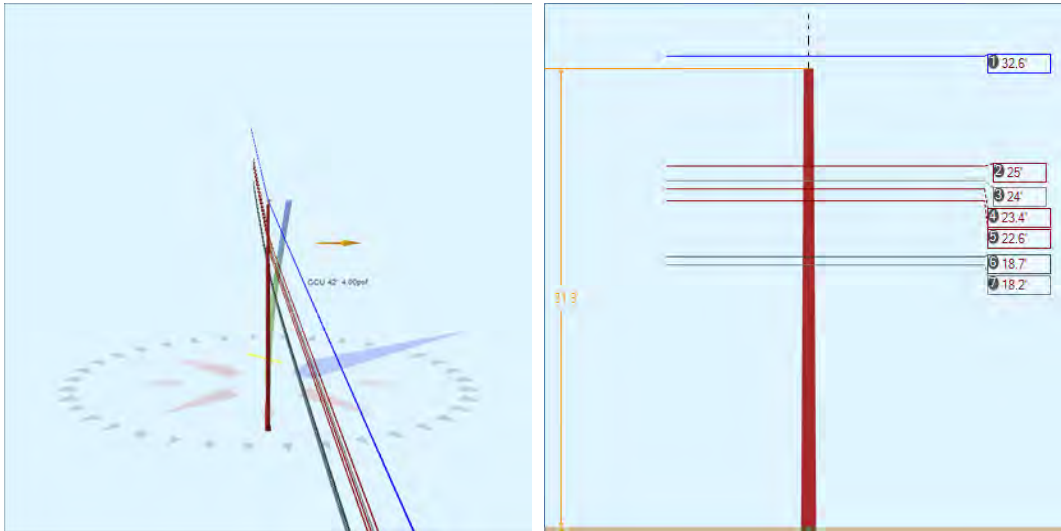
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Down	KU, UTILITY	28.63	0.00	19.32	0.375	75.00	70.0	55.8	0.273	32.84	0.10

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)	
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	2,984	2,713	476	393	267	10	496	
Totals:										393	267	10	496

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	19.32	70.0	20,000	1.00	20,000	2,713	476	13.6

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.43	33.82	10.80	11.11	7.32	11.83	1.60e+6	60.00	57.00	38.04	192,891	1962.13	37.04

Pole Num:	191W - 75257-33304	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.24	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.68	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067600 Deg	Longitude:	-84.447150 Deg	Elevation:	867.69480283164		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	47.4	0.0
Groundline	47.4	0.0
Vertical	8.5	18.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,398	42.1
Groundline	29,398	42.1
GL Allowable	62,607	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 42.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	711	54.7	18,410	62.6	29.4	1,994	496	6	2,000	29.4
Comms	424	32.6	8,185	27.8	13.1	887	651	8	894	13.1
Pole	158	12.2	2,592	8.8	4.1	281	1,464	17	298	4.4
Insulators	7	0.5	211	0.7	0.3	23	59	1	24	0.3
Pole Load	1,299	100.0	29,398	100.0	47.0	3,184	2,670	31	3,216	47.3
Pole Reserve Capacity			33,209		53.0	3,616			3,584	52.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 42.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	717	55.2	18,611	63.3	29.7	2,016	536	6	2,022	29.7
Unknown, COMMUNICATION	424	32.6	8,195	27.9	13.1	888	670	8	896	13.2
Pole	158	12.2	2,592	8.8	4.1	281	1,464	17	298	4.4
Totals:	1,299	100.0	29,398	100.0	47.0	3,184	2,670	31	3,216	47.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.64	0.00	0.3980	0.54	0.145	171.8	131.3	171.8	2,128	927	0	1,469	2,396
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.64	0.00	0.3980	0.32	0.145	129.8	313.0	129.8	2,128	1,134	0	1,110	2,244
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.01	6.24	0.3980	0.54	0.145	171.8	131.3	171.8	2,128	710	29	1,125	1,864
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.01	6.24	0.3980	0.32	0.145	129.8	313.0	129.8	2,128	869	22	850	1,741
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.02	6.30	0.3980	0.54	0.145	171.8	131.3	171.8	2,128	682	30	1,080	1,792
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.02	6.30	0.3980	0.32	0.145	129.8	313.0	129.8	2,128	834	22	816	1,673
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.43	6.33	0.3980	0.54	0.145	171.8	131.3	171.8	2,128	665	30	1,054	1,749
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.43	6.33	0.3980	0.32	0.145	129.8	313.0	129.8	2,128	814	23	797	1,633
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.61	6.38	0.3980	0.54	0.145	171.8	131.3	171.8	2,128	642	30	1,017	1,689
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.61	6.38	0.3980	0.32	0.145	129.8	313.0	129.8	2,128	786	23	769	1,577
										Totals:	8,064	209	10,086	18,359	

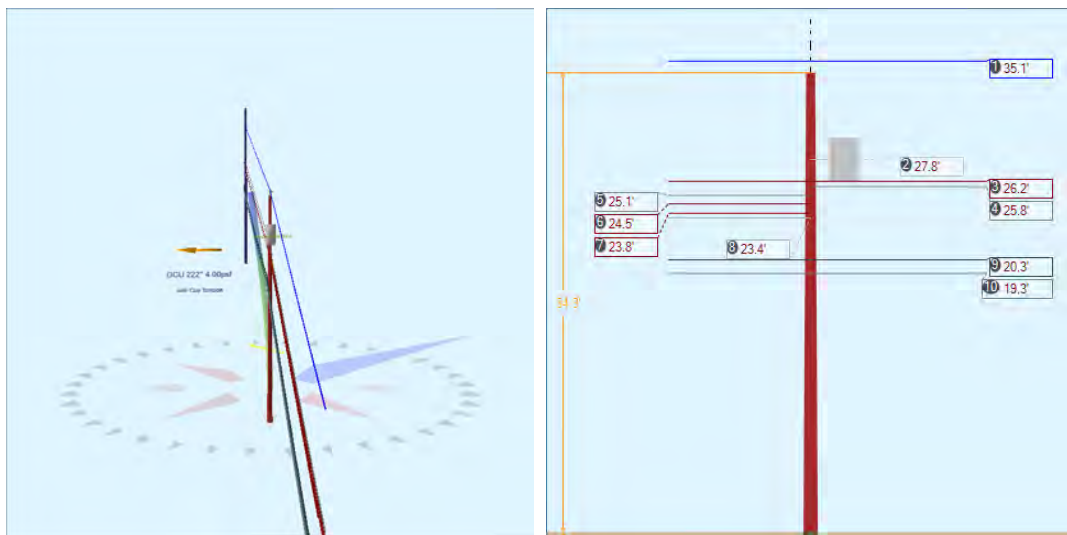
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	18.74	6.60	1.3300	2.55	0.337	171.8	131.3	171.8	925	231	74	1,717	2,023
CATV	CATV 1.0	Unknown, COMMUNICATION	18.74	6.60	1.3300	1.80	0.337	129.8	313.0	129.8	925	283	56	1,298	1,637

Telco	TELE 1.5	Unknown, COMMUNICATION	18.17	6.64	1.5000	3.02	0.900	171.8	131.3	171.8	2,000	485	130	1,820	2,435
Telco	TELE 1.5	Unknown, COMMUNICATION	18.17	6.64	1.5000	2.10	0.900	129.8	313.0	129.9	2,000	593	99	1,375	2,067
Totals:											1,592	359	6,210	8,162	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	31.76	0.00	0.0	0.0	13.00	9.00	10.50	0	148	148
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.01	0.00	42.1	312.1	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.02	0.00	42.1	312.1	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.43	0.00	42.1	312.1	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.61	0.00	42.1	312.1	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.74	0.00	42.1	312.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.17	0.00	42.1	312.1	5.00	3.00	0.00	5	0	5
Totals:										18	192	211

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.97	33.03	9.71	11.41	6.69	10.41	1.60e+6	60.00	57.00	31.76	31,449	314.17	11.76

Pole Num:	192W - 75073-33378	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.59	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067866 Deg	Longitude:	-84.447482 Deg	Elevation:	870.90853949399		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	40.9	0.0
Groundline	40.9	0.0
Vertical	1.6	20.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,475	204.6
Groundline	27,475	204.6
GL Allowable	68,021	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	120.3	312.0		26.6	222.0	27.5	130.0
? EHS 3/8 (Span/Head)			23.4	38.4	222.0	43.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 204.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,132	190.5	52,658	191.7	77.4	5,249	333	4	5,253	77.2
Comms	329	29.4	6,804	24.8	10.0	678	540	6	684	10.1
GuyBraces	-1,554	-138.9	-36,525	-132.9	-53.7	-3,641	28	0	-3,641	-53.5
PowerEquipments	40	3.6	1,427	5.2	2.1	142	694	8	150	2.2
Pole	166	14.8	2,889	10.5	4.3	288	1,636	18	306	4.5
Insulators	7	0.6	222	0.8	0.3	22	63	1	23	0.3
Pole Load	1,119	100.0	27,475	100.0	40.4	2,739	3,293	37	2,775	40.8
Pole Reserve Capacity			40,546		59.6	4,061			4,025	59.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 204.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	624	55.8	17,772	64.7	26.1	1,772	1,098	12	1,784	26.2
Unknown, COMMUNICATION	329	29.4	6,814	24.8	10.0	679	559	6	685	10.1
Pole	166	14.8	2,889	10.5	4.3	288	1,636	18	306	4.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,119	100.0	27,475	100.0	40.4	2,739	3,293	37	2,775	40.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.13	0.00	0.3980	0.32	0.145	129.8	133.0	129.8	2,128	30,612	0	1,134	31,746
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.13	0.00	0.3980	0.27	0.145	120.3	312.0	120.3	2,128	-28,997	0	1,057	-27,939
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.18	6.31	0.3980	0.32	0.145	129.8	133.0	129.8	2,128	22,799	21	845	23,665
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.18	6.31	0.3980	0.27	0.145	120.3	312.0	120.3	2,128	-21,596	20	787	-20,789
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.79	6.34	0.3980	0.27	0.145	120.3	312.0	120.3	2,128	-21,275	-6	776	-20,506
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.13	6.38	0.3980	0.32	0.145	129.8	133.0	129.8	2,128	21,888	7	811	22,706

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.49	6.41	0.3980	0.32	0.145	129.8	133.0	129.8	2,128	21,328	7	790	22,125
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.79	6.45	0.3980	0.32	0.145	129.8	133.0	129.8	2,128	20,723	7	768	21,498
Totals:											45,482	57	6,968	52,507	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.31	6.66	1.3300	1.80	0.337	129.8	133.0	129.8	925	7,688	54	1,335	9,077
CATV	CATV 1.0	Unknown, COMMUNICATION	20.31	6.66	1.3300	1.64	0.337	120.3	312.0	120.4	925	-7,282	50	1,245	-5,987
Telco	TELE 1.5	Unknown, COMMUNICATION	19.29	6.72	1.5000	2.10	0.900	129.8	133.0	129.9	2,000	15,788	95	1,386	17,269
Telco	TELE 1.5	Unknown, COMMUNICATION	19.29	6.72	1.5000	1.91	0.900	120.3	312.0	120.4	2,000	-14,955	88	1,292	-13,574
Totals:											1,239	287	5,258	6,784	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	27.78	20.72	130.0	130.0	365.00	39.00	--	22.00	--	317	1,106	1,423
Totals:											317	1,106	1,423	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.25	0.00	0.0	0.0	13.00	9.00	10.50	0	152	152	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.18	0.00	222.5	132.5	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.79	0.00	312.0	312.0	2.00	3.00	3.19	-1	11	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.13	0.00	133.0	133.0	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.49	0.00	133.0	133.0	2.00	3.00	3.19	1	11	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.79	0.00	133.0	133.0	2.00	3.00	3.19	1	11	11	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.31	0.00	222.5	132.5	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.29	0.00	222.5	132.5	5.00	3.00	0.00	5	0	5	
Totals:											13	208	221

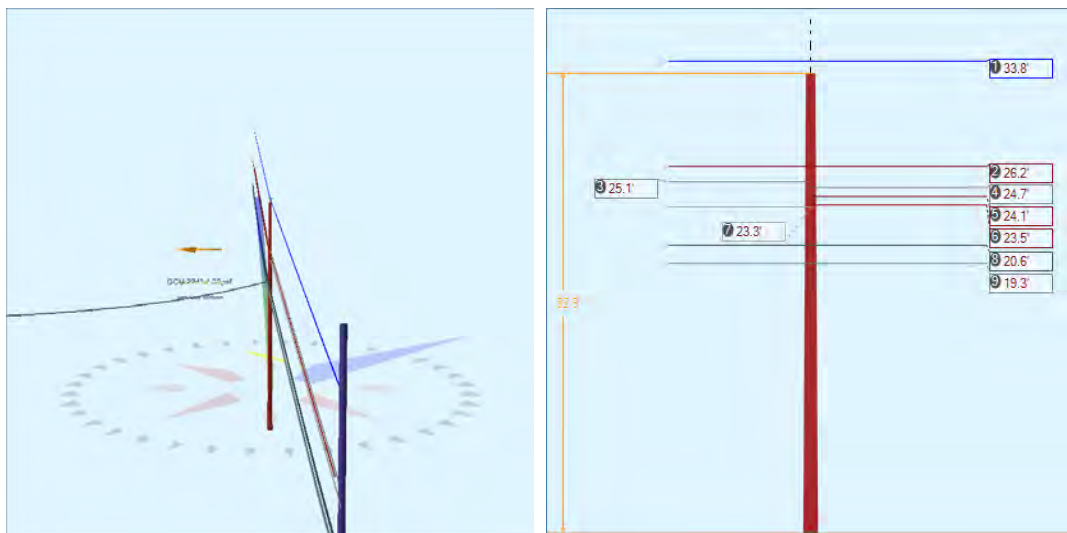
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.44	23.44	120.34	0.375	75.00	312.0	0.0	0.273	118.51	3.97

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	6,044	5,495	5,316	0	5,316	-1,583	-36,420
Totals:										0	5,316	-1,583	-36,420

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	120.34	312.0	20,000	1.00	20,000	5,495	5,316	27.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	20.73	33.40	9.88	8.01	6.69	10.70	1.60e+6	60.00	57.00	34.25	203,041	2058.31	62.50

Pole Num:	193W - 74984-33456	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.10	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068085 Deg	Longitude:	-84.447793 Deg	Elevation:	866.375368462395		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.0	0.0
Groundline	33.0	0.0
Vertical	1.0	18.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,149	246.6
Groundline	21,149	246.6
GL Allowable	65,047	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	120.3	132.0		26.1	224.1	26.9	310.0
? EHS 3/8 (Span/Head)			23.3	37.7	224.1	42.8	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 246.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,291	226.1	54,403	257.2	83.6	5,662	317	4	5,665	83.3
Comms	713	70.3	14,310	67.7	22.0	1,489	735	8	1,498	22.0
GuyBraces	-2,150	-212.1	-50,361	-238.1	-77.4	-5,241	28	0	-5,241	-77.1
Pole	153	15.1	2,589	12.2	4.0	269	1,542	18	287	4.2
Insulators	6	0.6	208	1.0	0.3	22	63	1	22	0.3
Pole Load	1,014	100.0	21,149	100.0	32.5	2,201	2,685	31	2,232	32.8
Pole Reserve Capacity			43,898		67.5	4,599			4,568	67.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 246.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	148	14.6	4,241	20.1	6.5	441	389	4	446	6.6
Unknown, COMMUNICATION	713	70.3	14,319	67.7	22.0	1,490	754	9	1,499	22.0
Pole	153	15.1	2,589	12.2	4.0	269	1,542	18	287	4.2
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,014	100.0	21,149	100.0	32.5	2,201	2,685	31	2,232	32.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.78	0.00	0.3980	0.27	0.145	120.3	132.0	120.3	2,128	-38,914	0	968	-37,946
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.78	0.00	0.3980	0.27	0.145	120.6	313.1	120.6	2,128	37,275	0	979	38,253
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.23	6.23	0.3980	0.27	0.145	120.3	132.0	120.3	2,128	-30,202	19	751	-29,432
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.23	6.23	0.3980	0.27	0.145	120.6	313.1	120.6	2,128	28,930	19	759	29,708
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.12	6.30	0.3980	0.27	0.145	120.3	132.0	120.3	2,128	-28,925	-9	719	-28,214
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.71	6.32	0.3980	0.27	0.145	120.6	313.1	120.6	2,128	27,253	8	715	27,977
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.07	6.36	0.3980	0.27	0.145	120.6	313.1	120.6	2,128	26,547	8	697	27,253

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.45	6.40	0.3980	0.27	0.145	120.6	313.1	120.6	2,128	25,870	8	679	26,557
Totals:												47,834	54	6,268	54,157

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.58	6.56	1.3300	1.64	0.337	120.3	132.0	120.4	925	-10,302	47	1,201	-9,054
CATV	CATV 1.0	Unknown, COMMUNICATION	20.58	6.56	1.3300	1.64	0.337	120.6	313.1	120.6	925	9,868	47	1,215	11,130
Telco	TELE 1.5	Unknown, COMMUNICATION	19.29	6.64	1.5000	1.91	0.900	120.3	132.0	120.4	2,000	-20,871	83	1,230	-19,557
Telco	TELE 1.5	Unknown, COMMUNICATION	19.29	6.64	1.5000	1.92	0.900	120.6	313.1	120.6	2,000	19,992	84	1,244	21,319
Telco	TELE 1.5	Unknown, COMMUNICATION	19.29	6.64	1.5000	2.66	0.900	156.9	222.2	157.7	450	10,274	109	24	10,407
Totals:												8,961	370	4,913	14,245

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.90	0.00	0.0	0.0	13.00	9.00	10.50	0	141	141
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.23	0.00	222.5	312.5	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.12	0.00	132.0	132.0	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.71	0.00	313.1	313.1	2.00	3.00	3.19	1	11	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.07	0.00	313.1	313.1	2.00	3.00	3.19	1	10	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.45	0.00	313.1	313.1	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	20.58	0.00	222.5	312.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.29	0.00	222.5	312.5	5.00	3.00	0.00	5	0	5
Totals:										13	195	207

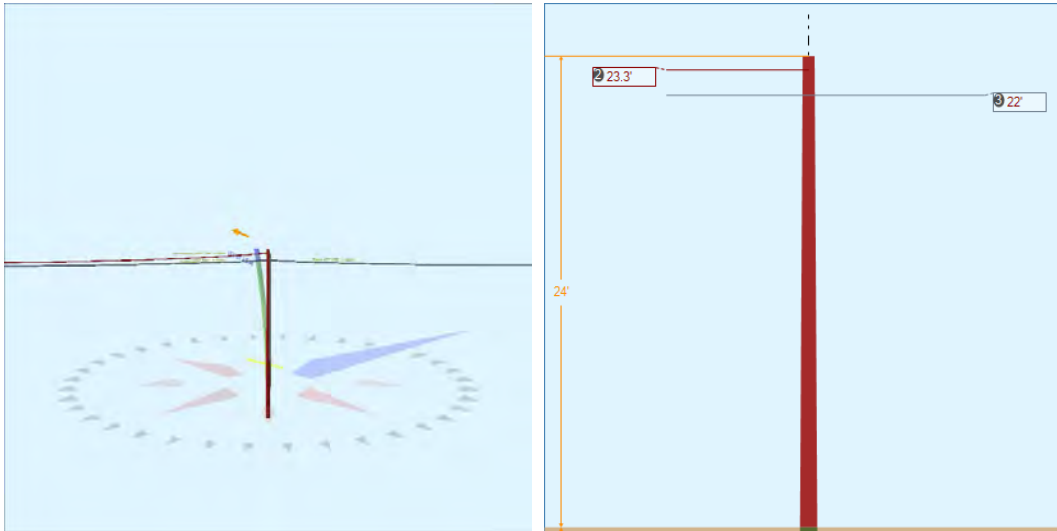
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.32	23.32	120.34	0.375	75.00	132.0	0.0	0.273	118.52	3.90

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8 Span/Head	2.30e+7	15,400	0.90	13,860	700	5,927	5,388	5,224	0	5,224	-2,177	-50,133
Totals:									0	5,224	-2,177	-50,133

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	120.34	132.0	20,000	1.00	20,000	5,388	5,224	26.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	18.19	33.03	9.83	6.87	6.69	10.54	1.60e+6	60.00	57.00	32.90	258,504	2685.05	100.00

Pole Num:	194W - 74863-33316	Pole Length / Class:	30 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	27.52	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067756 Deg	Longitude:	-84.448155 Deg	Elevation:	863.63929246623		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.0	0.0
Groundline	38.0	0.0
Vertical	6.7	15.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	14,089	251.4
Groundline	14,089	251.4
GL Allowable	37,379	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 251.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	463	71.5	10,818	76.8	28.9	1,970	88	1	1,972	29.0
Comms	83	12.9	1,915	13.6	5.1	349	375	6	355	5.2
Pole	80	12.4	1,027	7.3	2.8	187	829	14	201	3.0
Risers	21	3.2	317	2.3	0.9	58	45	1	59	0.9
Insulators	0	0.1	12	0.1	0.0	2	13	0	2	0.0
Pole Load	647	100.0	14,089	100.0	37.7	2,566	1,350	22	2,588	38.1
Pole Reserve Capacity			23,290		62.3	4,234			4,212	61.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 251.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	484	74.7	11,145	79.1	29.8	2,030	137	2	2,032	29.9
Unknown, COMMUNICATION	83	12.9	1,917	13.6	5.1	349	384	6	356	5.2
Pole	80	12.4	1,027	7.3	2.8	187	829	14	201	3.0
Totals:	647	100.0	14,089	100.0	37.7	2,566	1,350	22	2,588	38.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	TRIPLEX 1/0	KU, UTILITY	23.34	5.56	1.0300	1.28	0.399	116.4	222.9	116.4	500	10,259	36	535	10,830
Totals:											10,259	36	535	10,830	

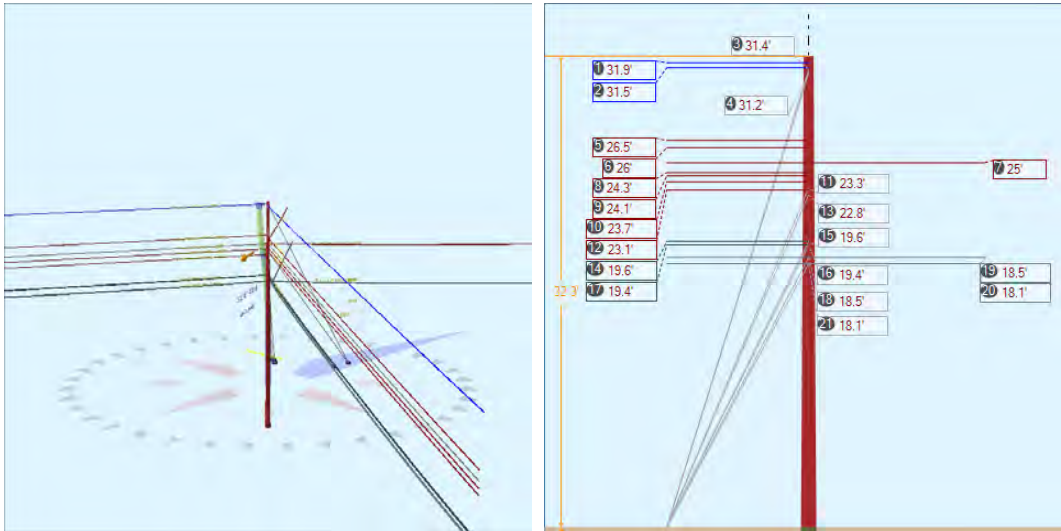
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	TELE 1.5	Unknown, COMMUNICATION	22.04	5.64	1.5000	1.83	0.900	116.4	222.9	116.4	2,000	38,750	36	660	39,446
Telco	TELE 1.5	Unknown, COMMUNICATION	22.04	5.64	1.5000	2.67	0.900	156.9	42.2	156.9	2,000	-38,491	48	914	-37,529
Totals:											259	84	1,574	1,917	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 60.0°	Riser	KU, UTILITY	23.67	4.49	60.0	60.0	23.67	284.05	2.50	2.50	284.05	-8	326	318
Totals:											-8	326	318	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.34	0.00	222.9	222.9	2.00	3.00	3.19	2	8	10
Bolt	Three Bolt	Unknown, COMMUNICATION	22.04	0.00	312.9	222.9	5.00	3.00	0.00	2	0	2
Totals:										4	8	12

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	15.88	33.07	8.17	7.60	6.05	8.76	1.60e+6	60.00	57.00	24.05	20,170	201.46	14.93

Pole Num:	195W - 74815-33230	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.67	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.89	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067526 Deg	Longitude:	-84.448435 Deg	Elevation:	858.911349914777		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	54.6	26.3
Groundline	5.3	0.0
Vertical	38.0	25.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,958	334.8
Groundline	2,146	46.5
GL Allowable	63,824	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.0	0.0		75.8	151.2	78.3	230.0
? EHS 3/8 (Down)			31.4	53.3	151.2	60.5	230.0
? EHS 3/8 (Down)			23.3	56.3	151.2	64.1	230.0
? Single Helix Anchor	17.6	316.9		55.2	151.2	57.4	85.0
? EHS 3/8 (Down)			31.2	33.7	151.2	38.6	80.0
? EHS 3/8 (Down)			22.8	46.2	151.2	52.6	90.0
? Single Helix Anchor	16.7	318.9		10.2	151.2	10.6	90.0
? EHS 1/4 (Down)			19.6	34.0	151.2	39.0	90.0
? Single Helix Anchor	17.0	0.0		19.1	151.2	20.3	225.0
? EHS 1/4 (Down)			19.4	34.3	151.2	40.0	230.0
? EHS 1/4 (Down)			18.5	29.4	151.2	34.6	220.0
? Single Helix Anchor	14.7	319.8		8.2	151.2	8.6	90.0
? EHS 1/4 (Down)			18.1	27.4	151.2	31.6	90.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 46.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-8,047	177620.6	40,171	1871.9	62.9	-22,740	427	5	-22,735	-334.3
Comms	-184	4059.3	869	40.5	1.4	-492	620	7	-485	-7.1
GuyBraces	8,270	-1.8e+5	-39,036	-1819.0	-61.2	22,098	40,409	469	22,567	331.9
Pole	-41	910.2	129	6.0	0.2	-73	1,503	17	-56	-0.8
Insulators	-2	50.1	14	0.6	0.0	-8	93	1	-7	-0.1
Pole Load	-5	100.0	2,146	100.0	3.4	-1,215	43,052	500	-715	-10.5
Pole Reserve Capacity			61,678		96.6	8,015			7,515	110.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 46.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-1,574	34742.7	7,549	351.8	11.8	-4,273	34,640	402	-3,871	-56.9
Unknown, COMMUNICATION	1,611	-35552.9	-5,532	-257.8	-8.7	3,131	6,908	80	3,212	47.2
Pole	-41	910.2	129	6.0	0.2	-73	1,503	17	-56	-0.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	-5	100.0	2,146	100.0	3.4	-1,215	43,052	500	-715	-10.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.88	16.12	0.3980	0.07	0.145	66.5	209.0	66.5	2,128	-84,126	-6	141	-83,990
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.53	16.14	0.3980	0.20	0.145	120.0	126.1	120.0	2,128	15,720	2	-414	15,308
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.54	6.18	0.3980	0.07	0.145	66.5	209.0	66.5	2,128	-70,038	-11	117	-69,931
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.04	6.21	0.3980	0.20	0.145	120.0	126.1	120.0	2,128	12,984	4	-342	12,646
Secondary	TRIPLEX 1/0	KU, UTILITY	25.02	6.27	1.0300	1.28	0.399	116.4	42.9	116.4	1,930	62,644	46	77	62,767
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.02	6.27	0.3980	0.20	0.145	120.0	126.1	120.0	2,128	12,472	4	-329	12,147
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.02	6.27	0.3980	0.07	0.145	66.5	209.0	66.5	2,128	-66,018	-11	111	-65,918
Secondary	TRIPLEX 1/0	KU, UTILITY	25.02	6.27	1.0300	0.42	0.399	41.7	320.9	41.7	1,930	4,835	-16	-83	4,736
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.34	6.31	0.3980	0.20	0.145	120.0	126.1	120.0	2,128	12,132	4	-320	11,816
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.12	6.32	0.3980	0.07	0.145	66.5	209.0	66.5	2,128	-63,641	-11	107	-63,545
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.70	6.35	0.3980	0.20	0.145	120.0	126.1	120.0	2,128	11,817	4	-311	11,509
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.15	6.38	0.3980	0.07	0.145	66.5	209.0	66.5	2,128	-61,073	-11	102	-60,982
Totals:											-212,290	-2	-1,144	-213,437	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	19.62	6.59	1.3300	0.84	0.337	66.5	209.0	66.5	925	-22,498	-27	177	-22,349
CATV	CATV 1.0	Unknown, COMMUNICATION	19.38	6.60	1.3300	1.62	0.337	120.0	126.1	120.0	925	4,199	9	-519	3,690
Telco	TELE 1.5	Unknown, COMMUNICATION	18.52	6.65	1.5000	1.83	0.900	116.4	42.9	116.4	2,000	48,062	88	75	48,225
Telco	TELE 1.5	Unknown, COMMUNICATION	18.52	6.65	1.5000	0.96	0.900	66.5	209.0	66.5	2,000	-45,932	-48	183	-45,798
Telco	TELE 1.5	Unknown, COMMUNICATION	18.09	6.68	1.5000	1.89	0.900	120.0	126.1	120.0	2,000	8,478	91	-530	8,040
Telco	TELE 1.5	Unknown, COMMUNICATION	18.09	6.68	1.5000	0.58	0.900	41.7	320.9	41.7	2,000	3,623	32	-79	3,576
Totals:											-4,068	145	-693	-4,616	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	31.88	0.00	209.0	209.0	3.00	3.80	12.75	-7	-19	-26
Deadend	Deadend Insulator - 15 kV KU, UTILITY	31.53	0.00	126.1	126.1	3.00	3.80	12.75	1	-19	-18
Spool	Spool Insulator - 25 kV KU, UTILITY	26.54	0.00	209.0	209.0	2.00	3.00	3.19	-2	-3	-5
Spool	Spool Insulator - 25 kV KU, UTILITY	26.04	0.00	126.1	126.1	2.00	3.00	3.19	0	-3	-3
Spool	Spool Insulator - 25 kV KU, UTILITY	25.02	0.00	42.9	42.9	2.00	3.00	3.19	2	-3	-1
Spool	Spool Insulator - 25 kV KU, UTILITY	25.02	0.00	126.1	126.1	2.00	3.00	3.19	0	-3	-3
Spool	Spool Insulator - 25 kV KU, UTILITY	25.02	0.00	209.0	209.0	2.00	3.00	3.19	-2	-3	-5
Spool	Spool Insulator - 25 kV KU, UTILITY	24.34	0.00	126.1	126.1	2.00	3.00	3.19	0	-3	-3
Spool	Spool Insulator - 25 kV KU, UTILITY	24.12	0.00	209.0	209.0	2.00	3.00	3.19	-2	-3	-5
Spool	Spool Insulator - 25 kV KU, UTILITY	23.70	0.00	126.1	126.1	2.00	3.00	3.19	0	-3	-2
Spool	Spool Insulator - 25 kV KU, UTILITY	23.15	0.00	209.0	209.0	2.00	3.00	3.19	-2	-3	-5
Bolt	Single Bolt Unknown, COMMUNICATION	19.62	0.00	209.0	299.0	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt Unknown, COMMUNICATION	19.38	0.00	126.1	216.1	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt Unknown, COMMUNICATION	18.52	0.00	42.9	42.9	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt Unknown, COMMUNICATION	18.52	0.00	209.0	299.0	5.00	3.00	0.00	-5	0	-5

Bolt	Single Bolt	Unknown, COMMUNICATION	18.09	0.00	43.5	403.5	5.00	3.00	0.00	5	0	5
Totals:										-9	-65	-73

Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	31.39	0.00	21.00	0.375	75.00	0.0	56.0	0.273	36.11	1.68
EHS 3/8	Down	KU, UTILITY	23.27	0.00	21.00	0.375	75.00	0.0	47.8	0.273	29.63	1.46
EHS 3/8	Down	KU, UTILITY	31.15	0.00	17.62	0.375	75.00	316.9	60.3	0.273	34.15	1.00
EHS 3/8	Down	KU, UTILITY	22.81	0.00	17.62	0.375	75.00	316.9	52.1	0.273	27.13	1.09
EHS 1/4	Down	KU, UTILITY	19.62	0.00	16.71	0.25	75.00	318.9	49.4	0.121	24.05	0.69
EHS 1/4	Down	Unknown, COMMUNICATION	19.38	0.00	17.00	0.25	75.00	0.0	48.6	0.121	24.05	0.70
EHS 1/4	Down	Unknown, COMMUNICATION	18.52	0.00	17.00	0.25	75.00	0.0	47.3	0.121	23.41	0.58
EHS 1/4	Down	Unknown, COMMUNICATION	18.09	0.00	14.70	0.25	75.00	319.8	50.7	0.121	21.59	0.50

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,380	7,618	7,394	6,131	4,132	2,845	88,154
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,882	8,074	7,797	5,775	5,238	3,607	83,070
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,357	4,870	4,669	4,056	2,314	18	483
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,292	6,629	6,406	5,058	3,931	31	649
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,334	2,122	2,037	1,547	1,325	55	1,048
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,396	2,178	2,053	1,540	1,358	935	17,912
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,072	1,883	1,760	1,293	1,193	822	15,054
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,888	1,717	1,642	1,271	1,039	59	1,038
Totals:										26,670	20,531	8,373	207,409

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.00	0.0	20,000	1.00	20,000	15,651	15,151	78.3
Single Helix Anchor		18.00	17.62	316.9	20,000	1.00	20,000	11,470	11,047	57.3
Single Helix Anchor		18.00	16.71	318.9	20,000	1.00	20,000	2,122	2,037	10.6
Single Helix Anchor		18.00	17.00	0.0	20,000	1.00	20,000	4,061	3,813	20.3
Single Helix Anchor		18.00	14.70	319.8	20,000	1.00	20,000	1,717	1,642	8.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.38	34.26	9.45	30.91	6.69	10.47	1.60e+6	60.00	57.00	32.34	113,304	1132.94	2.63

34' - 171W - 74203-33862

22' 10" - Lowest Power

21' 2" - Proposed Metronet

19' 11" - Highest Tel Cable

19' 11" - Highest Tel Drop

4' - Base offset

Base

33' 6" - 172W - 74353-34007

21' 10" - Lowest Power

20' 3" - Proposed Metronet

19' 11" - Proposed Metronet

19' 4" - Highest Tel Cable

19' 1" - Highest Tel Drop

4' - Base offset

Base

28' 5" - 173W - 74447-33926

- 22' 7" - Lowest Power
- 19' - Proposed Metronet
- 18' - Highest Tel Cable
- 17' 6" - Highest Tel Drop

4' - Base offset

Base

34' 9" - 174W - 74574-33815

22' 11" - Lowest Power

19' 7" - Proposed Metronet

18' 8" - Highest Tel Cable

4' - Base offset

Base

30' 5" - 175W - 74491-33737

20' 6" - Lowest Power

16' 11" - Highest Tel Cable

16' 11" - Highest Tel Drop

16' 11" - Proposed Metronet

4' - Base offset

Base

30' 5" - 176W - 74397-33648

21' 10" - Lowest Power

18' 6" - Proposed Metronet

17' 7" - Highest Tel Cable

16' 8" - Highest Tel Drop

4' - Base offset

Base

32' 3" - 177W - 74314-33570

22' 7" - Lowest Power

19' - Proposed Metronet

18' 7" - Highest Tel Drop

18' 5" - Highest Tel Cable

4' - Base offset

31' 2" - 178W - 74233-33497

21' 10" - Lowest Power

18' 3" - Proposed Metronet

16' 3" - Highest Tel Cable

16' 2" - Highest Tel Drop

4' - Base offset

Base

32' 1" - 179W - 74252-33414

22' 4" - Lowest Power

19' - Proposed Metronet

17' - Highest Tel Cable

4' - Base offset

Base

WIN6549

32' 1" - 180W - 74058-33325

22' 6" - Lowest Power

18' 9" - Proposed Metronet

17' 10" - Highest Tel Drop

16' 9" - Highest Tel Cable

4' - Base offset

Base

31' 9" - 181W - 73998-33233

23' 2" - Lowest Power

18' 9" - Proposed Metronet

18' 5" - Proposed Metronet

16' - Highest Tel Cable

4' - Base offset

Base

34' 1" - 182W - 75135-33087

24' 4" - Lowest Power

20' 11" - Proposed Metronet

20' 3" - Highest Tel Cable

4' - Base offset

Base

WIN6552

33' 7" - 183W - 74204-33015

23' 2" - Lowest Power

19' 9" - Proposed Metronet

18' 10" - Highest Tel Drop

18' 4" - Highest Tel Cable

4' - Base offset

Base

WIN6553

32' 8" - 184W - 74256-33106

22' 8" - Lowest Power

19' 3" - Proposed Metronet

18' - Highest Tel Cable

18' - Highest Tel Drop

4' - Base offset

WIN6554

33' 7" - 185W - 74338-34198

24' 3" - Lowest Power
20' 9" - Proposed Metronet
19' 7" - Highest Tel Cable
19' 7" - Highest Tel Drop

4' - Base offset

Base

32' 3" - 186W - 74433-33283

22' 9" - Lowest Power

19' 5" - Proposed Metronet

18' 6" - Highest Tel Cable

18' 4" - Highest Tel Drop

4' - Base offset

Base

34' 5" - 187W - 74517-33969

22' 7" - Lowest Power

20' 7" - Highest Tel Cable

20' 5" - Highest Tel Drop

20' 2" - Proposed Metronet

4' - Base offset

Base

WIN6557

34' 3" - 188W - 74700-33705

24' 8" - Lowest Power

21' 3" - Proposed Metronet

20' 3" - Highest Tel Cable

20' - Highest Tel Drop

4' - Base offset

Base

34' 6" - 189W - 74793-33623

23' 1" - Lowest Power

19' 9" - Proposed Metronet

19' 3" - Highest Tel Cable

18' 11" - Highest Tel Drop

4' - Base offset

Base

WIN6559

38' - 190W - 75209-33188

28' 11" - Lowest Power

25' 7" - Proposed Metronet

23' 9" - Highest Tel Cable

23' 9" - Highest Tel Drop

4' - Base offset

WIN6560



31' 9" - 191W - 75257-33304

22' 1" - Lowest Power

18' 9" - Proposed Metronet

18' 2" - Highest Tel Cable

17' 6" - Highest Tel Drop

4' - Base offset

Base

34' 3" - 192W - 75073-33378

23' 9" - Lowest Power

20' 4" - Proposed Metronet

19' 6" - Highest Tel Drop

19' 3" - Highest Tel Cable

4' - Base offset

Base



32' 11" - 193W - 74984-33456

23' 5" - Lowest Power

20' 1" - Proposed Metronet

19' 9" - Proposed Metronet

19' 3" - Highest Tel Cable

18' 8" - Highest Tel Drop

4' - Base offset

Base

24' 1" - 194W - 74863-33316

22' 11" - Lowest Power

22' - Highest Tel Cable

19' 7" - Proposed Metronet

4' - Base offset

Base

32' 4" - 195W - 74815-33230

23' 2" - Lowest Power

19' 7" - Proposed Metronet

18' 6" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, March 19, 2018 3:20 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX167-05W
Attachments: LX167-05W - Windstream Inventory Report.pdf; LX167-05W POLE APP MAP 196-269.pdf; O-Calcs.pdf; Pole Photos.pdf; LX167-05W - METRONET POLE INVENTORY REPORT.XLSX; Map Key.pdf

Good Afternoon,
Please see attached for proposal titled LX167-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



198W	74577-32994		WS	
198W	74577-32994		WS	
199W	74976-33005	40/4	WS	2=Comms
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
199W	74976-33005		WS	
200W	74965-33063	40/4	WS	1=None
200W	74965-33063		WS	
200W	74965-33063		WS	
200W	74965-33063		WS	
200W	74965-33063		WS	
200W	74965-33063		WS	
200W	74965-33063		WS	
200W	74965-33063		WS	
201W	74948-33132	40/4	WS	2=Comms
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
201W	74948-33132		WS	
202W	74868-33192	40/4	WS	2=Comms
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	
202W	74868-33192		WS	

203W	74507-32929	40/4	WS	2=Comms
203W	74507-32929		WS	
203W	74507-32929		WS	
203W	74507-32929		WS	
203W	74507-32929		WS	
203W	74507-32929		WS	
203W	74507-32929		WS	
203W	74507-32929		WS	
204W	74391-32820	40/4	WS	2=Comms
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
204W	74391-32820		WS	
205W	74315-32899	40/4	WS	2=Comms
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
205W	74315-32899		WS	
206W	74480-32725	40/4	WS	2=Comms
206W	74480-32725		WS	
206W	74480-32725		WS	
206W	74480-32725		WS	
206W	74480-32725		WS	
206W	74480-32725		WS	
206W	74480-32725		WS	
206W	74480-32725		WS	
206W	74480-32725		WS	
206W	74480-32725		WS	

Owner	1=None 4=Comms&Elec 6=Complex PCO	2=Comms 5=Simple PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
			21.00	1934 GLENGARRY WA	38.06736	-84.44855		KU
					38.06736	-84.44855		KU
					38.06736	-84.44855		KU
					38.06736	-84.44855		KU
					38.06736	-84.44855		KU
					38.06736	-84.44855		KU
					38.06736	-84.44855		Metronet
Lower Charter					38.06736	-84.44855		Charter
Lower Windstream					38.06736	-84.44855		Windstream
			34.70	380 SPRING STATION	38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		KU
					38.06712	-84.44879		Metronet
Lower Charter					38.06712	-84.44879		Charter
Lower Windstream					38.06712	-84.44879		Windstream
			41.10	2088 SPRING STATION	38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		KU
					38.06686	-84.44909		Metronet
Lower Charter					38.06686	-84.44909		Charter

Lower Windstream		38.06686	-84.44909	Windstream	
		38.06686	-84.44909	Windstream	
	47.00	393 SPRING STATION	38.06686	-84.44782	KU
			38.06686	-84.44782	KU
			38.06686	-84.44782	KU
			38.06686	-84.44782	KU
			38.06686	-84.44782	KU
			38.06686	-84.44782	KU
			38.06686	-84.44782	KU
			38.06686	-84.44782	KU
			38.06686	-84.44782	Metronet
Lower Charter			38.06686	-84.44782	Charter
Lower Windstream			38.06686	-84.44782	Windstream
	17.70	389 SPRING STATION	38.06702	-84.44787	KU
			38.06702	-84.44787	KU
			38.06702	-84.44787	KU
			38.06702	-84.44787	KU
			38.06702	-84.44787	KU
			38.06702	-84.44787	Metronet
			38.06702	-84.44787	Charter
			38.06702	-84.44787	Windstream
	24.60	2000 SPRING STATION	38.06720	-84.44792	KU
			38.06720	-84.44792	KU
			38.06720	-84.44792	KU
			38.06720	-84.44792	KU
			38.06720	-84.44792	KU
			38.06720	-84.44792	KU
			38.06720	-84.44792	KU
			38.06720	-84.44792	KU
			38.06720	-84.44792	Metronet
Lower Charter			38.06720	-84.44792	Charter
			38.06720	-84.44792	Windstream
	27.00	1992 SPRING STATION	38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	KU
			38.06731	-84.44810	Metronet
Lower Charter			38.06731	-84.44810	Charter
Lower Windstream			38.06731	-84.44810	Windstream

	64.20	2092 SPRING STATION	38.06662	-84.44941	KU
			38.06662	-84.44941	KU
			38.06662	-84.44941	KU
			38.06662	-84.44941	KU
			38.06662	-84.44941	Metronet
Lower Charter			38.06662	-84.44941	Charter
Lower Windstream			38.06662	-84.44941	Windstream
Lower Windstream			38.06662	-84.44941	Windstream
	38.60	373 HERMITAGE DR	38.06630	-84.44986	KU
			38.06630	-84.44986	KU
			38.06630	-84.44986	KU
			38.06630	-84.44986	KU
			38.06630	-84.44986	KU
			38.06630	-84.44986	KU
			38.06630	-84.44986	KU
			38.06630	-84.44986	KU
			38.06630	-84.44986	Metronet
Lower Charter			38.06630	-84.44986	Charter
Lower Charter			38.06630	-84.44986	Charter
Lower Windstream			38.06630	-84.44986	Windstream
Lower Windstream			38.06630	-84.44986	Windstream
Lower Windstream			38.06630	-84.44986	Windstream
	46.00	1902 GLENGARRY WA	38.06654	-84.45013	KU
			38.06654	-84.45013	KU
			38.06654	-84.45013	KU
			38.06654	-84.45013	KU
			38.06654	-84.45013	KU
			38.06654	-84.45013	KU
			38.06654	-84.45013	KU
			38.06654	-84.45013	KU
			38.06654	-84.45013	Metronet
Lower Charter			38.06654	-84.45013	Charter
Lower Windstream			38.06654	-84.45013	Windstream
Lower Windstream			38.06654	-84.45013	Windstream
	45.00	381 HERMITAGE DR	38.06605	-84.44957	KU
			38.06605	-84.44957	KU
			38.06605	-84.44957	KU
			38.06605	-84.44957	KU
			38.06605	-84.44957	KU
			38.06605	-84.44957	KU
			38.06605	-84.44957	KU
			38.06605	-84.44957	KU
			38.06605	-84.44957	Metronet
Lower Charter			38.06605	-84.44957	Charter

	38.06605	-84.44957	Windstream
	38.06605	-84.44957	Windstream
59.40 393 HERMITAGE DR	38.06577	-84.44927	KU
	38.06577	-84.44927	KU
	38.06577	-84.44927	KU
	38.06577	-84.44927	KU
	38.06577	-84.44927	KU
	38.06577	-84.44927	KU
	38.06577	-84.44927	Metronet
Lower & Resag Charter	38.06577	-84.44927	Charter
Lower Windstream	38.06577	-84.44927	Windstream
Lower Windstream	38.06577	-84.44927	Windstream
58.60 397 HERMITAGE DR	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	KU
	38.06546	-84.44900	Metronet
	38.06546	-84.44900	Metronet
Lower Charter	38.06546	-84.44900	Charter
Lower Windstream	38.06546	-84.44900	Windstream
Lower Windstream	38.06546	-84.44900	Windstream
20.00 2071 SPRING STATION	38.06576	-84.44837	KU
	38.06576	-84.44837	KU
	38.06576	-84.44837	KU
	38.06576	-84.44837	KU
	38.06576	-84.44837	KU
	38.06576	-84.44837	KU
	38.06576	-84.44837	KU
	38.06576	-84.44837	KU
	38.06576	-84.44837	Metronet
Lower Charter	38.06576	-84.44837	Charter
Lower Windstream	38.06576	-84.44837	Windstream
35.50 2063 SPRING STATION	38.06590	-84.44794	KU
	38.06590	-84.44794	KU
	38.06590	-84.44794	KU
	38.06590	-84.44794	KU
	38.06590	-84.44794	KU

		38.06590	-84.44794	KU
		38.06590	-84.44794	KU
		38.06590	-84.44794	KU
		38.06590	-84.44794	Metronet
Lower Charter		38.06590	-84.44794	Charter
Lower Windstream		38.06590	-84.44794	Windstream
	52.80 2055 SPRING STATION	38.06605	-84.44754	KU
		38.06605	-84.44754	KU
		38.06605	-84.44754	KU
		38.06605	-84.44754	KU
		38.06605	-84.44754	KU
		38.06605	-84.44754	KU
		38.06605	-84.44754	Metronet
Lower & Resag Charter		38.06605	-84.44754	Charter
Lower & Resag Windstream		38.06605	-84.44754	Windstream
	12.60 404 SPRING STATION	38.06628	-84.44695	KU
		38.06628	-84.44695	KU
		38.06628	-84.44695	KU
		38.06628	-84.44695	KU
		38.06628	-84.44695	KU
		38.06628	-84.44695	KU
		38.06628	-84.44695	KU
		38.06628	-84.44695	Metronet
Lower Charter		38.06628	-84.44695	Charter
Lower Windstream		38.06628	-84.44695	Windstream
	32.10 134 EASTIN RD	38.06745	-84.46000	KU
		38.06745	-84.46000	KU
		38.06745	-84.46000	KU
		38.06745	-84.46000	Metronet
		38.06745	-84.46000	Charter
		38.06745	-84.46000	Windstream
	47.20 16 DEEPWOOD DR	38.06721	-84.46036	KU
		38.06721	-84.46036	KU
		38.06721	-84.46036	KU
		38.06721	-84.46036	KU
		38.06721	-84.46036	KU
		38.06721	-84.46036	KU
		38.06721	-84.46036	KU
		38.06721	-84.46036	KU
		38.06721	-84.46036	Metronet
Lower Charter		38.06721	-84.46036	Charter
Lower Charter		38.06721	-84.46036	Charter
Lower Windstream		38.06721	-84.46036	Windstream

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Pe
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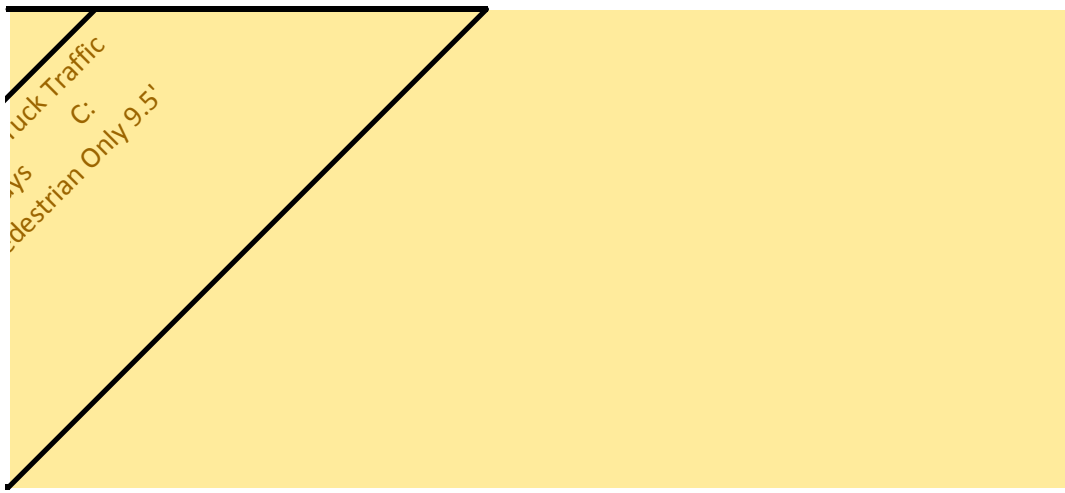
Primary	34' 1"			N	N		D: Pedestrian Only 9.5'		
Secondary	27' 7"			N	N				
Neutral	26' 4"			N	N				
Secondary	25' 7"			N	N				
Secondary	24' 10"			N	N				
Down Guy	24' 2"			N	N				
Communication		21'6"		N	N				
Communication	21' 6"	20'4"	38	N	N				
Communication	20' 4"	19'4"	17' 10"	N	N				
Primary	32' 9"			Y	N		D: Pedestrian Only 9.5'		
Transformer	27' 0"			Y	N				
Secondary	26' 0"			Y	N				
Neutral	25' 5"			Y	N				
Neutral	24' 3"			Y	N				
Secondary	23' 7"			Y	N				
Secondary Riser	23' 4"			Y	N				
Secondary	23' 2"			Y	N				
Secondary Drip Loop	22' 9"			Y	N				
Communication		19'5"		Y	N				
Communication	19' 8"	18'6"	43	Y	N				
Communication	18' 6"	17'6"	14' 9"	Y	N				
Primary	32' 4"			N	N		D: Pedestrian Only 9.5'		
Primary	31' 9"			N	N				
Transformer	27' 1"			N	N				
Secondary	26' 2"			N	N				
Neutral	25' 3"			N	N				
Neutral	24' 7"			N	N				
Secondary	24' 6"			N	N				
Secondary	24' 0"			N	N				
Secondary	23' 10"			N	N				
Secondary	23' 4"			N	N				
Secondary Drip Loop	21' 9"			N	N				
Communication		18'2"		N	N				
Communication	18' 2"	17'2"		N	N				

Communication	16' 11"	15'8"	48	N	N
Communication	16' 0"	14' 1"		N	N
Primary	31' 8"			Y	N D: Pedestrian Only 9.5'
OH Guy	31' 6"			Y	N
Secondary	25' 5"			Y	N
Transformer	25' 1"			Y	N
Neutral	24' 4"			Y	N
Secondary	23' 8"			Y	N
Secondary	23' 0"			Y	N
Secondary	22' 4"			Y	N
Communication		18'11"		Y	N
Communication	19' 8"	17'11"	32	Y	N
Communication	17' 11"	16'11"	16' 3"	Y	N
Primary	31' 10"			N	N D: Pedestrian Only 9.5'
Secondary	26' 2"			N	N
Neutral	24' 11"			N	N
Secondary	24' 3"			N	N
Secondary	23' 8"			N	N
Communication		20'4"		N	N
Communication	19' 5"		38	N	N
Communication	17' 8"	17' 0"		N	N
Primary	32' 8"			N	N D: Pedestrian Only 9.5'
Primary	31' 10"			N	N
Transformer	27' 9"			N	N
Secondary	27' 1"			N	N
Neutral	25' 10"			N	N
Secondary	25' 2"			N	N
Secondary	24' 6"			N	N
Down Guy	23' 9"			N	N
Communication		21'2"		N	N
Communication	20' 9"	20'2"	40	N	N
Communication	18' 3"	17' 7"		N	N
Primary	31' 11"			Y	N D: Pedestrian Only 9.5'
Transformer	26' 1"			Y	N
Secondary	25' 8"			Y	N
Neutral	25' 4"			Y	N
Neutral	24' 6"			Y	N
Secondary	23' 11"			Y	N
Secondary Riser	23' 4"			Y	N
Secondary	23' 2"			Y	N
Secondary Riser	22' 3"			Y	N
Secondary Drip Loop	21' 5"			Y	N
Communication		18'1"		Y	N
Communication	20' 0"	17'1"	40	Y	N
Communication	18' 6"	16'1"	14' 10"	Y	N

Primary	31' 8"			Y	N	B:Residential/Over Driveways
Secondary	25' 10"			Y	N	
Neutral	24' 10"			Y	N	
Secondary	24' 4"			Y	N	
Communication		21'0"		Y	N	
Communication	22' 0"	20'0"	42	Y	N	
Communication	21' 0"	19'0"		Y	N	
Communication	19' 9"	18'0"	17' 10"	Y	N	
Primary	31' 3"			Y	N	D: Pedestrian Only 9.5'
Primary	30' 6"			Y	N	
Transformer	26' 3"			Y	N	
Secondary	26' 1"			Y	N	
Neutral	24' 9"			Y	N	
Secondary	24' 0"			Y	N	
Secondary	23' 4"			Y	N	
Streetlight	21' 8"			Y	N	
Communication		20'0"		Y	N	
Communication	20' 5"	19'0"	42	Y	N	
Communication	19' 10"	18'5"		Y	N	
Communication	19' 0"	18'0"		Y	N	
Communication	18' 5"	17'5"		Y	N	
Communication	17' 5"	17'0"	17' 6"	Y	N	
Primary	31' 9"			Y	Y	B:Residential/Over Driveways
Secondary	25' 10"			Y	Y	
Neutral	25' 0"			Y	Y	
Secondary	24' 5"			Y	Y	
Secondary Riser	24' 3"			Y	Y	
Secondary Drip Loop	24' 0"			Y	Y	
Secondary	23' 9"			Y	Y	
OH Guy	23' 2"			Y	Y	
Communication		20'5"		Y	Y	
Communication	21' 2"	19'5"	27	Y	Y	
Communication	19' 11"	18'5"		Y	Y	
Communication	19' 1"	17'5"	18'3"	Y	Y	
Primary	32' 6"			N	N	D: Pedestrian Only 9.5'
Transformer	27' 1"			N	N	
Secondary	26' 11"			N	N	
Neutral	25' 9"			N	N	
Neutral	25' 6"			N	N	
Secondary	25' 0"			N	N	
Secondary	24' 5"			N	N	
Communication		21'1"		N	N	
Communication	20' 5"	20'1"	40	N	N	

Communication	19' 2"			N	N	
Communication	18' 2"	16' 8"		N	N	
Primary	29' 6"			Y	Y	D: Pedestrian Only 9.5'
Neutral	25' 1"			Y	Y	
Secondary	23' 11"			Y	Y	
Neutral	23' 0"			Y	Y	
Secondary	22' 6"			Y	Y	
Secondary	21' 10"			Y	Y	
Communication		17'10"		Y	Y	
Communication	18' 8"	16'10"	15	Y	Y	
Communication	17' 10"	15'10"		Y	Y	
Communication	17' 0"	14'10"	16' 7"	Y	Y	
Primary	34' 11"			Y	Y	D: Pedestrian Only 9.5'
Secondary	29' 4"			Y	Y	
Secondary	29' 1"			Y	Y	
Neutral	28' 9"			Y	Y	
Neutral	28' 4"			Y	Y	
Secondary	28' 0"			Y	Y	
Secondary	27' 8"			Y	Y	
Secondary	27' 5"			Y	Y	
Secondary	27' 0"			Y	Y	
Secondary Drip Loop	26' 5"			Y	Y	
Streetlight	26' 0"			Y	Y	
Communication		23'1"		Y	Y	
Communication		22'7"		Y	Y	
Communication	23' 9"	21'11"		Y	Y	
Communication	22' 7"	20'11"	28	Y	Y	
Communication	21' 11"	20'7"	15' 4"	Y	Y	
Primary	30' 9"			Y	N	D: Pedestrian Only 9.5'
Transformer	26' 1"			Y	N	
Secondary	25' 1"			Y	N	
Neutral	24' 1"			Y	N	
Secondary	23' 4"			Y	N	
Secondary	22' 9"			Y	N	
Secondary Drip Loop	21' 11"			Y	N	
Communication		18'3"		Y	N	
Communication	19' 1"	17'3"	50	Y	N	
Communication	18' 3"	16'3"	19' 8"	Y	N	
Primary	32' 8"			Y	Y	D: Pedestrian Only 9.5'
Transformer	27' 6"			Y	Y	
Secondary	27' 2"			Y	Y	
Neutral	25' 11"			Y	Y	
Secondary	25' 3"			Y	Y	

Secondary Riser	25' 0"			Y	Y	
Secondary	24' 7"			Y	Y	
Secondary Drip Loop	23' 11"			Y	Y	
Communication		20'1"		Y	Y	
Communication	21' 4"	19'1"	25	Y	Y	
Communication	20' 1"	18'1"	20' 7"	Y	Y	
Primary	29' 7"			Y	Y	D: Pedestrian Only 9.5'
Secondary	24' 0"			Y	Y	
Neutral	22' 9"			Y	Y	
Neutral	22' 4"			Y	Y	
Secondary	21' 7"			Y	Y	
Secondary	20' 11"			Y	Y	
Communication		17'0"		Y	Y	
Communication	18' 10"	16'0"	5	Y	Y	
Communication	17' 0"	15'0"	24' 1"	Y	Y	
Primary	36' 8"			N	N	D: Pedestrian Only 9.5'
Secondary	30' 7"			N	N	
Neutral	29' 7"			N	N	
Neutral	29' 6"			N	N	
Secondary	29' 0"			N	N	
Secondary	28' 4"			N	N	
Streetlight	26' 8"			N	N	
Communication		25'0"		N	N	
Communication	25' 0"	24'0"	35	N	N	
Communication	23' 8"	23'0"	21' 3"	N	N	
Primary	27' 8"			N	N	D: Pedestrian Only 9.5'
Neutral	24' 5"			N	N	
Transformer	23' 5"			N	N	
Communication		19' 5"		N	N	
Communication	18' 5"		59	N	N	
Communication	17' 4"		16'2"	N	N	
Primary	34' 1"			Y	N	D: Pedestrian Only 9.5'
Primary	33' 11"			Y	N	
Neutral	26' 7"			Y	N	
Secondary	26' 4"			Y	N	
Neutral	25' 7"			Y	N	
Secondary	24' 9"			Y	N	
Secondary	23' 10"			Y	N	
Secondary Riser	22' 8"			Y	N	
Communication		19' 4"		Y	N	
Communication	21' 2"	18' 4"		Y	N	
Communication	20' 11"	17' 4"	34	Y	N	
Communication	19' 8"	16' 4"		Y	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

EXHIBIT B
 WINDSTREAM CORPORATION
 APPLICATION FOR POLE LICENSE
 PROPOSAL #:
 Submit in Duplicate

LX167-05W

Name of Firm Applying:

CAN-RUS, INC

Contact Name,
 Phone #

LAUREN SANDEFUR 812-213-1328

EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address,
 City, ST, ZIP of Firm
 Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sandefur 3/19/18

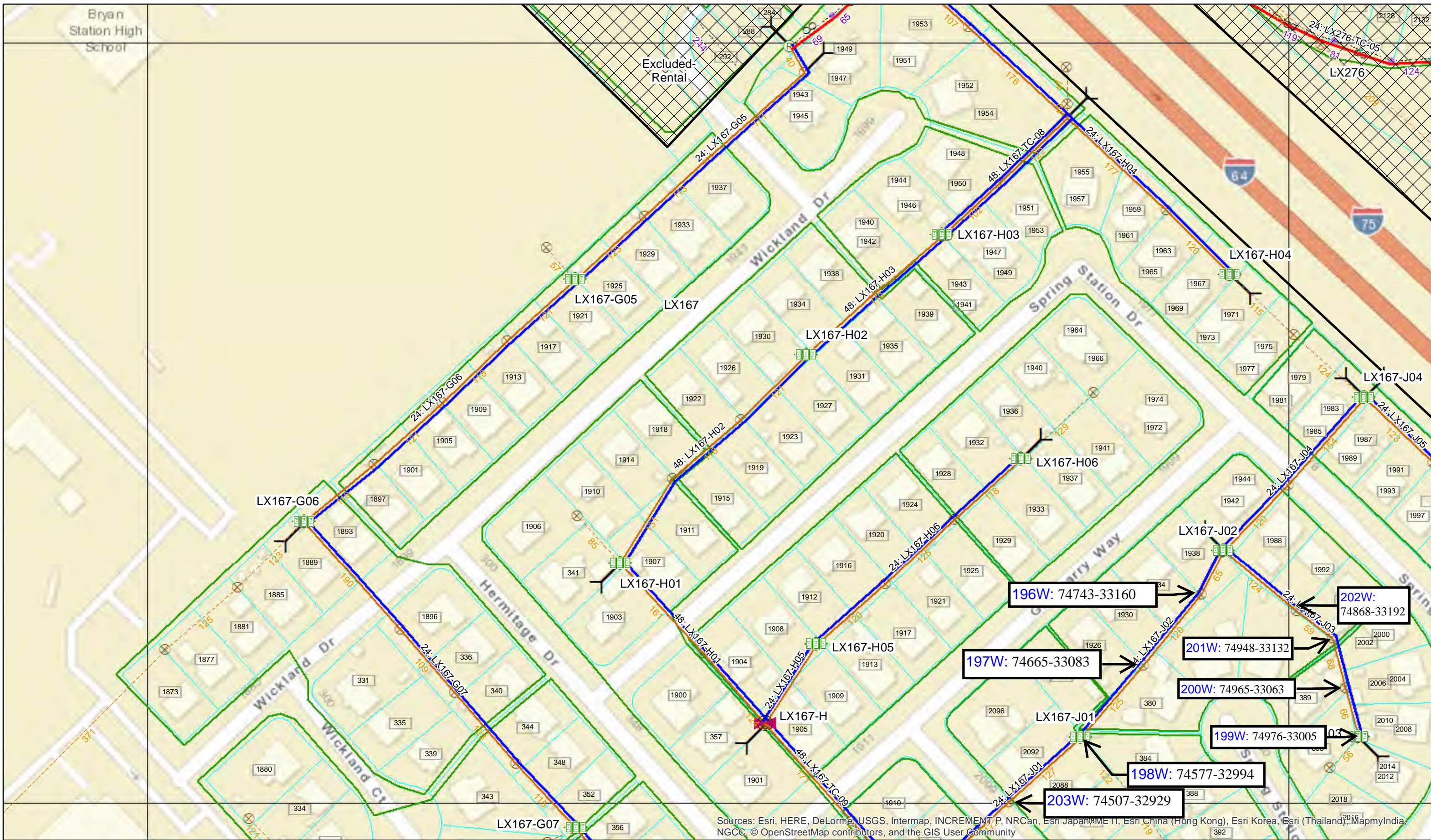
By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeredy MUST BE PAID IN FULL UP FRONT.
 NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmets on pole	# & type of Attachmets	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	74743-33160	196W	1934 GLENGARRY WAY, Lexington, KY 40404, WXXM	20'4"	20'4"	24'10"		(1)Fiber/Strand			
2	74665-33083	197W	380 SPRING STATION CT, Lexington, KY 40044, WXXM	18'6"	18'4"	22'9"		(1)Fiber/Strand			
3	74577-32994	198W	2088 SPRING STATION DR, Lexington, KY 40044, WXXM	16'11"	16'9"	21'9"		(2)Fiber/Strand			
4	74976-33005	199W	393 SPRING STATION CT, Lexington, KY 40044, WXXM	17'11"	18'5"	22'4"		(1)Fiber/Strand			
5	74965-33063	200W	388 SPRING STATION CT, Lexington, KY 40044, WXXM	17'8"	N/A	23'8"		(2)Fiber/Strand			
6	74948-33132	201W	2000 SPRING STATION DR, Lexington, KY 40044, WXXM	18'3"	19'1"	24'6"		(1)Fiber/Strand			
7	74868-33192	202W	1992 SPRING STATION DR, Lexington, KY 40044, WXXM	18'6"	N/A	21'5"		(1)Fiber/Strand			
8	74507-32929	203W	2092 SPRING STATION DR, Lexington, KY 40044, WXXM	21'0"	N/A	24'4"		(1)Fiber/Strand			
9	74391-32820	204W	373 HERMITAGE DR, Lexington, KY 40505 40/4, WXXM	19'0"	18'10"	21'8"		(2)Fiber/Strand			
10	74315-32899	205W	1902 GLENGARRY WAY, Lexington, KY 40044, WXXM	19'11"	18'10"	23'9"		(2)Fiber/Strand			
11	74480-32725	206W	381 HERMITAGE DR, Lexington, KY 40505 40/4, WXXM	19'2"	19'11"	24'5"		(2)Fiber/Strand			
12	74569-32630	207W	393 HERMITAGE DR, Lexington, KY 40505 40/4, WXXM	17'10"	N/A	21'10"		(2)Fiber/Strand			
13	74675-32510	208W	397 HERMITAGE DR, Lexington, KY 40505 40/4, WXXM	22'7"	N/A	26'0"		(2)Fiber/Strand			
14	74837-32586	209W	2071 SPRING STATION DR, Lexington, KY 40044, WXXM	18'3"	18'6"	21'11"		(1)Fiber/Strand			
15	74952-33643	210W	2093 SPRING STATION DR, Lexington, KY 40044, WXXM	20'1"	19'10"	23'11"		(2)Fiber/Strand			
16	75079-32705	211W	2055 SPRING STATION DR, Lexington, KY 40044, WXXM	17'0"	16'2"	20'11"		(1)Fiber/Strand			
17	75232-32777	212W	404 SPRING STATION CIR, Lexington, KY 45/3, WXXM	23'8"	23'4"	26'8"		(2)Fiber/Strand			
18	71472-33061	233W	134 EASTIN RD, Lexington, KY 40505	17'4"	N/A	23'5"		(2)Fiber/Strand			
19	NT	234W	16 DEERWOOD DR, Lexington, KY 40505	19'8"	N/A	22'8"		(1)Fiber/Strand			

20	NT	235W	14 DEEPWOOD DR, Lexington, KY 40505	40/4, WXM	16'9"	N/A	25'5"	(2) Fiber/Strand		
21	71134-33253	268W	10 DEEPWOOD DR, Lexington, KY 40505	40/4, WXM	20'0"	19'1"	23'11"	(2) Fiber/Strand		
22	70980-33407	269W	120 EASTIN RD, Lexington, KY 40505	45/3, WXM	18'7"	18'8"	30'6"	(1) Fiber/Strand		
23										
24										
25										
ESTIMATED TOTAL COSTS										
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM										

Submit to: Windstream.JointUse@Windstream.com
 Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

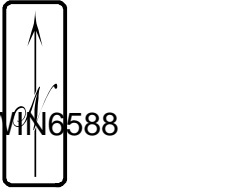
LXBM36
 PROJECT NUMBER:
 LXTNXY00437.CB

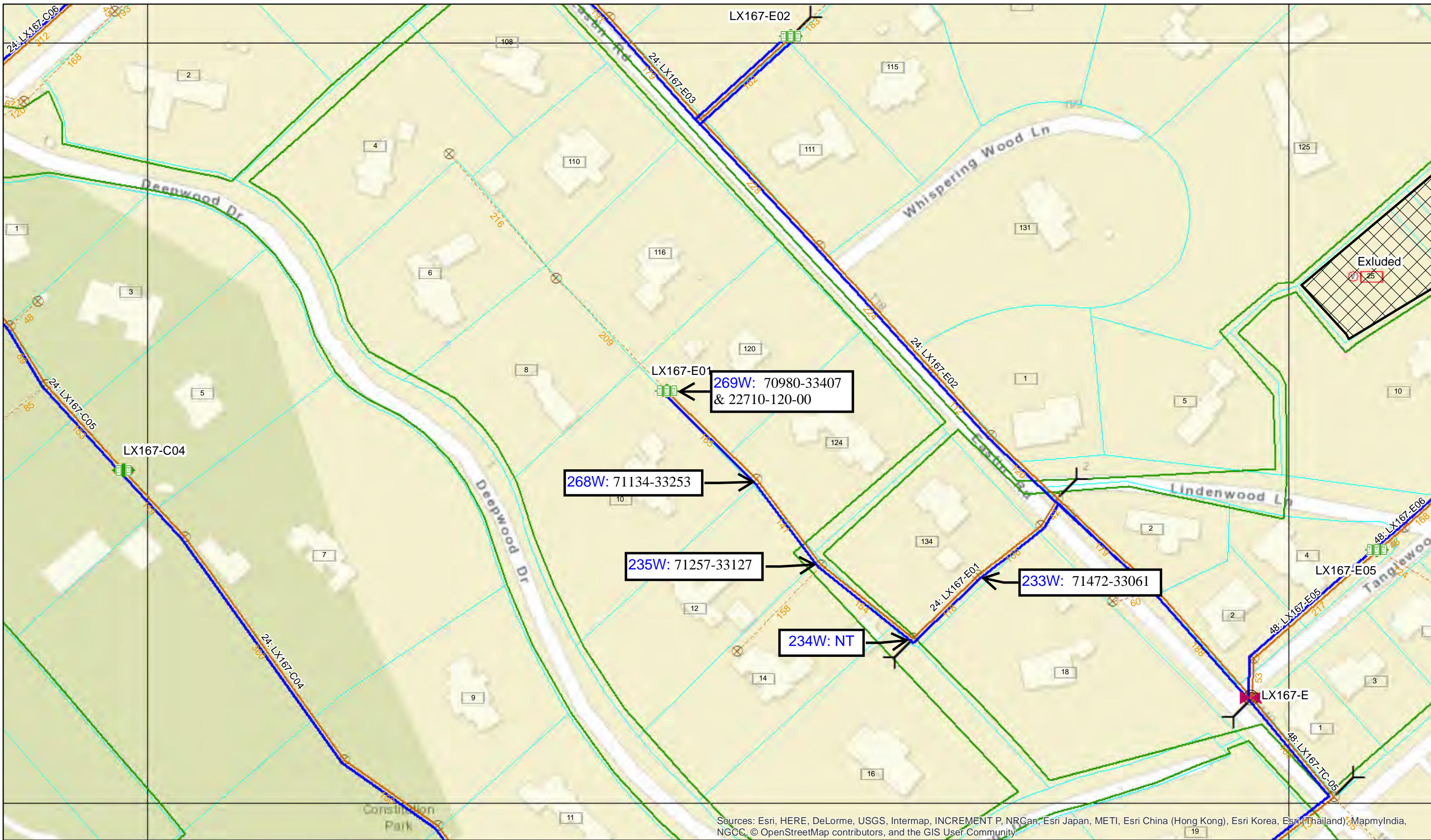
STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715





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LXB34

DESIGN ENG
 USER NAME: argis
 DATE: 12/11/2017
 PROJECT NUMBER:
 LXTNXY00437.CB

STAKING GRID DRAWING

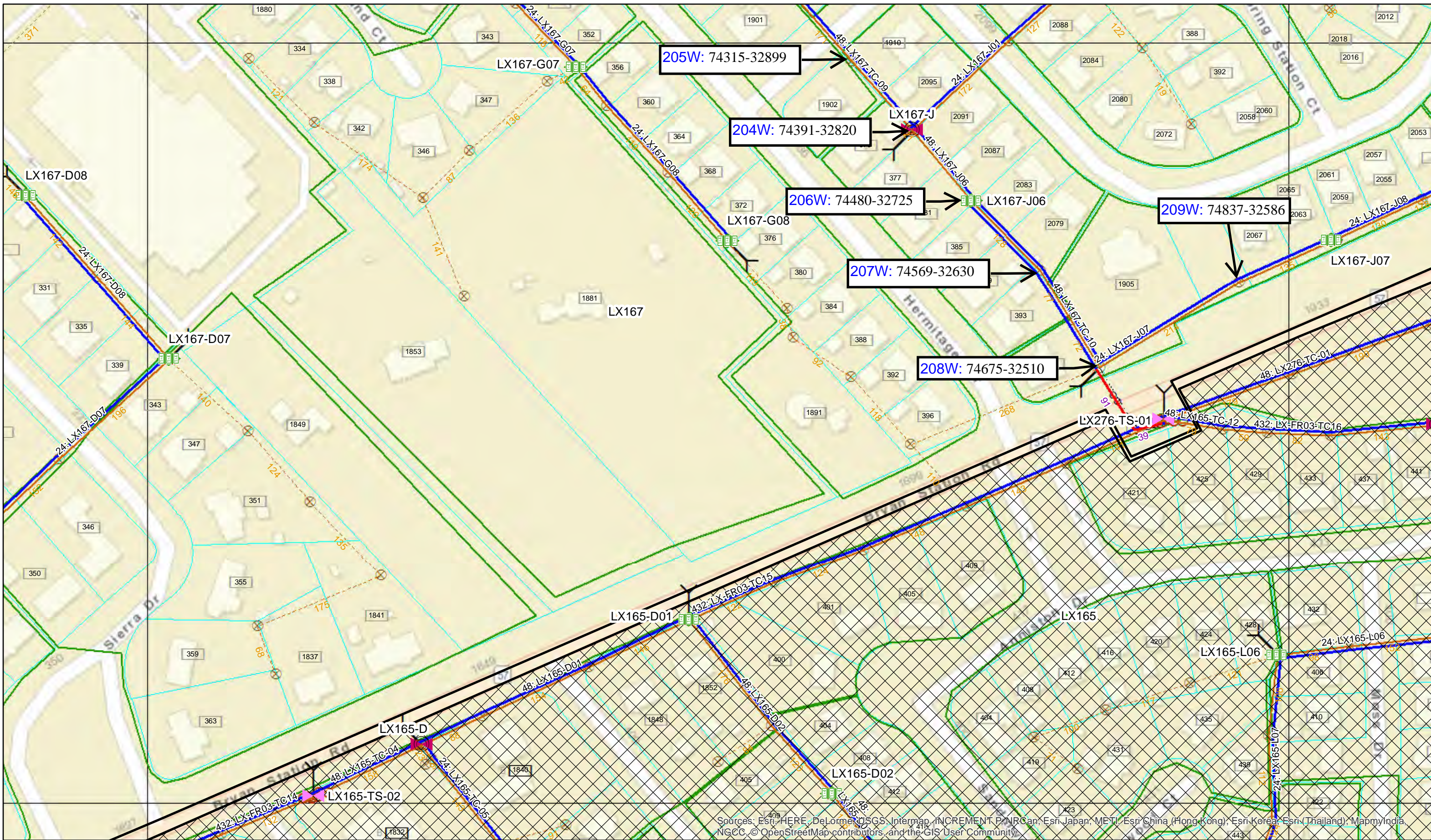
ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBL36
 PROJECT NUMBER:
 LXTNXY.00437.CB

STAKING GRID DRAWING
 ROUTE: LX167 REV0
 PROJECT: LEXINGTON CITY BUILD
 LOCATION: LEXINGTON, KY

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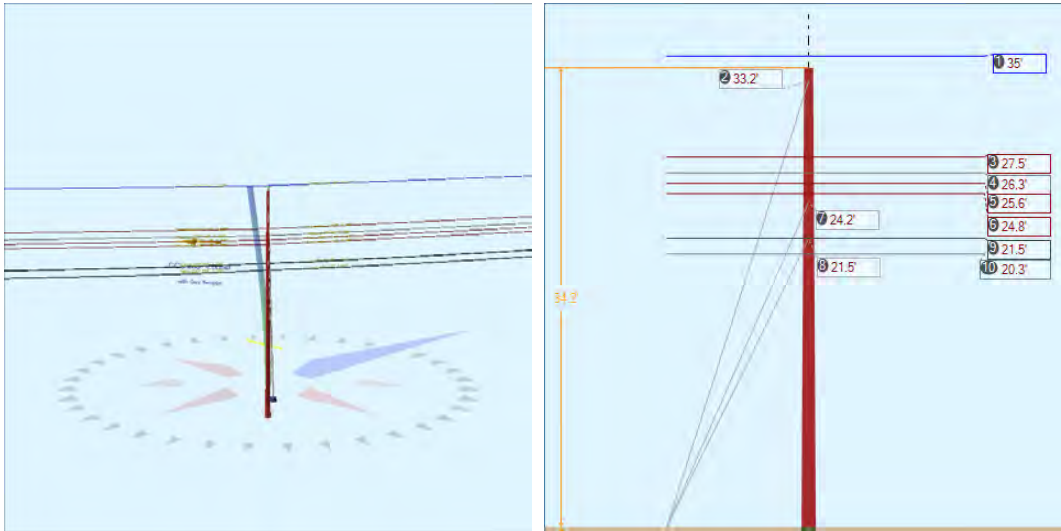
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1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND																																																					
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Pole Num:	196W - 74743-33160	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.84	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.56	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067363 Deg	Longitude:	-84.448548 Deg	Elevation:	858.207690067228		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.0	236.3
Groundline	21.0	236.3
Vertical	13.5	309.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,509	236.3
Groundline	12,509	236.3
GL Allowable	67,822	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	9.5	129.4		37.4	236.3	40.8	310.0
? EHS 3/8 (Down)			33.2	22.9	236.3	27.2	310.0
? EHS 3/8 (Down)			24.2	31.1	236.3	37.7	310.0
? Single Helix Anchor	8.5	129.1		9.4	236.3	10.4	310.0
? EHS 1/4 (Down)			21.5	31.4	236.3	38.3	310.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 242.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,317	194.3	27,610	220.7	40.7	3,686	305	3	3,689	54.2
Comms	385	56.7	6,044	48.3	8.9	807	400	4	811	11.9
GuyBraces	-1,202	-177.4	-23,544	-188.2	-34.7	-3,143	13,291	148	-2,995	-44.0
Pole	172	25.4	2,239	17.9	3.3	299	1,630	18	317	4.7
Insulators	6	0.9	161	1.3	0.2	21	59	1	22	0.3
Pole Load	678	100.0	12,509	100.0	18.4	1,670	15,685	175	1,845	27.1
Pole Reserve Capacity			55,313		81.6	5,130			4,955	72.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 242.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	386	56.9	8,490	67.9	12.5	1,133	10,991	123	1,256	18.5
Unknown, COMMUNICATION	120	17.7	1,780	14.2	2.6	238	3,064	34	272	4.0
Pole	172	25.4	2,239	17.9	3.3	299	1,630	18	317	4.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	678	100.0	12,509	100.0	18.4	1,670	15,685	175	1,845	27.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.04	0.00	0.3980	0.20	0.145	118.6	220.2	118.6	2,128	89,496	0	117	89,612
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.04	0.00	0.3980	0.06	0.145	66.5	29.0	66.5	2,128	-80,535	0	156	-80,379
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.54	6.23	0.3980	0.06	0.145	66.5	29.0	66.5	2,128	-63,275	5	123	-63,147
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.54	6.23	0.3980	0.20	0.145	118.6	220.2	118.6	2,128	70,315	10	92	70,416
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.35	6.30	0.3980	0.06	0.145	66.5	29.0	66.5	2,128	-60,528	5	117	-60,405
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.35	6.30	0.3980	0.20	0.145	118.6	220.2	118.6	2,128	67,262	10	88	67,360

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.57	6.34	0.3980	0.06	0.145	66.5	29.0	66.5	2,128	-58,751	5	114	-58,632
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.57	6.34	0.3980	0.20	0.145	118.6	220.2	118.6	2,128	65,288	10	85	65,383
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.81	6.39	0.3980	0.06	0.145	66.5	29.0	66.5	2,128	-56,990	6	111	-56,874
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.81	6.39	0.3980	0.20	0.145	118.6	220.2	118.6	2,128	63,331	10	82	63,423
Totals:											35,614	61	1,084	36,759	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.50	6.58	1.3300	1.59	0.337	118.6	220.2	118.7	925	23,857	20	146	24,022
CATV	CATV 1.0	Unknown, COMMUNICATION	21.50	6.58	1.3300	0.84	0.337	66.5	29.0	66.5	925	-21,468	11	195	-21,262
Telco	TELE 1.5	Unknown, COMMUNICATION	20.32	6.65	1.5000	1.87	0.900	118.6	220.2	118.7	2,000	48,743	35	150	48,928
Telco	TELE 1.5	Unknown, COMMUNICATION	20.32	6.65	1.5000	0.96	0.900	66.5	29.0	66.5	2,000	-43,862	19	202	-43,641
Totals:											7,269	85	693	8,047	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	34.17	0.00	0.0	0.0	13.00	9.00	10.50	0	158	158
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.54	0.00	304.6	214.6	2.00	3.00	3.19	1	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.35	0.00	304.6	214.6	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.57	0.00	304.6	214.6	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.81	0.00	304.6	214.6	2.00	3.00	3.19	1	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.50	0.00	310.2	220.2	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	20.32	0.00	310.2	220.2	5.00	3.00	0.00	2	0	2
Totals:										8	206	214

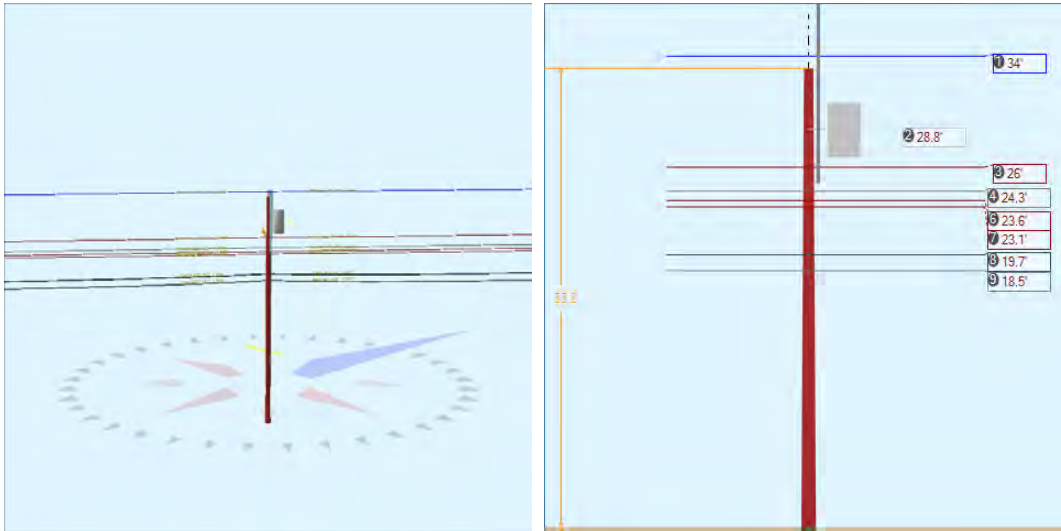
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	33.18	0.00	9.54	0.375	75.00	129.4	73.7	0.273	32.95	0.66
EHS 3/8	Down	KU, UTILITY	24.18	0.00	9.54	0.375	75.00	129.4	68.2	0.273	24.37	0.66
EHS 1/4	Down	Unknown, COMMUNICATION	21.50	0.00	8.47	0.25	75.00	129.1	68.3	0.121	21.48	0.57

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,767	3,424	3,173	3,045	890	-354	-11,019
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,220	4,746	4,312	4,004	1,599	-637	-14,646
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,291	2,083	1,882	1,748	697	-281	-5,681
Totals:										8,797	3,187	-1,272	-31,346

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	9.54	129.4	20,000	1.00	20,000	8,160	7,476	40.8
Single Helix Anchor			18.00	8.47	129.1	20,000	1.00	20,000	2,083	1,882	10.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.03	34.28	9.64	18.96	6.69	10.69	1.60e+6	60.00	57.00	34.17	116,611	1161.83	7.41

Pole Num:	197W - 74665-33083	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.19	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067119 Deg	Longitude:	-84.448792 Deg	Elevation:	873.873446093376		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.7	0.0
Groundline	34.7	0.0
Vertical	18.2	22.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,351	316.3
Groundline	22,351	316.3
GL Allowable	65,585	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 316.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	409	42.6	10,915	48.8	16.6	1,128	400	5	1,133	16.7
Comms	295	30.7	5,934	26.6	9.1	614	524	6	619	9.1
PowerEquipments	55	5.7	2,004	9.0	3.1	207	1,216	14	221	3.3
Pole	166	17.3	2,807	12.6	4.3	290	1,559	18	308	4.5
Risers	29	3.1	473	2.1	0.7	49	45	1	49	0.7
Insulators	6	0.7	218	1.0	0.3	23	59	1	23	0.3
Pole Load	961	100.0	22,351	100.0	34.1	2,311	3,803	43	2,354	34.6
Pole Reserve Capacity			43,234		65.9	4,489			4,446	65.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 316.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	499	52.0	13,599	60.8	20.7	1,406	1,701	19	1,425	21.0
Unknown, COMMUNICATION	295	30.7	5,945	26.6	9.1	615	543	6	621	9.1
Pole	166	17.3	2,807	12.6	4.3	290	1,559	18	308	4.5
Totals:	961	100.0	22,351	100.0	34.1	2,311	3,803	43	2,354	34.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.03	0.00	0.3980	0.26	0.145	118.6	40.2	118.6	2,128	7,642	0	1,052	8,694
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.03	0.00	0.3980	0.29	0.145	124.3	220.7	124.3	2,128	-7,013	0	1,103	-5,911
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.01	6.26	0.3980	0.26	0.145	118.6	40.2	118.6	2,128	5,839	20	804	6,663
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.01	6.26	0.3980	0.29	0.145	124.3	220.7	124.3	2,128	-5,358	21	842	-4,495
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.26	6.36	0.3980	0.26	0.145	118.6	40.2	118.6	2,128	5,447	21	750	6,217
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.26	6.36	0.3980	0.29	0.145	124.3	220.7	124.3	2,128	-4,999	22	786	-4,191
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.59	6.40	0.3980	0.26	0.145	118.6	40.2	118.6	2,128	5,295	21	729	6,044

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.59	6.40	0.3980	0.29	0.145	124.3	220.7	124.3	2,128	-4,859	22	764	-4,073
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.15	6.43	0.3980	0.26	0.145	118.6	40.2	118.6	2,128	5,196	21	715	5,932
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.15	6.43	0.3980	0.29	0.145	124.3	220.7	124.3	2,128	-4,769	22	750	-3,997
Totals:											2,421	169	8,293	10,883	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	19.67	6.63	1.3300	1.61	0.337	118.6	40.2	118.7	925	1,919	51	1,238	3,209
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.67	6.63	1.3300	1.70	0.337	124.3	220.7	124.3	925	-1,761	54	1,298	-409
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.53	6.70	1.5000	1.88	0.900	118.6	40.2	118.7	2,000	3,909	90	1,275	5,274
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.53	6.70	1.5000	1.99	0.900	124.3	220.7	124.3	2,000	-3,587	95	1,336	-2,156
		COMMUNICATION													
Totals:											480	290	5,147	5,917	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.76	21.60	35.0	35.0	640.00	47.00	--	24.00	--	427	1,571	1,998
Totals:											427	1,571	1,998	

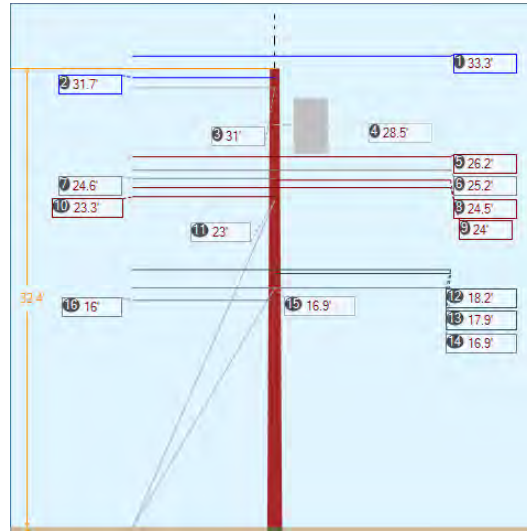
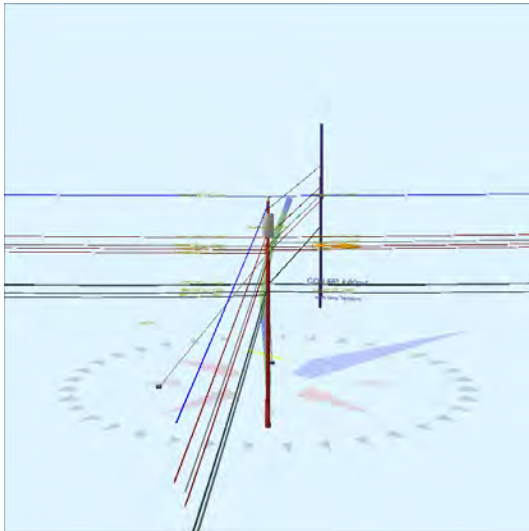
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 10.0°	Riser	KU, UTILITY	23.71	5.45	10.0	10.0	23.71	284.47	2.50	2.50	284.47	6	465	471
Totals:											6	465	471	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	33.15	0.00	0.0	0.0	13.00	9.00	10.50	0	154	154
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.01	0.00	310.5	220.5	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.26	0.00	310.5	220.5	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.59	0.00	310.5	220.5	2.00	3.00	3.19	2	11	13

Spool	Spool Insulator - 25 kV	KU, UTILITY	23.15	0.00	310.5	220.5	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	19.67	0.00	310.5	220.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.53	0.00	310.5	220.5	5.00	3.00	0.00	5	0	5
Totals:										19	199	217

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.01	33.66	9.70	14.74	6.69	10.57	1.60e+6	60.00	57.00	33.15	20,885	208.95	5.49

Pole Num:	198W - 74577-32994	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066859 Deg	Longitude:	-84.449085 Deg	Elevation:	865.459326599629		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.1	23.3
Groundline	30.1	0.0
Vertical	4.3	21.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,115	65.3
Groundline	15,629	211.7
GL Allowable	63,929	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	63.4	325.3		11.2	55.6	12.6	130.0
? EHS 3/8 (Span/Head)			31.0	16.2	55.6	19.9	130.0
? Single Helix Anchor	19.0	221.0		7.4	55.6	7.4	60.0
? EHS 3/8 (Down)			23.1	10.6	55.6	11.7	60.0
? Single Helix Anchor	14.6	318.0		6.1	55.6	8.3	130.0
? EHS 1/4 (Down)			16.9	20.3	55.6	30.4	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 211.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-665	-37.7	-18,149	-116.1	-28.4	-1,795	638	7	-1,788	-26.3
Comms	2,860	162.2	49,621	317.5	77.6	4,908	1,033	12	4,920	72.4
GuyBraces	-224	-12.7	-11,896	-76.1	-18.6	-1,177	3,139	36	-1,140	-16.8
PowerEquipments	-50	-2.8	-993	-6.4	-1.6	-98	1,216	14	-84	-1.2
Pole	-148	-8.4	-2,650	-17.0	-4.1	-262	1,506	17	-245	-3.6
Insulators	-10	-0.6	-304	-2.0	-0.5	-30	99	1	-29	-0.4
Pole Load	1,763	100.0	15,629	100.0	24.5	1,546	7,631	89	1,634	24.0
Pole Reserve Capacity			48,300		75.6	5,254			5,166	76.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 211.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-723	-41.0	-27,261	-174.4	-42.6	-2,696	3,657	42	-2,654	-39.0
Unknown, COMMUNICATION	2,635	149.4	45,540	291.4	71.2	4,504	2,468	29	4,533	66.7
Pole	-148	-8.4	-2,650	-17.0	-4.1	-262	1,506	17	-245	-3.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,763	100.0	15,629	100.0	24.5	1,546	7,631	89	1,634	24.0

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	0.00	0.3980	0.22	0.145	124.3	40.7	124.3	2,128	-90,920	0	44	-90,877
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.26	0.00	0.3980	0.23	0.145	127.5	228.0	127.5	2,128	88,353	0	41	88,395
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.74	16.13	0.3980	0.28	0.145	122.6	138.5	122.6	2,128	25,381	3	-968	24,416
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.16	6.21	0.3980	0.22	0.145	124.3	40.7	124.3	2,128	-71,478	-21	34	-71,464
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.16	6.21	0.3980	0.28	0.145	122.6	138.5	122.6	2,128	20,919	18	-798	20,140
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.16	6.21	0.3980	0.23	0.145	127.5	228.0	127.5	2,128	69,460	19	33	69,511
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.16	6.21	0.3980	0.08	0.145	63.4	325.3	63.4	2,128	-28,975	9	-398	-29,363
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.21	6.26	0.3980	0.22	0.145	124.3	40.7	124.3	2,128	-68,882	-21	33	-68,870
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.21	6.26	0.3980	0.28	0.145	122.6	138.5	122.6	2,128	20,159	-21	-769	19,370
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.21	6.26	0.3980	0.08	0.145	63.4	325.3	63.4	2,128	-27,922	-11	-384	-28,317
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.61	6.30	0.3980	0.23	0.145	127.5	228.0	127.5	2,128	65,349	21	31	65,400
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.50	6.30	0.3980	0.22	0.145	124.3	40.7	124.3	2,128	-66,938	-21	32	-66,927
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.98	6.33	0.3980	0.22	0.145	124.3	40.7	124.3	2,128	-65,524	-20	31	-65,512
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.98	6.33	0.3980	0.28	0.145	122.6	138.5	122.6	2,128	19,176	-20	-731	18,425
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.98	6.33	0.3980	0.08	0.145	63.4	325.3	63.4	2,128	-26,561	-10	-365	-26,936
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.98	6.33	0.3980	0.23	0.145	127.5	228.0	127.5	2,128	63,671	21	30	63,722
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.34	6.37	0.3980	0.23	0.145	127.5	228.0	127.5	2,128	61,961	21	29	62,011
Totals:											-12,771	-32	-4,074	-16,877	

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown,	18.18	6.67	1.3300	1.68	0.337	124.3	40.7	124.3	925	-21,597	12	49	-21,537
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.18	6.67	1.3300	1.68	0.337	122.6	138.5	122.6	925	6,321	12	-1,130	5,203
		COMMUNICATION													

CATV	CATV 1.0	Unknown, COMMUNICATION	18.18	6.67	1.3300	1.74	0.337	127.5	228.0	127.5	925	20,987	12	46	21,046
CATV	CATV 1.0	Unknown, COMMUNICATION	17.91	6.69	1.3300	0.80	0.337	63.4	325.3	63.4	925	-8,624	-11	-555	-9,190
Telco	TELE 1.5	Unknown, COMMUNICATION	16.89	6.75	1.5000	1.97	0.900	124.3	40.7	124.3	2,000	-43,380	21	49	-43,309
Telco	TELE 1.5	Unknown, COMMUNICATION	16.89	6.75	1.5000	1.95	0.900	122.6	138.5	122.6	2,000	12,696	21	-1,147	11,569
Telco	TELE 1.5	Unknown, COMMUNICATION	16.89	6.75	1.5000	2.04	0.900	127.5	228.0	127.5	2,000	42,155	22	47	42,223
Telco	TELE 1.5	Unknown, COMMUNICATION	16.03	6.80	1.5000	2.04	0.900	127.5	228.0	127.5	2,000	39,998	95	44	40,138
Totals:											48,556	183	-2,597	46,142	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-50KVA	KU, UTILITY	28.46	21.57	135.0	135.0	640.00	47.00	--	24.00	--	503	-1,426	-924
Totals:											503	-1,426	-924

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	KU, UTILITY	32.38	0.00	0.0	0.0	13.00	9.00	10.50	0	-138	-138
Deadend	KU, UTILITY	31.74	0.00	138.5	138.5	3.00	3.80	12.75	2	-68	-66
Spool	KU, UTILITY	26.16	0.00	40.7	40.7	2.00	3.00	3.19	-2	-11	-13
Spool	KU, UTILITY	26.16	0.00	183.1	93.1	2.00	3.00	3.19	2	-11	-9
Spool	KU, UTILITY	25.21	0.00	40.7	40.7	2.00	3.00	3.19	-2	-11	-13
Spool	KU, UTILITY	24.61	0.00	230.6	140.6	2.00	3.00	3.19	2	-10	-9
Spool	KU, UTILITY	24.50	0.00	40.7	40.7	2.00	3.00	3.19	-2	-10	-12
Spool	KU, UTILITY	23.98	0.00	51.9	321.9	2.00	3.00	3.19	-2	-10	-12
Spool	KU, UTILITY	23.98	0.00	231.9	321.9	2.00	3.00	3.19	2	-10	-8
Spool	KU, UTILITY	23.34	0.00	230.6	140.6	2.00	3.00	3.19	2	-10	-8
Bolt	Unknown, COMMUNICATION	18.18	0.00	134.4	224.4	5.00	3.00	0.00	1	0	1

Bolt	Three Bolt	Unknown, COMMUNICATION	17.91	0.00	325.3	325.3	5.00	3.00	0.00	-2	0	-2
Bolt	Three Bolt	Unknown, COMMUNICATION	16.89	0.00	134.4	224.4	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	16.03	0.00	228.0	318.0	5.00	3.00	0.00	5	0	5
Totals:										7	-290	-283

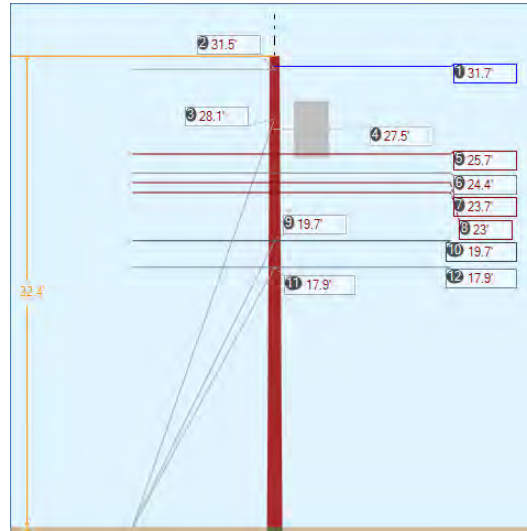
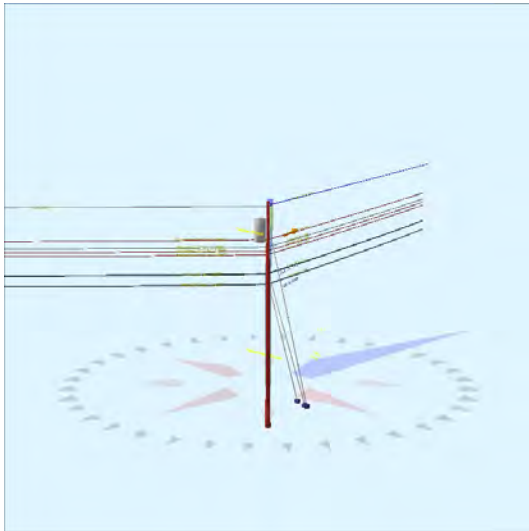
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	31.01	31.01	63.40	0.375	75.00	325.3	0.0	0.273	61.62	0.87
EHS 3/8	Down	KU, UTILITY	23.05	0.00	19.00	0.375	75.00	221.0	50.3	0.273	28.16	0.26
EHS 1/4	Down	Unknown, COMMUNICATION	16.89	0.00	14.61	0.25	75.00	318.0	49.0	0.121	20.60	0.36

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	2,762	2,511	2,247	0	2,247	-900	-28,397
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,624	1,476	1,474	1,134	941	928	21,136
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,822	1,656	1,216	917	798	-224	-3,800
Totals:										2,052	3,986	-196	-11,062

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	63.40	325.3	20,000	1.00	20,000	2,511	2,247	12.6
Single Helix Anchor			18.00	19.00	221.0	20,000	1.00	20,000	1,476	1,474	7.4
Single Helix Anchor			18.00	14.61	318.0	20,000	1.00	20,000	1,656	1,216	8.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	21.18	33.55	9.64	12.03	6.69	10.48	1.60e+6	60.00	57.00	32.38	176,414	1774.71	23.26

Pole Num:	199W - 74976-33005	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066856 Deg	Longitude:	-84.447820 Deg	Elevation:	849.679941101729		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	47.0	28.3
Groundline	11.8	0.0
Vertical	18.2	24.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,221	299.9
Groundline	7,537	304.6
GL Allowable	63,944	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	54.5	223.3		10.8	334.8	11.1	30.0
? EHS 3/8 (Span/Head)			31.5	15.5	334.8	17.6	30.0
? Single Helix Anchor	14.6	109.0		43.4	334.8	43.5	311.2
? EHS 3/8 (Down)			28.1	62.6	334.8	69.1	311.2
? Single Helix Anchor	14.0	109.0		17.8	334.8	18.1	290.0
? EHS 1/4 (Down)			19.7	59.4	334.8	66.4	290.0
? Single Helix Anchor	11.3	109.0		16.5	334.8	16.8	280.0
? EHS 1/4 (Down)			17.9	55.1	334.8	61.6	280.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 304.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,317	438.4	37,076	491.9	58.0	12,796	181	2	12,798	188.2
Comms	3,543	359.9	20,198	268.0	31.6	6,971	261	3	6,974	102.6
GuyBraces	-7,067	-717.7	-50,563	-670.9	-79.1	-17,450	20,222	235	-17,215	-253.2
PowerEquipments	47	4.8	68	0.9	0.1	24	1,216	14	38	0.6
Pole	140	14.2	719	9.5	1.1	248	1,507	17	265	3.9
Insulators	4	0.4	39	0.5	0.1	14	40	0	14	0.2
Pole Load	985	100.0	7,537	100.0	11.8	2,601	23,427	272	2,873	42.2
Pole Reserve Capacity			56,407		88.2	4,199			3,927	57.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 304.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	910	92.4	7,594	100.8	11.9	2,621	13,034	151	2,772	40.8
Unknown, COMMUNICATION	-65	-6.6	-775	-10.3	-1.2	-268	8,886	103	-164	-2.4
Pole	140	14.2	719	9.5	1.1	248	1,507	17	265	3.9
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	985	100.0	7,537	100.0	11.8	2,601	23,427	272	2,873	42.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	31.67	16.13	0.3980	0.06	0.145	66.4	344.8	66.4	2,128	66,948	5	62	67,014
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.66	6.24	0.3980	0.53	0.145	54.5	223.3	54.5	450	2,265	9	337	2,610
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.66	6.24	0.3980	0.65	0.145	66.4	344.8	66.4	450	11,470	11	50	11,531
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.36	6.31	0.3980	0.53	0.145	54.5	223.3	54.5	450	2,150	9	320	2,478
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.36	6.31	0.3980	0.65	0.145	66.4	344.8	66.4	450	10,887	11	48	10,946
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.69	6.35	0.3980	0.53	0.145	54.5	223.3	54.5	450	2,091	9	311	2,411
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.69	6.35	0.3980	0.65	0.145	66.4	344.8	66.4	450	10,589	11	46	10,646
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.02	6.39	0.3980	0.53	0.145	54.5	223.3	54.5	450	2,031	9	302	2,342
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.02	6.39	0.3980	0.65	0.145	66.4	344.8	66.4	450	10,287	11	45	10,343
										Totals:	118,717	83	1,521	120,322

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	19.70	6.58	1.3300	0.68	0.337	54.5	223.3	54.5	925	3,574	22	527	4,123
CATV	CATV 1.0 Unknown, COMMUNICATION	19.70	6.58	1.3300	0.83	0.337	66.4	344.8	66.4	925	18,101	27	78	18,206

Telco	TELE 1.5	Unknown, COMMUNICATION	17.88	6.69	1.5000	0.77	0.900	54.5	223.3	54.5	2,000	7,013	39	523	7,575
Telco	TELE 1.5	Unknown, COMMUNICATION	17.88	6.69	1.5000	0.95	0.900	66.4	344.8	66.4	2,000	35,518	48	78	35,643
Totals:												64,205	135	1,206	65,547

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA KU, UTILITY	27.53	21.63	185.0	185.0	640.00	47.00	--	24.00	--	-1,083	1,306	222	
Totals:												-1,083	1,306	222

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	31.67	0.00	344.8	344.8	3.00	3.80	12.75	6	65	70	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.66	0.00	284.0	194.0	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.36	0.00	284.0	194.0	2.00	3.00	3.19	2	10	12	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.69	0.00	284.0	194.0	2.00	3.00	3.19	2	10	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.02	0.00	284.0	194.0	2.00	3.00	3.19	2	9	11	
Bolt	Three Bolt Unknown, COMMUNICATION	19.70	0.00	284.0	194.0	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	17.88	0.00	284.0	194.0	5.00	3.00	0.00	5	0	5	
Totals:										23	103	127

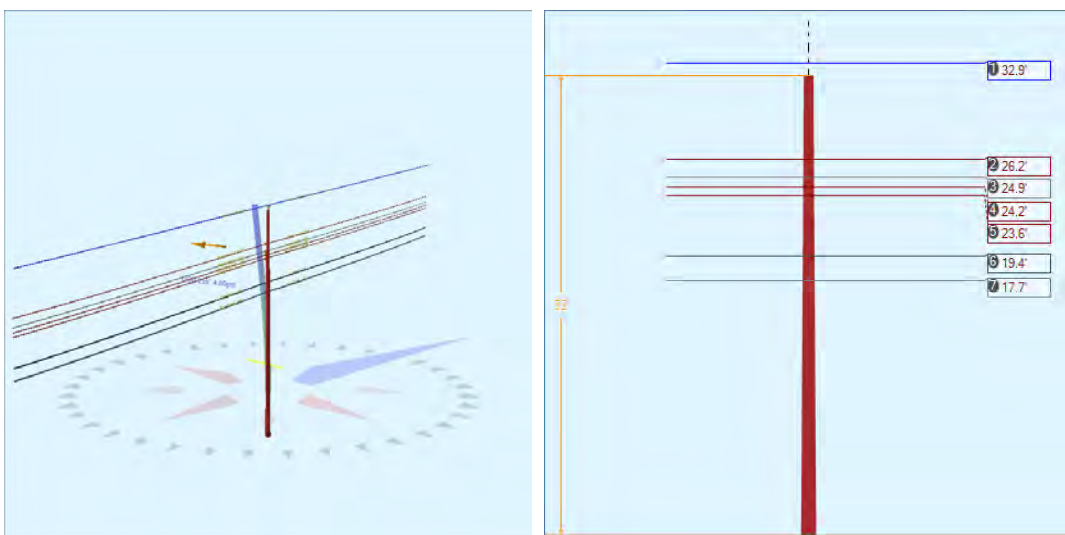
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	31.47	31.47	54.50	0.375	75.00	223.3	0.0	0.273	52.72	0.72
EHS 3/8	Down	KU, UTILITY	28.09	0.00	14.63	0.375	75.00	109.0	62.3	0.273	30.04	1.64
EHS 1/4	Down	Unknown, COMMUNICATION	19.70	0.00	14.01	0.25	75.00	109.0	54.4	0.121	22.48	1.13
EHS 1/4	Down	Unknown, COMMUNICATION	17.88	0.00	11.29	0.25	75.00	109.0	57.5	0.121	19.46	0.91

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	2,433	2,212	2,153	0	2,153	325	10,638
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,576	8,705	8,677	7,680	4,037	-3,888	-106,655
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,973	3,612	3,556	2,891	2,070	-1,993	-38,457
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,689	3,354	3,295	2,780	1,769	-1,704	-29,616
Totals:										13,351	10,029	-7,260	-164,090

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	54.50	223.3	20,000	1.00	20,000	2,212	2,153	11.1
Single Helix Anchor		18.00	14.63	109.0	20,000	1.00	20,000	8,705	8,677	43.5
Single Helix Anchor		18.00	14.01	109.0	20,000	1.00	20,000	3,612	3,556	18.1
Single Helix Anchor		18.00	11.29	109.0	20,000	1.00	20,000	3,354	3,295	16.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.15	34.05	9.51	22.28	6.69	10.48	1.60e+6	60.00	57.00	32.39	128,535	1287.17	5.49

Pole Num:	200W - 74965-33063	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.00	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.77	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067017 Deg	Longitude:	-84.447866 Deg	Elevation:	869.255162623639		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	254.8
Groundline	0.0	254.8
Vertical	16.7	254.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	254.8	254.8
Groundline	254.8	254.8
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 254.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	184	36.3	5,000	45.7	7.9	535	223	3	537	7.9
Comms	156	30.8	3,075	28.1	4.9	329	292	3	332	4.9
Pole	160	31.6	2,648	24.2	4.2	283	1,480	17	300	4.4
Insulators	7	1.3	215	2.0	0.3	23	59	1	24	0.3
Pole Load	506	100.0	10,938	100.0	17.3	1,169	2,054	24	1,193	17.5
Pole Reserve Capacity			52,179		82.7	5,631			5,607	82.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 254.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	190	37.6	5,205	47.6	8.3	556	262	3	560	8.2
Unknown, COMMUNICATION	156	30.8	3,086	28.2	4.9	330	311	4	334	4.9
Pole	160	31.6	2,648	24.2	4.2	283	1,480	17	300	4.4
Totals:	506	100.0	10,938	100.0	17.3	1,169	2,054	24	1,193	17.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.88	0.00	0.3980	0.09	0.145	68.8	344.7	68.8	2,128	64	0	593	657
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.88	0.00	0.3980	0.08	0.145	66.4	164.8	66.4	2,128	58	0	572	630
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.17	6.18	0.3980	0.67	0.145	66.4	164.8	66.4	450	10	11	455	476
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.17	6.18	0.3980	0.70	0.145	68.8	344.7	68.8	450	11	12	472	494
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.91	6.26	0.3980	0.67	0.145	66.4	164.8	66.4	450	9	11	433	454
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.91	6.26	0.3980	0.70	0.145	68.8	344.7	68.8	450	10	12	449	471
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.23	6.30	0.3980	0.67	0.145	66.4	164.8	66.4	450	9	11	421	442
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.23	6.30	0.3980	0.70	0.145	68.8	344.7	68.8	450	10	12	437	458
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.64	6.33	0.3980	0.67	0.145	66.4	164.8	66.4	450	9	12	411	432
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.64	6.33	0.3980	0.70	0.145	68.8	344.7	68.8	450	10	12	426	448
										Totals:	200	93	4,669	4,962	

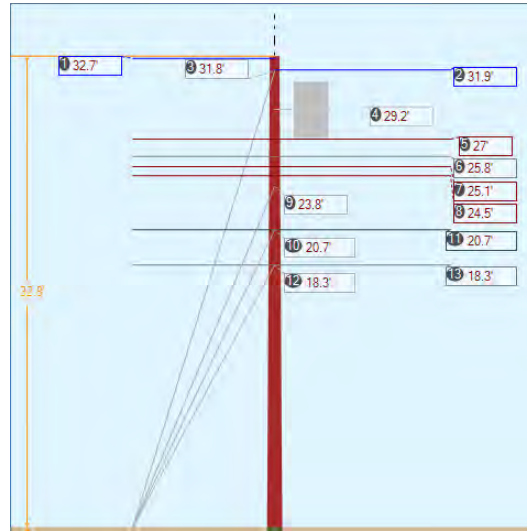
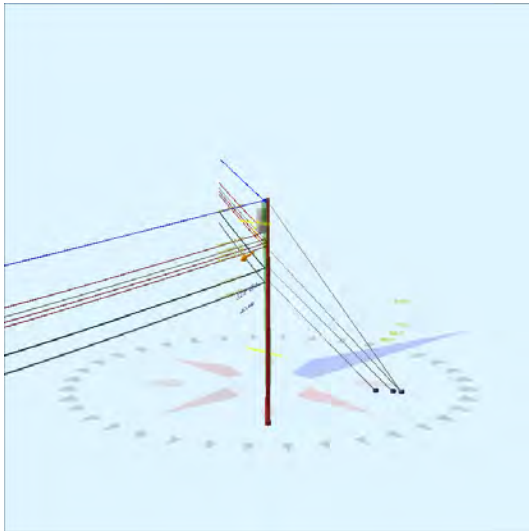
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.41	6.58	1.3300	0.84	0.337	66.4	164.8	66.4	925	15	29	688	731
CATV	CATV 1.0	Unknown, COMMUNICATION	19.41	6.58	1.3300	0.87	0.337	68.8	344.7	68.8	925	16	30	713	759

Telco	TELE 1.5	Unknown, COMMUNICATION	17.70	6.68	1.5000	0.96	0.900	66.4	164.8	66.4	2,000	29	51	686	766
Telco	TELE 1.5	Unknown, COMMUNICATION	17.70	6.68	1.5000	1.00	0.900	68.8	344.7	68.8	2,000	32	53	710	795
Totals:											93	162	2,797	3,051	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	32.00	0.00	0.0	0.0	13.00	9.00	10.50	0	149	149	
Spool	Spool Insulator - 25 kV KU, UTILITY	26.17	0.00	254.7	164.7	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.91	0.00	254.7	164.7	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.23	0.00	254.7	164.7	2.00	3.00	3.19	2	11	13	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.64	0.00	254.7	164.7	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt Unknown, COMMUNICATION	19.41	0.00	254.7	164.7	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt Unknown, COMMUNICATION	17.70	0.00	254.7	164.7	5.00	3.00	0.00	5	0	5	
Totals:										18	195	213

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	16.74	32.82	9.79	9.88	6.69	10.44	1.60e+6	60.00	57.00	32.00	37,460	373.39	18.18

Pole Num:	201W - 74948-33132	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.17	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067204 Deg	Longitude:	-84.447920 Deg	Elevation:	854.700450306811		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.6	24.0
Groundline	19.0	0.0
Vertical	11.0	25.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	5,485	171.4
Groundline	12,308	161.5
GL Allowable	64,891	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	23.3	56.0		29.6	151.2	31.5	240.0
? EHS 3/8 (Down)			31.8	23.7	151.2	27.3	240.0
? EHS 3/8 (Down)			23.8	19.1	151.2	22.7	240.0
? Single Helix Anchor	21.9	56.0		5.8	151.2	6.3	240.0
? EHS 1/4 (Down)			20.7	19.3	151.2	23.0	240.0
? Single Helix Anchor	18.9	56.0		6.0	151.2	6.5	240.0
? EHS 1/4 (Down)			18.3	19.9	151.2	23.7	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	964	201.8	25,654	208.4	39.5	3,162	220	3	3,164	46.5
Comms	720	150.8	11,715	95.2	18.1	1,444	289	3	1,447	21.3
GuyBraces	-1,429	-299.2	-30,735	-249.7	-47.4	-3,788	9,334	107	-3,681	-54.1
PowerEquipments	54	11.3	3,179	25.8	4.9	392	1,216	14	406	6.0
Pole	162	33.9	2,323	18.9	3.6	286	1,537	18	304	4.5
Insulators	7	1.4	173	1.4	0.3	21	46	1	22	0.3
Pole Load	478	100.0	12,308	100.0	19.0	1,517	12,641	145	1,662	24.4
Pole Reserve Capacity			52,583		81.0	5,283			5,138	75.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 161.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-183	-38.3	1,715	13.9	2.6	211	9,536	110	321	4.7
Unknown, COMMUNICATION	499	104.3	8,270	67.2	12.7	1,019	1,568	18	1,037	15.3
Pole	162	33.9	2,323	18.9	3.6	286	1,537	18	304	4.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	478	100.0	12,308	100.0	19.0	1,517	12,641	145	1,662	24.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.67	16.10	0.3980	0.07	0.145	68.8	164.7	68.8	2,128	90,229	6	8	90,243
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.86	16.15	0.3980	0.06	0.145	64.9	306.0	64.9	2,128	-71,744	-5	134	-71,615
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.04	6.18	0.3980	0.68	0.145	68.8	164.7	68.8	450	15,796	3	6	15,806
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.04	6.18	0.3980	0.63	0.145	64.9	306.0	64.9	450	-12,878	3	114	-12,761
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.84	6.25	0.3980	0.68	0.145	68.8	164.7	68.8	450	15,093	3	6	15,103
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.84	6.25	0.3980	0.63	0.145	64.9	306.0	64.9	450	-12,305	3	109	-12,193
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.14	6.29	0.3980	0.68	0.145	68.8	164.7	68.8	450	14,682	3	6	14,691
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.14	6.29	0.3980	0.63	0.145	64.9	306.0	64.9	450	-11,970	3	106	-11,861
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.49	6.33	0.3980	0.68	0.145	68.8	164.7	68.8	450	14,306	3	6	14,315
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.49	6.33	0.3980	0.63	0.145	64.9	306.0	64.9	450	-11,664	3	103	-11,557
Totals:											29,546	27	597	30,171	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	20.74	6.55	1.3300	0.87	0.337	68.8	164.7	68.8	925	24,899	8	10	24,917
CATV	CATV 1.0	Unknown, COMMUNICATION	20.74	6.55	1.3300	0.81	0.337	64.9	306.0	64.9	925	-20,300	8	178	-20,114

Telco	TELE 1.5	Unknown,	18.28	6.69	1.5000	0.99	0.900	68.8	164.7	68.8	2,000	47,446	15	9	47,470
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.28	6.69	1.5000	0.93	0.900	64.9	306.0	64.9	2,000	-38,681	14	171	-38,496
		COMMUNICATION													
Totals:												13,364	44	369	13,778

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	29.25	21.55	170.0	170.0	640.00	47.00	--	24.00	--	2,160	1,578	3,738
Totals:												2,160	1,578	3,738

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	32.67	0.00	164.7	164.7	3.00	3.80	12.75	8	76	83	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.86	0.00	306.0	306.0	3.00	3.80	12.75	-6	74	68	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.04	0.00	235.4	145.4	2.00	3.00	3.19	1	12	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.84	0.00	235.4	145.4	2.00	3.00	3.19	1	12	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.14	0.00	235.4	145.4	2.00	3.00	3.19	1	12	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.49	0.00	235.4	145.4	2.00	3.00	3.19	1	11	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.74	0.00	235.4	145.4	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.28	0.00	235.4	145.4	5.00	3.00	0.00	1	0	1	
Totals:											7	196	203

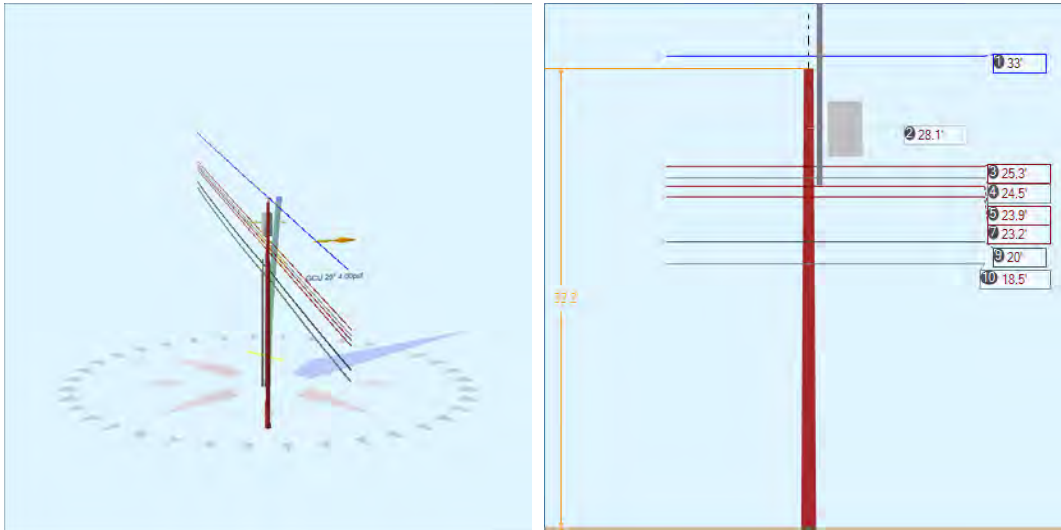
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	31.78	0.00	23.32	0.375	75.00	56.0	53.6	0.273	37.75	0.78
EHS 3/8	Down	KU, UTILITY	23.77	0.00	23.32	0.375	75.00	56.0	45.4	0.273	31.57	0.53
EHS 1/4	Down	KU, UTILITY	20.74	0.00	21.87	0.25	75.00	56.0	43.4	0.121	28.40	0.47
EHS 1/4	Down	Unknown, COMMUNICATION	18.28	0.00	18.88	0.25	75.00	56.0	43.9	0.121	24.53	0.41

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,788	3,443	3,281	2,639	1,950	-521	-16,070
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,149	2,863	2,650	1,887	1,861	-498	-11,528
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,376	1,251	1,156	794	841	-225	-4,494
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,421	1,292	1,192	827	859	-230	-4,055
Totals:										6,147	5,510	-1,473	-36,147

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	23.32	56.0	20,000	1.00	20,000	6,290	5,917	31.5
Single Helix Anchor		18.00	21.87	56.0	20,000	1.00	20,000	1,251	1,156	6.3
Single Helix Anchor		18.00	18.88	56.0	20,000	1.00	20,000	1,292	1,192	6.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.53	34.26	9.50	16.87	6.69	10.53	1.60e+6	60.00	57.00	32.83	114,545	1149.16	9.09

Pole Num:	202W - 74868-33192	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.83	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067312 Deg	Longitude:	-84.448098 Deg	Elevation:	852.761235229882		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	27.0	29.3
Groundline	27.0	29.3
Vertical	17.1	29.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	16,764	29.3
Groundline	16,764	29.3
GL Allowable	63,472	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 26.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	255	34.5	6,786	40.5	10.7	724	304	4	728	10.7
Comms	207	28.0	4,213	25.1	6.6	450	399	5	454	6.7
PowerEquipments	55	7.4	2,061	12.3	3.3	220	1,216	14	234	3.4
Pole	161	21.7	2,663	15.9	4.2	284	1,492	17	302	4.4
Risers	56	7.6	828	4.9	1.3	88	87	1	89	1.3
Insulators	6	0.9	214	1.3	0.3	23	59	1	23	0.3
Pole Load	740	100.0	16,764	100.0	26.4	1,790	3,557	41	1,831	26.9
Pole Reserve Capacity			46,708		73.6	5,010			4,969	73.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 26.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	373	50.3	9,878	58.9	15.6	1,055	1,647	19	1,074	15.8
Unknown, COMMUNICATION	207	28.0	4,223	25.2	6.7	451	418	5	456	6.7
Pole	161	21.7	2,663	15.9	4.2	284	1,492	17	302	4.4
Totals:	740	100.0	16,764	100.0	26.4	1,790	3,557	41	1,831	26.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.05	0.00	0.3980	0.27	0.145	120.0	306.1	120.0	2,128	11,894	0	1,017	12,911
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.05	0.00	0.3980	0.08	0.145	64.9	126.0	64.9	2,128	-11,773	0	550	-11,222
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.30	6.24	0.3980	0.08	0.145	64.9	126.0	64.9	2,128	-9,010	11	421	-8,578
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.30	6.24	0.3980	0.27	0.145	120.0	306.1	120.0	2,128	9,103	20	778	9,902
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.50	6.29	0.3980	0.08	0.145	64.9	126.0	64.9	2,128	-8,725	11	408	-8,306
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.50	6.29	0.3980	0.27	0.145	120.0	306.1	120.0	2,128	8,815	20	754	9,589
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.92	6.33	0.3980	0.08	0.145	64.9	126.0	64.9	2,128	-8,516	11	398	-8,107

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.92	6.33	0.3980	0.27	0.145	120.0	306.1	120.0	2,128	8,603	21	736	9,359
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.16	6.37	0.3980	0.08	0.145	64.9	126.0	64.9	2,128	-8,248	11	385	-7,851
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.16	6.37	0.3980	0.27	0.145	120.0	306.1	120.0	2,128	8,333	21	713	9,066
Totals:											476	126	6,160	6,762	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.03	6.55	1.3300	0.82	0.337	64.9	126.0	64.9	925	-3,100	27	679	-2,393
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.03	6.55	1.3300	1.64	0.337	120.0	306.1	120.0	925	3,132	51	1,255	4,438
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.48	6.64	1.5000	0.93	0.900	64.9	126.0	64.9	2,000	-6,185	49	685	-5,451
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.48	6.64	1.5000	1.91	0.900	120.0	306.1	120.0	2,000	6,248	90	1,266	7,604
		COMMUNICATION													
Totals:											95	217	3,886	4,198	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.09	21.58	310.0	310.0	640.00	47.00	--	24.00	--	515	1,538	2,054
Totals:											515	1,538	2,054	

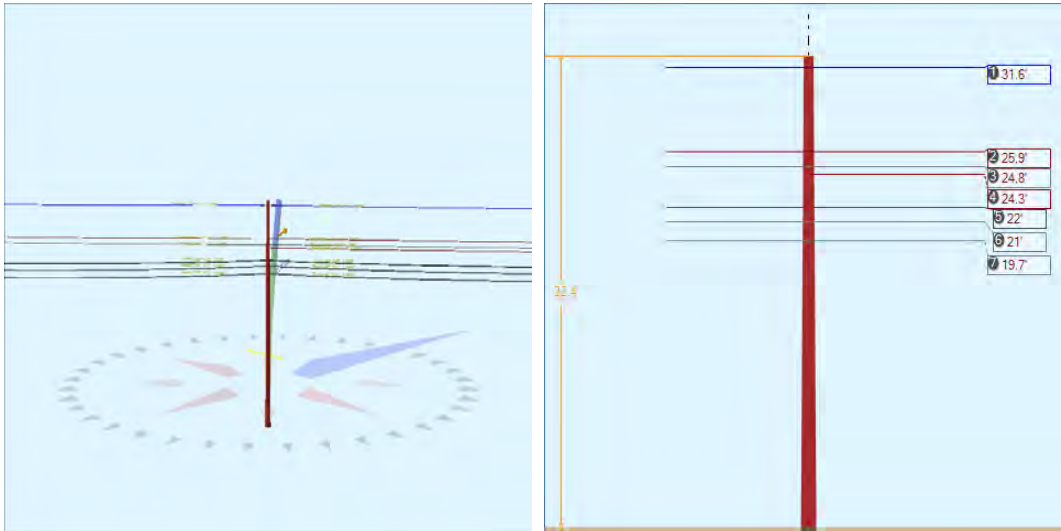
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 250.0°	Riser	KU, UTILITY	23.37	5.45	250.0	250.0	23.37	280.41	2.50	2.50	280.41	-7	346	338
Riser 250.0°	Riser	KU, UTILITY	22.26	5.45	250.0	250.0	22.26	267.08	4.00	4.00	267.08	-15	502	487
Totals:											-22	848	825	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.17	0.00	0.0	0.0	13.00	9.00	10.50	0	150	150
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.30	0.00	36.1	306.1	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.50	0.00	36.1	306.1	2.00	3.00	3.19	2	11	13

Spool	Spool Insulator - 25 kV	KU, UTILITY	23.92	0.00	36.1	306.1	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.16	0.00	36.1	306.1	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.03	0.00	36.1	306.1	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.48	0.00	36.1	306.1	5.00	3.00	0.00	5	0	5
Totals:										18	195	213

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.60	33.63	9.60	14.14	6.69	10.45	1.60e+6	60.00	57.00	32.17	20,819	208.00	5.85

Pole Num:	203W - 74507-32929	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.56	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.93	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066615 Deg	Longitude:	-84.449409 Deg	Elevation:	855.595956144957		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	64.2	0.0
Groundline	64.2	0.0
Vertical	9.9	18.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	40,821	6.8
Groundline	40,821	6.8
GL Allowable	64,046	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 6.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,171	67.6	29,204	71.5	45.6	3,103	339	4	3,107	45.7
Comms	431	24.9	9,360	22.9	14.6	995	1,061	12	1,007	14.8
Pole	126	7.3	2,100	5.1	3.3	223	1,510	18	241	3.5
Insulators	5	0.3	157	0.4	0.3	17	51	1	17	0.3
Pole Load	1,732	100.0	40,821	100.0	63.7	4,338	2,960	34	4,372	64.3
Pole Reserve Capacity			23,225		36.3	2,462			2,428	35.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 6.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,175	67.8	29,351	71.9	45.8	3,119	361	4	3,123	45.9
Unknown, COMMUNICATION	431	24.9	9,371	23.0	14.6	996	1,089	13	1,008	14.8
Pole	126	7.3	2,100	5.1	3.3	223	1,510	18	241	3.5
Totals:	1,732	100.0	40,821	100.0	63.7	4,338	2,960	34	4,372	64.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.65	16.14	0.3980	0.72	0.145	127.5	48.0	127.5	1,228	29,228	9	687	29,924
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.65	16.14	0.3980	1.18	0.145	172.9	229.6	172.9	1,228	-28,503	-12	965	-27,550
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.86	6.23	0.3980	0.72	0.145	127.5	48.0	127.5	1,228	23,877	15	561	24,452
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.86	6.23	0.3980	1.18	0.145	172.9	229.6	172.9	1,228	-23,283	20	788	-22,475
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.83	6.29	0.3980	0.72	0.145	127.5	48.0	127.5	1,228	22,929	15	539	23,482
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.83	6.29	0.3980	1.18	0.145	172.9	229.6	172.9	1,228	-22,359	20	757	-21,582
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.29	6.32	0.3980	0.72	0.145	127.5	48.0	127.5	1,228	22,435	17	527	22,978
Totals:											24,324	83	4,823	29,229	

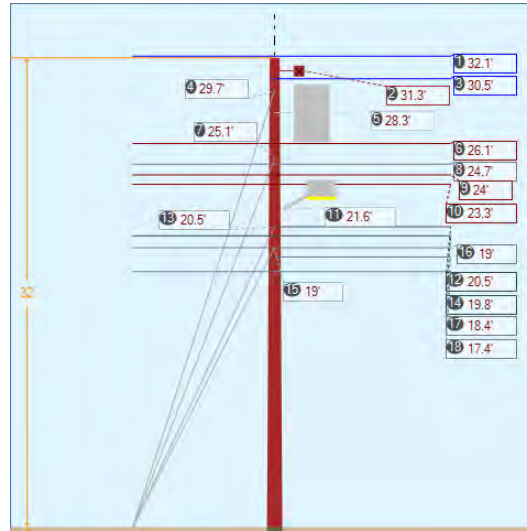
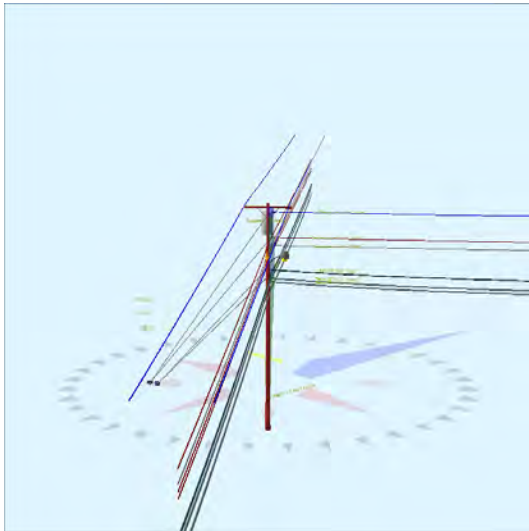
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.01	6.45	1.3300	1.76	0.337	127.5	48.0	127.5	925	15,311	36	973	16,320
CATV	CATV 1.0	Unknown, COMMUNICATION	22.01	6.45	1.3300	2.57	0.337	172.9	229.6	172.9	925	-14,931	49	1,367	-13,514
Telco	TELE 1.5	Unknown, COMMUNICATION	21.03	6.51	1.5000	2.05	0.900	127.5	48.0	127.5	2,000	31,628	64	1,016	32,707
Telco	TELE 1.5	Unknown, COMMUNICATION	21.03	6.51	1.5000	3.05	0.900	172.9	229.6	173.0	2,000	-30,841	86	1,428	-29,328

Telco	TELE 1.5	Unknown, COMMUNICATION	19.72	6.59	1.5000	3.05	0.900	172.9	229.6	173.0	2,000	-28,923	89	1,339	-27,495
Telco	TELE 1.5	Unknown, COMMUNICATION	19.72	6.59	1.5000	2.05	0.900	127.5	48.0	127.5	2,000	29,660	65	953	30,678
Totals:												1,904	389	7,075	9,368

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	31.65	0.00	48.0	48.0	3.00	3.80	12.75	6	58	64
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	31.65	0.00	229.6	229.6	3.00	3.80	12.75	-6	58	52
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.86	0.00	318.8	228.8	2.00	3.00	3.19	1	9	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.83	0.00	318.8	228.8	2.00	3.00	3.19	1	9	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.29	0.00	48.0	48.0	2.00	3.00	3.19	2	9	10
Bolt	Three Bolt	Unknown, COMMUNICATION	22.01	0.00	318.8	228.8	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	21.03	0.00	318.8	228.8	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	19.72	0.00	319.6	229.6	5.00	3.00	0.00	4	0	4
Totals:										15	143	158

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.65	33.12	9.76	12.19	6.69	10.49	1.60e+6	60.00	57.00	32.44	29,828	299.03	10.10

Pole Num:	204W - 74391-32820	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.04	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.75	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066299 Deg	Longitude:	-84.449859 Deg	Elevation:	882.399500407247		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.6	0.0
Groundline	38.6	0.0
Vertical	24.1	24.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	21,106	105.0
Groundline	21,106	105.0
GL Allowable	63,016	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.8	229.5		66.8	135.6	69.8	60.0
? EHS 3/8 (Down)			29.7	42.2	135.6	49.0	50.0
? EHS 3/8 (Down)			25.1	54.3	135.6	61.9	70.0
? Single Helix Anchor	19.4	228.0		38.6	135.6	42.2	30.0
? EHS 1/4 (Down)			20.5	63.0	135.6	76.2	30.0
? EHS 1/4 (Down)			19.0	65.9	135.6	79.0	30.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 105.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,942	295.9	86,114	408.0	136.7	14,473	636	7	14,480	212.9
Comms	3,962	237.2	48,723	230.9	77.3	8,189	1,441	17	8,206	120.7
GuyBraces	-7,469	-447.1	-115,805	-548.7	-183.8	-19,463	24,313	285	-19,178	-282.0
PowerEquipments	47	2.8	-412	-2.0	-0.7	-69	1,216	14	-55	-0.8
Pole	137	8.2	1,447	6.9	2.3	243	1,477	17	261	3.8
Crossarms	28	1.7	534	2.5	0.9	90	95	1	91	1.3
Streetlights	17	1.0	386	1.8	0.6	65	86	1	66	1.0
Insulators	6	0.3	120	0.6	0.2	20	91	1	21	0.3
Pole Load	1,670	100.0	21,106	100.0	33.5	3,547	29,354	344	3,891	57.2
Pole Reserve Capacity			41,910		66.5	3,253			2,909	42.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 105.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	454	27.2	7,226	34.2	11.5	1,214	17,962	210	1,425	21.0
Unknown, COMMUNICATION	1,052	63.0	11,900	56.4	18.9	2,000	9,820	115	2,115	31.1
Pole	137	8.2	1,447	6.9	2.3	243	1,477	17	261	3.8
<Undefined>	28	1.7	534	2.5	0.9	90	95	1	91	1.3
Totals:	1,670	100.0	21,106	100.0	33.5	3,547	29,354	344	3,891	57.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.07	45.29	0.3980	0.53	0.145	119.3	139.0	119.3	1,228	42,471	70	33	42,574
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.07	45.29	0.3980	0.51	0.145	116.0	320.1	116.0	1,228	-41,913	68	44	-41,802
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.07	45.29	0.3980	0.53	0.145	119.3	139.0	119.3	1,228	42,471	-97	33	42,407
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.07	45.29	0.3980	0.51	0.145	116.0	320.1	116.0	1,228	-41,913	-95	44	-41,964
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.53	16.18	0.3980	0.55	0.145	172.9	49.6	172.9	2,128	47,959	9	1,136	49,103
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.11	6.18	0.3980	0.55	0.145	172.9	49.6	172.9	2,128	41,015	17	971	42,003
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.11	6.18	0.3980	0.53	0.145	119.3	139.0	119.3	1,228	34,563	11	27	34,601
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.11	6.18	0.3980	0.51	0.145	116.0	320.1	116.0	1,228	-34,109	11	36	-34,062
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.72	6.27	0.3980	0.55	0.145	172.9	49.6	172.9	2,128	38,830	17	919	39,767
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.72	6.27	0.3980	0.53	0.145	119.3	139.0	119.3	1,228	32,722	12	25	32,759
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.72	6.27	0.3980	0.51	0.145	116.0	320.1	116.0	1,228	-32,292	11	34	-32,247
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.99	6.31	0.3980	0.53	0.145	119.3	139.0	119.3	1,228	31,756	12	25	31,792
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.99	6.31	0.3980	0.51	0.145	116.0	320.1	116.0	1,228	-31,339	11	33	-31,295
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.35	6.35	0.3980	0.53	0.145	119.3	139.0	119.3	1,228	30,902	12	24	30,938
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.35	6.35	0.3980	0.51	0.145	116.0	320.1	116.0	1,228	-30,496	11	32	-30,453
										Totals:	130,626	80	3,414	134,120	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.46	6.52	1.3300	2.58	0.337	172.9	49.6	172.9	925	13,966	42	1,550	15,558
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.84	6.55	1.3300	1.60	0.337	119.3	139.0	119.3	925	19,781	29	42	19,852
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.84	6.55	1.3300	1.55	0.337	116.0	320.1	116.0	925	-19,521	28	55	-19,438
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.03	6.60	1.5000	3.05	0.900	172.9	49.6	173.0	2,000	28,090	74	1,576	29,741
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.03	6.60	1.5000	1.88	0.900	119.3	139.0	119.3	2,000	41,020	51	44	41,115
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.03	6.60	1.5000	1.81	0.900	116.0	320.1	116.0	2,000	-40,482	50	58	-40,374
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.39	6.64	1.5000	3.05	0.900	172.9	49.6	173.0	2,000	27,147	75	1,523	28,745
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.40	6.69	1.5000	1.88	0.900	119.3	139.0	119.3	2,000	37,499	52	40	37,591
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.40	6.69	1.5000	1.81	0.900	116.0	320.1	116.0	2,000	-37,007	50	53	-36,904
		COMMUNICATION													
Totals:											70,494	450	4,940	75,885	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	28.35	21.55	310.0	310.0	640.00	47.00	--	24.00	--	-1,980	1,338	-642
Totals:											-1,980	1,338	-642	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		31.26	5.13	319.5	319.5	50.00	4.50	3.50	96.00	-33	865	831
Totals:											-33	865	831

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 3 ft. Arm	KU, UTILITY	21.65	3.95	92.0	92.0	45.00	24.00	20.00	3.00	36.00	231	369	601
											Totals:	231	369	601

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	31.45	45.00	43.0	0.0	6.00	3.50	7.50	20	35	55	
Pin	Pin Insulator - 5 kV	KU, UTILITY	31.45	-45.00	236.0	0.0	6.00	3.50	7.50	-28	35	6	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	30.53	0.00	49.6	49.6	3.00	3.80	12.75	4	62	66	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.11	0.00	49.5	319.5	2.00	3.00	3.19	1	10	12	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.72	0.00	49.5	319.5	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.99	0.00	49.5	319.5	2.00	3.00	3.19	1	10	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.35	0.00	49.5	319.5	2.00	3.00	3.19	1	9	10	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.46	0.00	49.6	49.6	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.84	0.00	49.5	319.5	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.03	0.00	49.5	319.5	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.39	0.00	49.6	49.6	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.40	0.00	49.5	319.5	5.00	3.00	0.00	3	0	3	
										Totals:	16	171	186

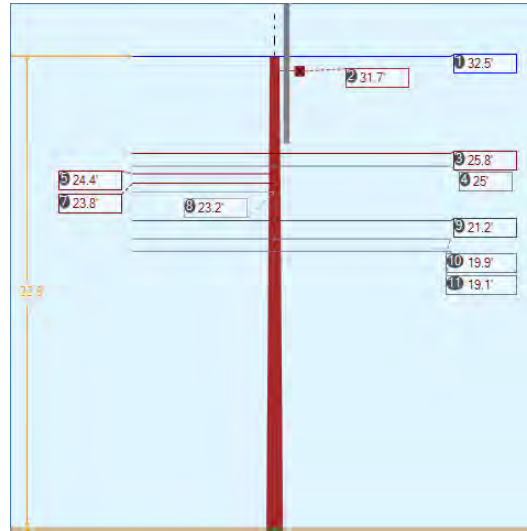
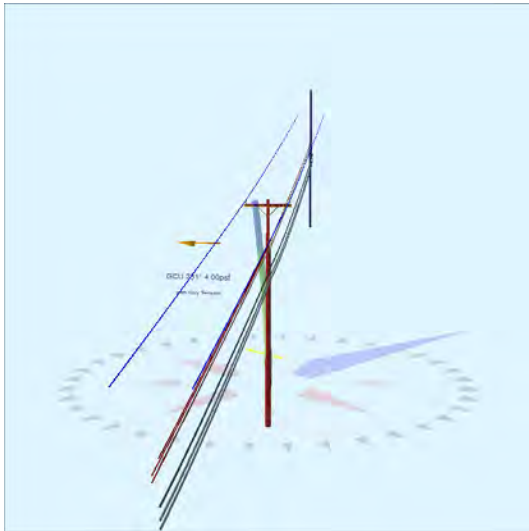
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	29.72	0.00	20.79	0.375	75.00	229.5	54.8	0.273	34.61	1.27
EHS 3/8	Down	KU, UTILITY	25.07	0.00	20.79	0.375	75.00	229.5	50.2	0.273	30.87	1.46
EHS 1/4	Down	Unknown, COMMUNICATION	20.46	0.00	19.39	0.25	75.00	228.0	46.4	0.121	26.46	1.41
EHS 1/4	Down	Unknown, COMMUNICATION	19.03	0.00	19.39	0.25	75.00	228.0	44.3	0.121	25.43	1.42

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,787	6,170	5,847	4,780	3,367	-1,905	-55,627
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,579	7,799	7,523	5,778	4,819	-2,727	-67,370
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,561	4,147	3,771	2,730	2,601	-1,416	-28,532
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,728	4,298	3,945	2,757	2,823	-1,537	-28,834
Totals:										16,045	13,609	-7,585	-180,363

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	20.79	229.5	20,000	1.00	20,000	13,958	13,359	69.8
Single Helix Anchor		18.00	19.39	228.0	20,000	1.00	20,000	8,443	7,715	42.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.46	34.12	9.45	25.08	6.69	10.43	1.60e+6	60.00	57.00	31.96	121,843	1218.02	4.15

Pole Num:	205W - 74315-32899	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	PONDEROSA PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.43	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	35.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	6,600	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	5,610	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066545 Deg	Longitude:	-84.450132 Deg	Elevation:	872.401529657808		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	46.0	230.7
Groundline	46.0	230.7
Vertical	1.8	139.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,993	230.7
Groundline	30,993	230.7
GL Allowable	68,185	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	170.8	319.1		15.6	230.7	16.5	130.0
? EHS 3/8 (Span/Head)			23.2	22.5	230.7	26.2	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 220.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	999	72.1	25,894	83.6	38.0	2,137	454	4	2,142	38.2
Comms	592	42.7	11,239	36.3	16.5	928	1,013	10	937	16.7
GuyBraces	-423	-30.5	-9,758	-31.5	-14.3	-805	40	0	-805	-14.3
Pole	169	12.2	2,784	9.0	4.1	230	1,413	14	244	4.3
Crossarms	1	0.1	41	0.1	0.1	3	95	1	4	0.1
Risers	43	3.1	685	2.2	1.0	57	46	0	57	1.0
Insulators	4	0.3	108	0.4	0.2	9	66	1	10	0.2
Pole Load	1,386	100.0	30,993	100.0	45.5	2,558	3,127	31	2,589	46.1
Pole Reserve Capacity			37,192		54.5	3,052			3,021	53.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 220.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	624	45.0	16,945	54.7	24.9	1,399	578	6	1,404	25.0
Unknown, COMMUNICATION	592	42.7	11,223	36.2	16.5	926	1,041	10	936	16.7
Pole	169	12.2	2,784	9.0	4.1	230	1,413	14	244	4.3
<Undefined>	1	0.1	41	0.1	0.1	3	95	1	4	0.1
Totals:	1,386	100.0	30,993	100.0	45.5	2,558	3,127	31	2,589	46.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.54	45.29	0.3980	0.62	0.145	116.0	140.1	116.0	1,228	8,660	144	975	9,779
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.54	45.29	0.3980	1.16	0.145	170.8	319.1	170.8	1,228	-7,764	212	1,440	-6,112
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.54	45.29	0.3980	0.62	0.145	116.0	140.1	116.0	1,228	8,660	-139	975	9,496
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.54	45.29	0.3980	1.16	0.145	170.8	319.1	170.8	1,228	-7,764	-204	1,440	-6,529
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.83	6.33	0.3980	0.62	0.145	116.0	140.1	116.0	1,228	6,870	-20	774	7,624

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.83	6.33	0.3980	1.16	0.145	170.8	319.1	170.8	1,228	-6,160	-29	1,142	-5,047
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.97	6.39	0.3980	0.62	0.145	116.0	140.1	116.0	1,228	6,642	-20	748	7,370
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.97	6.39	0.3980	1.16	0.145	170.8	319.1	170.8	1,228	-5,955	-30	1,104	-4,880
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.44	6.43	0.3980	0.62	0.145	116.0	140.1	116.0	1,228	6,500	3	732	7,235
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.77	6.48	0.3980	0.62	0.145	116.0	140.1	116.0	1,228	6,324	3	712	7,039
Totals:											16,013	-79	10,042	25,975	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.19	6.67	1.3300	1.57	0.337	116.0	140.1	116.0	925	4,246	-50	1,293	5,489
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.19	6.67	1.3300	2.54	0.337	170.8	319.1	170.9	925	-3,807	-74	1,910	-1,971
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.76	1.5000	1.83	0.900	116.0	140.1	116.0	2,000	8,640	-88	1,330	9,882
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	6.76	1.5000	3.00	0.900	170.8	319.1	170.9	2,000	-7,746	-130	1,964	-5,912
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.08	6.82	1.5000	1.83	0.900	116.0	140.1	116.0	2,000	8,264	-89	1,272	9,448
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.08	6.82	1.5000	3.00	0.900	170.8	319.1	170.9	2,000	-7,410	-132	1,879	-5,662
		COMMUNICATION													
Totals:											2,188	-564	9,650	11,274	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	31.73	5.15	139.6	139.6	50.00	4.50	3.50	96.00	6	35	41	
Totals:											6	35	41

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	24.24	5.95	360.0	360.0	24.24	290.84	4.00	4.00	290.84	-9	696	687
Totals:											-9	696	687	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 5 kV	KU, UTILITY	31.92	45.00	223.0	0.0	6.00	3.50	7.50	43	40	83
Pin	Pin Insulator - 5 kV	KU, UTILITY	31.92	-45.00	56.1	0.0	6.00	3.50	7.50	-41	40	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.83	0.00	49.6	139.6	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.97	0.00	49.6	139.6	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.44	0.00	140.1	140.1	2.00	3.00	3.19	0	11	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.77	0.00	140.1	140.1	2.00	3.00	3.19	0	11	11
Bolt	Three Bolt	Unknown, COMMUNICATION	21.19	0.00	49.6	139.6	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.94	0.00	49.6	139.6	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.08	0.00	49.6	139.6	5.00	3.00	0.00	-5	0	-5
Totals:										-18	126	108

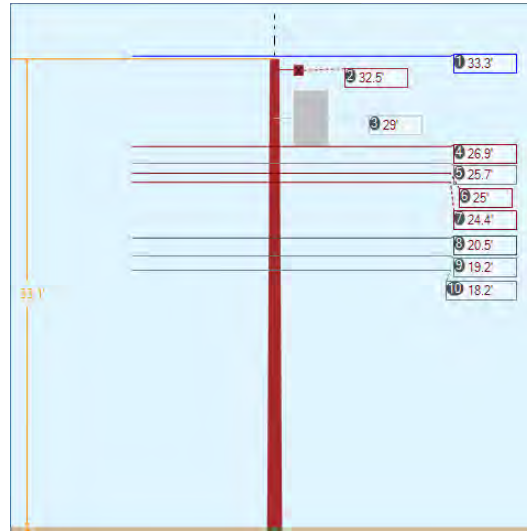
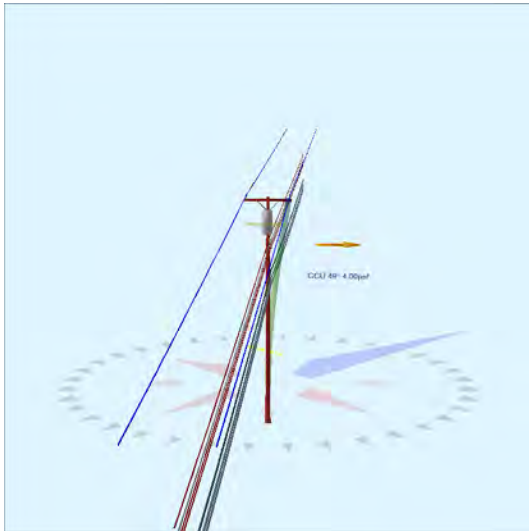
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Span/Head	KU, UTILITY	23.17	23.17	170.80	0.375	75.00	319.1	0.0	0.273	168.97	3.32

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	3,625	3,296	3,115	0	3,115	-465	-9,789
Totals:										0	3,115	-465	-9,789

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	170.80	319.1	20,000	1.00	20,000	3,296	3,115	16.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.58	33.74	10.45	8.51	6.69	11.42	1.00e+6	50.00	57.00	32.57	178,042	1737.07	55.56

Pole Num:	206W - 74480-32725	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.88	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.18	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066047 Deg	Longitude:	-84.449569 Deg	Elevation:	878.829696989587		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.0	0.0
Groundline	45.0	0.0
Vertical	22.1	22.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	29,030	52.8
Groundline	29,030	52.8
GL Allowable	65,516	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 52.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	501	40.8	14,257	49.1	21.8	1,482	503	6	1,487	21.9
Comms	500	40.7	10,093	34.8	15.4	1,049	899	10	1,059	15.6
PowerEquipments	55	4.5	1,693	5.8	2.6	176	1,216	14	190	2.8
Pole	166	13.5	2,796	9.6	4.3	291	1,557	18	308	4.5
Crossarms	1	0.1	38	0.1	0.1	4	95	1	5	0.1
Insulators	4	0.4	154	0.5	0.2	16	66	1	17	0.2
Pole Load	1,228	100.0	29,030	100.0	44.3	3,017	4,336	50	3,066	45.1
Pole Reserve Capacity			36,486		55.7	3,783			3,734	54.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 52.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	561	45.6	16,088	55.4	24.6	1,672	1,757	20	1,692	24.9
Unknown, COMMUNICATION	500	40.7	10,109	34.8	15.4	1,051	927	11	1,061	15.6
Pole	166	13.5	2,796	9.6	4.3	291	1,557	18	308	4.5
<Undefined>	1	0.1	38	0.1	0.1	4	95	1	5	0.1
Totals:	1,228	100.0	29,030	100.0	44.3	3,017	4,336	50	3,066	45.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.32	45.29	0.3980	0.80	0.145	135.2	138.2	135.2	1,228	3,280	165	1,177	4,621
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.32	45.29	0.3980	0.65	0.145	119.3	319.0	119.3	1,228	-2,710	146	1,040	-1,524
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.32	45.29	0.3980	0.80	0.145	135.2	138.2	135.2	1,228	3,280	-168	1,177	4,288
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.32	45.29	0.3980	0.65	0.145	119.3	319.0	119.3	1,228	-2,710	-148	1,040	-1,818
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.92	6.20	0.3980	0.80	0.145	135.2	138.2	135.2	1,228	2,648	23	950	3,621
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.92	6.20	0.3980	0.65	0.145	119.3	319.0	119.3	1,228	-2,188	20	839	-1,328

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.74	6.27	0.3980	0.80	0.145	135.2	138.2	135.2	1,228	2,532	23	908	3,464
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.74	6.27	0.3980	0.65	0.145	119.3	319.0	119.3	1,228	-2,092	20	803	-1,269
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.03	6.32	0.3980	0.80	0.145	135.2	138.2	135.2	1,228	2,462	23	883	3,369
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.03	6.32	0.3980	0.65	0.145	119.3	319.0	119.3	1,228	-2,034	21	780	-1,233
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.40	6.35	0.3980	0.80	0.145	135.2	138.2	135.2	1,228	2,400	24	861	3,285
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.40	6.35	0.3980	0.65	0.145	119.3	319.0	119.3	1,228	-1,983	21	761	-1,201
Totals:											2,886	170	11,218	14,274	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.46	6.58	1.3300	1.89	0.337	135.2	138.2	135.2	925	1,516	58	1,471	3,045
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.46	6.58	1.3300	1.62	0.337	119.3	319.0	119.3	925	-1,252	51	1,300	99
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.19	6.66	1.5000	2.21	0.900	135.2	138.2	135.2	2,000	3,075	103	1,508	4,686
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.19	6.66	1.5000	1.89	0.900	119.3	319.0	119.3	2,000	-2,540	91	1,333	-1,117
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.18	6.72	1.5000	2.21	0.900	135.2	138.2	135.2	2,000	2,912	104	1,429	4,445
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.18	6.72	1.5000	1.89	0.900	119.3	319.0	119.3	2,000	-2,406	91	1,262	-1,052
		COMMUNICATION													
Totals:											1,304	498	8,303	10,105	

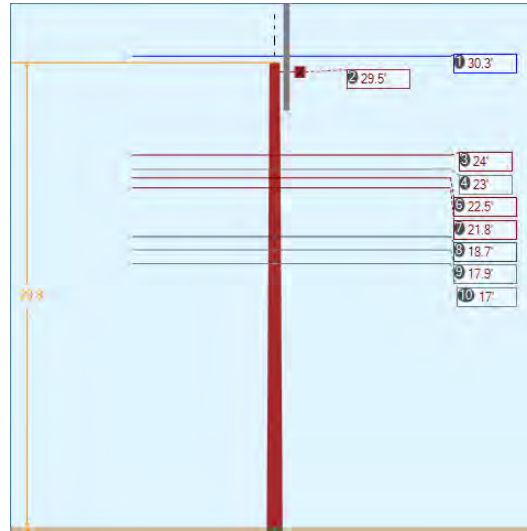
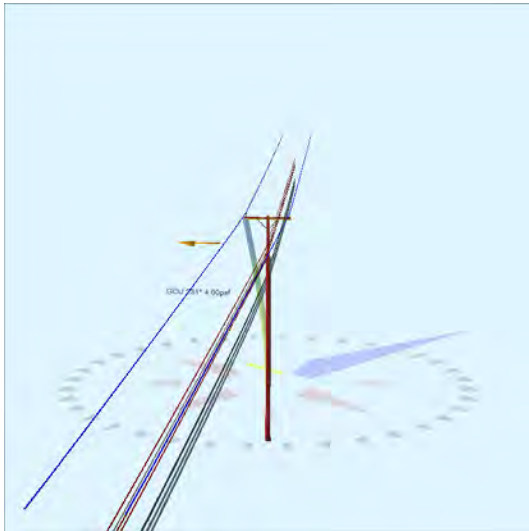
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	29.03	21.58	140.0	140.0	640.00	47.00	--	24.00	--	107	1,589	1,695
Totals:											107	1,589	1,695	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		32.51	5.13	318.6	318.6	50.00	4.50	3.50	96.00	-3	41	38
Totals:											-3	41	38

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.70	45.00	42.1	0.0	6.00	3.50	7.50	42	42	84
Pin	Pin Insulator - 5 kV	KU, UTILITY	32.70	-45.00	235.1	0.0	6.00	3.50	7.50	-43	42	-1
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.92	0.00	48.6	318.6	2.00	3.00	3.19	2	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.74	0.00	48.6	318.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.03	0.00	48.6	318.6	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.40	0.00	48.6	318.6	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	20.46	0.00	48.6	318.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	19.19	0.00	48.6	318.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	18.18	0.00	48.6	318.6	5.00	3.00	0.00	5	0	5
Totals:										23	131	154

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.59	33.76	9.67	15.88	6.69	10.57	1.60e+6	60.00	57.00	33.12	19,575	196.18	4.52

Pole Num:	207W - 74569-32630	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	10.11	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.99	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.065771 Deg	Longitude:	-84.449273 Deg	Elevation:	860.845170763258		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	59.4	0.0
Groundline	59.4	0.0
Vertical	11.0	18.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,573	229.3
Groundline	34,573	229.3
GL Allowable	58,743	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	742	46.1	18,967	54.9	32.3	2,198	545	7	2,205	32.4
Comms	675	41.9	12,515	36.2	21.3	1,450	974	12	1,462	21.5
Pole	147	9.1	2,289	6.6	3.9	265	1,341	16	282	4.1
Crossarms	1	0.1	41	0.1	0.1	5	95	1	6	0.1
Risers	41	2.6	618	1.8	1.1	72	43	1	72	1.1
Insulators	4	0.3	142	0.4	0.2	17	66	1	17	0.3
Pole Load	1,611	100.0	34,573	100.0	58.9	4,007	3,065	38	4,044	59.5
Pole Reserve Capacity			24,170		41.1	2,793			2,756	40.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	787	48.9	19,712	57.0	33.6	2,285	626	8	2,292	33.7
Unknown, COMMUNICATION	675	41.9	12,530	36.2	21.3	1,452	1,003	12	1,465	21.5
Pole	147	9.1	2,289	6.6	3.9	265	1,341	16	282	4.1
<Undefined>	1	0.1	41	0.1	0.1	5	95	1	6	0.1
Totals:	1,611	100.0	34,573	100.0	58.9	4,007	3,065	38	4,044	59.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.33	45.29	0.3980	0.85	0.145	140.7	140.6	140.7	1,228	817	175	1,118	2,110
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.33	45.29	0.3980	0.79	0.145	135.2	318.2	135.2	1,228	744	168	1,073	1,985
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.33	45.29	0.3980	0.85	0.145	140.7	140.6	140.7	1,228	817	-172	1,118	1,763
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.33	45.29	0.3980	0.79	0.145	135.2	318.2	135.2	1,228	744	-165	1,073	1,652
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.95	6.19	0.3980	0.85	0.145	140.7	140.6	140.7	1,228	645	24	882	1,551
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.95	6.19	0.3980	0.79	0.145	135.2	318.2	135.2	1,228	587	23	847	1,457

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.03	6.24	0.3980	0.85	0.145	140.7	140.6	140.7	1,228	620	24	848	1,492
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.03	6.24	0.3980	0.79	0.145	135.2	318.2	135.2	1,228	565	23	815	1,402
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.49	6.28	0.3980	0.85	0.145	140.7	140.6	140.7	1,228	606	24	829	1,458
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	22.49	6.28	0.3980	0.79	0.145	135.2	318.2	135.2	1,228	551	23	796	1,370
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.84	6.31	0.3980	0.85	0.145	140.7	140.6	140.7	1,228	588	24	805	1,417
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	21.84	6.31	0.3980	0.79	0.145	135.2	318.2	135.2	1,228	535	23	773	1,331
Totals:											7,818	194	10,977	18,989	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.70	6.50	1.3300	1.98	0.337	140.7	140.6	140.7	925	379	60	1,404	1,843
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.70	6.50	1.3300	1.89	0.337	135.2	318.2	135.2	925	345	57	1,348	1,751
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.86	6.55	1.5000	2.33	0.900	140.7	140.6	140.7	2,000	783	105	1,466	2,354
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.86	6.55	1.5000	2.21	0.900	135.2	318.2	135.2	2,000	713	101	1,407	2,221
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.98	6.60	1.5000	2.33	0.900	140.7	140.6	140.7	2,000	744	106	1,393	2,243
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	16.98	6.60	1.5000	2.21	0.900	135.2	318.2	135.2	2,000	678	102	1,337	2,117
		COMMUNICATION													
Totals:											3,643	531	8,355	12,530	

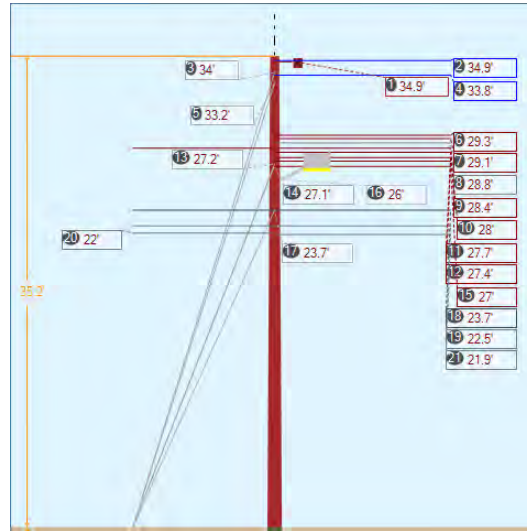
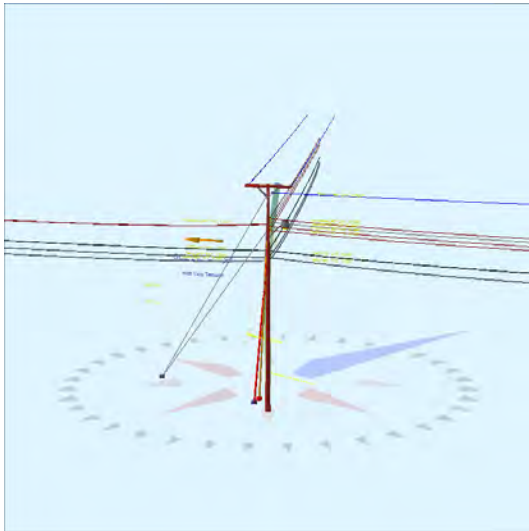
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	29.52	5.11	142.9	142.9	50.00	4.50	3.50	96.00	3	38	41	
Totals:											3	38	41

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser	22.80	5.45	360.0	360.0	22.80	273.56	4.00	4.00	273.56	-6	625	619
Totals:											-6	625	619

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	29.70	45.00	226.4	0.0	6.00	3.50	7.50	43	38	81
Pin	Pin Insulator - 5 kV	KU, UTILITY	29.70	-45.00	59.4	0.0	6.00	3.50	7.50	-42	38	-4
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.95	0.00	232.9	142.9	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.03	0.00	232.9	142.9	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.49	0.00	232.9	142.9	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.84	0.00	232.9	142.9	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	18.70	0.00	232.9	142.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.86	0.00	232.9	142.9	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	16.98	0.00	232.9	142.9	5.00	3.00	0.00	5	0	5
Totals:										24	119	143

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.21	33.14	9.48	12.15	6.69	10.19	1.60e+6	60.00	57.00	29.90	27,828	278.63	9.09

Pole Num:	208W - 74675-32510	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Inadequate
Aux Data 2	Unset	Setting Depth (ft):	4.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.96	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.065463 Deg	Longitude:	-84.449004 Deg	Elevation:	866.309347738934		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	58.6	0.0
Groundline	58.6	0.0
Vertical	70.7	29.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,875	300.3
Groundline	24,875	300.3
GL Allowable	70,265	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	8.5	145.0		156.8	244.8	166.6	335.0
? EHS 7/16 (Down)			34.0	72.0	244.8	83.6	340.0
? EHS 7/16 (Down)			27.2	95.6	244.8	112.3	330.0
? Single Helix Anchor	19.7	241.3		19.3	244.8	27.5	45.0
? EHS 3/8 (Down)			33.2	27.8	244.8	37.7	40.0
? EHS 3/8 (Down)			27.1	0.0	244.8	5.9	50.0
? Single Helix Anchor	11.0	147.0		40.0	244.8	43.2	330.0
? EHS 1/4 (Down)			23.7	133.6	244.8	158.6	330.0
System Capacity Summary:				Inadequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 300.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,825	260.5	81,601	328.0	116.1	19,724	718	8	19,732	290.2
Comms	5,128	195.8	46,537	187.1	66.2	11,249	1,371	15	11,264	165.6
GuyBraces	-9,461	-361.2	-104,367	-419.6	-148.5	-25,227	61,340	668	-24,559	-361.2
Pole	102	3.9	728	2.9	1.0	176	1,708	19	195	2.9
Crossarms	9	0.3	120	0.5	0.2	29	190	2	31	0.5
Streetlights	11	0.4	165	0.7	0.2	40	86	1	41	0.6
Insulators	6	0.2	92	0.4	0.1	22	85	1	23	0.3
Pole Load	2,620	100.0	24,875	100.0	35.4	6,013	65,497	714	6,726	98.9
Pole Reserve Capacity			45,390		64.6	787			74	1.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 300.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	8	0.3	1,871	7.5	2.7	452	51,157	557	1,010	14.8
<Undefined>	307	11.7	3,528	14.2	5.0	853	279	3	856	12.6
Unknown, COMMUNICATION	2,202	84.1	18,748	75.4	26.7	4,532	12,354	135	4,666	68.6
Pole	102	3.9	728	2.9	1.0	176	1,708	19	195	2.9
Totals:	2,620	100.0	24,875	100.0	35.4	6,013	65,497	714	6,726	98.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.92	48.42	0.3980	0.84	0.145	140.7	320.6	140.7	1,228	52,264	-1	434	52,696
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.92	48.42	0.3980	0.84	0.145	140.7	320.6	140.7	1,228	52,264	10	434	52,707
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.82	16.18	0.3980	0.62	0.145	213.1	60.2	213.1	2,128	-46,702	-10	130	-46,582
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.33	6.19	0.3980	2.93	0.145	213.1	60.2	213.1	450	-8,564	-18	113	-8,469
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.07	6.20	0.3980	0.84	0.145	140.7	320.6	140.7	1,228	43,515	21	361	43,897
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.75	6.22	0.3980	2.93	0.145	213.1	60.2	213.1	450	-8,395	-18	111	-8,303
Secondary	TRIPLEX 1/0		28.35	6.25	1.0300	1.27	0.399	117.4	240.6	117.5	450	8,380	41	93	8,514
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.35	6.25	0.3980	0.84	0.145	140.7	320.6	140.7	1,228	42,441	21	352	42,815
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.04	6.26	0.3980	2.93	0.145	213.1	60.2	213.1	450	-8,188	-18	108	-8,099
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.66	6.29	0.3980	0.84	0.145	140.7	320.6	140.7	1,228	41,408	22	344	41,773
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.38	6.30	0.3980	2.93	0.145	213.1	60.2	213.1	450	-7,996	-18	105	-7,909
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.00	6.32	0.3980	0.84	0.145	140.7	320.6	140.7	1,228	40,414	22	335	40,771
										Totals:	200,841	52	2,920	203,814	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	23.73	6.52	1.3300	3.36	0.337	213.1	60.2	213.2	925	-14,242	85	186	-13,970
CATV	CATV 1.0	Unknown, COMMUNICATION	23.73	6.52	1.3300	1.57	0.337	117.4	240.6	117.4	925	14,414	47	93	14,554
CATV	CATV 1.0	Unknown, COMMUNICATION	23.73	6.52	1.3300	1.98	0.337	140.7	320.6	140.7	925	26,752	56	601	27,409
Telco	TELE 1.5	Unknown, COMMUNICATION	22.55	6.59	1.5000	4.04	0.900	213.1	60.2	213.2	2,000	-29,259	150	193	-28,915
Telco	TELE 1.5	Unknown, COMMUNICATION	22.55	6.59	1.5000	1.84	0.900	117.4	240.6	117.4	2,000	29,613	83	97	29,793
Telco	TELE 1.5	Unknown, COMMUNICATION	22.55	6.59	1.5000	2.77	0.900	140.7	320.6	140.8	1,250	34,350	99	624	35,073
Telco	TELE 1.5	Unknown, COMMUNICATION	22.02	6.62	1.5000	2.15	0.900	117.4	240.6	117.5	1,250	18,075	48	95	18,217
Telco	TELE 1.5	Unknown, COMMUNICATION	21.90	6.62	1.5000	2.77	0.900	140.7	320.6	140.8	1,250	33,374	95	606	34,075
Totals:											113,077	664	2,494	116,235	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		34.92	5.11	327.6	327.6	50.00	4.50	3.50	96.00	0	299	299	
Totals:											0	299	299

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	26.01	3.88	360.0	360.0	45.00	24.00	20.00	3.00	36.00	119	292	412
Totals:											119	292	412

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend Deadend 12.75"	KU, UTILITY	34.92	45.00	51.1	0.0	3.00	3.80	12.75	-2	47	44
Deadend Deadend 12.75"	KU, UTILITY	34.92	-45.00	244.1	0.0	3.00	3.80	12.75	17	47	64
Deadend Deadend Insulator - 15 kV	KU, UTILITY	33.82	0.00	60.2	60.2	3.00	3.80	12.75	-4	45	41
Spool Spool Insulator - 25 kV	KU, UTILITY	29.33	0.00	60.2	60.2	2.00	3.00	3.19	-1	8	7
Spool Spool Insulator - 25 kV	KU, UTILITY	29.07	0.00	327.6	327.6	2.00	3.00	3.19	2	8	9

Spool	Spool Insulator - 25 kV	KU, UTILITY	28.75	0.00	60.2	60.2	2.00	3.00	3.19	-1	8	7
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.35	0.00	327.6	327.6	2.00	3.00	3.19	2	7	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.04	0.00	60.2	60.2	2.00	3.00	3.19	-1	7	6
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.66	0.00	327.6	327.6	2.00	3.00	3.19	2	7	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.38	0.00	60.2	60.2	2.00	3.00	3.19	-1	7	6
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.00	0.00	327.6	327.6	2.00	3.00	3.19	2	7	9
Bolt	Three Bolt	Unknown, COMMUNICATION	23.73	0.00	320.6	320.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.55	0.00	320.6	320.6	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	22.02	0.00	242.6	332.6	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	21.90	0.00	327.6	327.6	5.00	3.00	0.00	5	0	5
Totals:										32	198	229

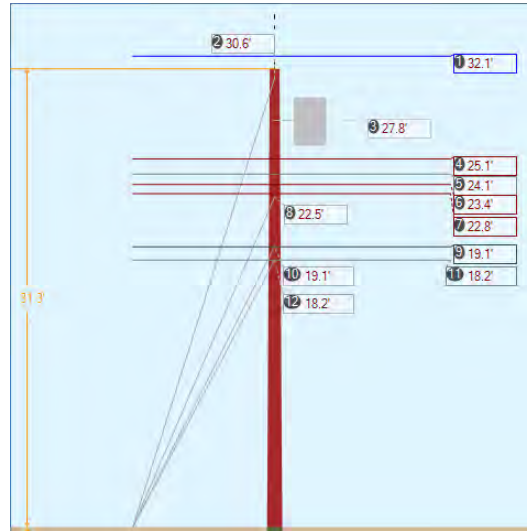
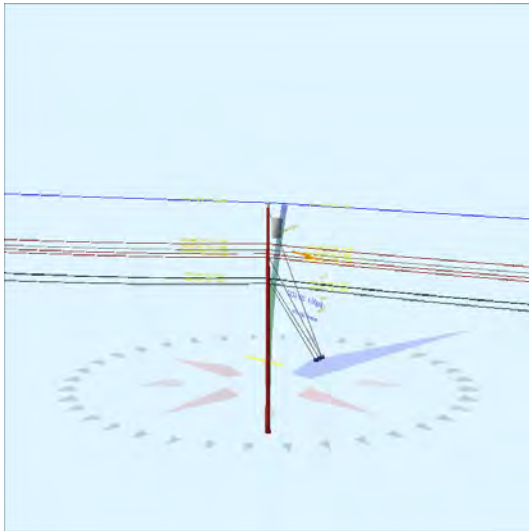
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 7/16	Down	KU, UTILITY	34.04	0.00	8.49	0.438	75.00	145.0	75.7	0.399	33.52	2.09
EHS 7/16	Down	KU, UTILITY	27.19	0.00	8.49	0.438	75.00	145.0	72.4	0.399	26.89	2.23
EHS 3/8	Down	KU, UTILITY	33.22	0.00	19.69	0.375	75.00	241.3	59.1	0.273	36.97	0.90
EHS 3/8	Down	KU, UTILITY	27.07	0.00	19.69	0.375	75.00	241.3	53.8	0.273	31.79	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	23.73	0.00	11.00	0.25	75.00	147.0	64.9	0.121	24.51	2.78

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	15,650	14,227	13,478	13,062	3,322	-3,017	-97,544
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	21,014	19,104	17,887	17,050	5,408	-4,911	-127,077
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,222	4,748	3,858	3,312	1,979	1,020	33,342
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	823	748	0	0	0	0	27
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	9,495	8,631	7,996	7,241	3,392	-3,029	-69,426
Totals:										40,666	14,101	-9,937	-260,677

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	8.49	145.0	20,000	1.00	20,000	33,317	31,352	166.6
Single Helix Anchor		18.00	19.69	241.3	20,000	1.00	20,000	5,490	3,854	27.4
Single Helix Anchor		18.00	11.00	147.0	20,000	1.00	20,000	8,631	7,996	43.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.13	34.73	9.63	40.81	6.69	10.81	1.60e+6	60.00	57.00	35.25	92,606	926.41	1.41

Pole Num:	209W - 74837-32586	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	32.49	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.065759 Deg	Longitude:	-84.448373 Deg	Elevation:	865.084193093658		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	20.0	0.0
Groundline	20.0	0.0
Vertical	4.4	22.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	11,621	77.3
Groundline	11,621	77.3
GL Allowable	61,535	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.5	343.0		8.4	104.9	9.9	155.0
? EHS 3/8 (Down)			30.6	6.2	104.9	7.8	160.0
? EHS 3/8 (Down)			22.5	6.0	104.9	8.0	150.0
? Single Helix Anchor	20.5	343.0		1.8	104.9	2.2	150.0
? EHS 1/4 (Down)			19.1	6.0	104.9	8.1	150.0
? Single Helix Anchor	19.0	343.0		1.8	104.9	2.2	150.0
? EHS 1/4 (Down)			18.2	5.9	104.9	8.1	150.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 77.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	220	46.0	6,024	51.8	9.8	672	573	7	679	10.0
Comms	172	36.0	3,264	28.1	5.3	364	751	9	373	5.5
GuyBraces	-94	-19.6	-2,211	-19.0	-3.6	-247	2,740	33	-214	-3.1
PowerEquipments	37	7.7	2,184	18.8	3.6	244	694	8	252	3.7
Pole	138	28.7	2,190	18.8	3.6	244	1,430	17	261	3.8
Insulators	6	1.2	171	1.5	0.3	19	59	1	20	0.3
Pole Load	479	100.0	11,621	100.0	18.9	1,297	6,246	74	1,371	20.2
Pole Reserve Capacity			49,914		81.1	5,503			5,429	79.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 77.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	198	41.3	6,696	57.6	10.9	747	3,295	39	787	11.6
Unknown, COMMUNICATION	144	30.0	2,735	23.5	4.4	305	1,521	18	323	4.8
Pole	138	28.7	2,190	18.8	3.6	244	1,430	17	261	3.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	479	100.0	11,621	100.0	18.9	1,297	6,246	74	1,371	20.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	32.13	0.00	0.3980	0.27	0.145	134.9	67.2	134.9	2,128	87,543	0	122	87,665
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	32.13	0.00	0.3980	0.68	0.145	213.1	240.3	213.1	2,128	-85,034	0	369	-84,665
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.11	6.20	0.3980	1.56	0.145	134.9	67.2	134.9	450	14,459	5	95	14,560
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	25.11	6.20	0.3980	2.96	0.145	213.1	240.3	213.1	450	-14,045	9	288	-13,748
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.08	6.26	0.3980	1.56	0.145	134.9	67.2	134.9	450	13,867	5	91	13,963
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.08	6.26	0.3980	2.96	0.145	213.1	240.3	213.1	450	-13,469	9	276	-13,184
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.36	6.30	0.3980	1.56	0.145	134.9	67.2	134.9	450	13,455	5	89	13,549
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	23.36	6.30	0.3980	2.96	0.145	213.1	240.3	213.1	450	-13,070	9	268	-12,793
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.76	6.34	0.3980	1.56	0.145	134.9	67.2	134.9	450	13,106	6	86	13,198
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.76	6.34	0.3980	2.96	0.145	213.1	240.3	213.1	450	-12,730	9	261	-12,461
Totals:										4,082	56	1,945	6,084	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	19.12	6.55	1.3300	1.86	0.337	134.9	67.2	134.9	925	22,639	14	148	22,800
CATV	CATV 1.0 Unknown, COMMUNICATION	19.12	6.55	1.3300	3.38	0.337	213.1	240.3	213.2	925	-21,990	22	447	-21,521

Telco	TELE 1.5	Unknown, COMMUNICATION	18.22	6.60	1.5000	2.19	0.900	134.9	67.2	134.9	2,000	46,641	24	154	46,819
Telco	TELE 1.5	Unknown, COMMUNICATION	18.22	6.60	1.5000	4.05	0.900	213.1	240.3	213.2	2,000	-45,304	38	465	-44,801
Totals:												1,986	97	1,214	3,297

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA KU, UTILITY	27.83	20.54	70.0	70.0	365.00	39.00	--	22.00	--	1,178	1,028	2,206	
Totals:												1,178	1,028	2,206

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV KU, UTILITY	31.25	0.00	0.0	0.0	13.00	9.00	10.50	0	129	129	
Spool	Spool Insulator - 25 kV KU, UTILITY	25.11	0.00	153.7	63.7	2.00	3.00	3.19	0	10	11	
Spool	Spool Insulator - 25 kV KU, UTILITY	24.08	0.00	153.7	63.7	2.00	3.00	3.19	0	10	10	
Spool	Spool Insulator - 25 kV KU, UTILITY	23.36	0.00	153.7	63.7	2.00	3.00	3.19	0	10	10	
Spool	Spool Insulator - 25 kV KU, UTILITY	22.76	0.00	153.7	63.7	2.00	3.00	3.19	0	9	10	
Bolt	Three Bolt Unknown, COMMUNICATION	19.12	0.00	153.7	63.7	5.00	3.00	0.00	1	0	1	
Bolt	Three Bolt Unknown, COMMUNICATION	18.22	0.00	153.7	63.7	5.00	3.00	0.00	1	0	1	
Totals:										4	168	173

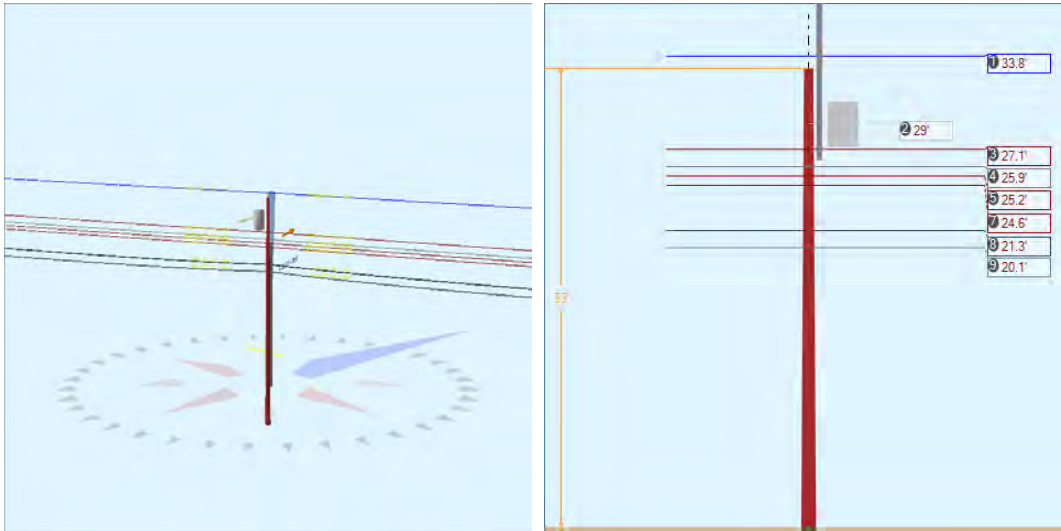
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down KU, UTILITY	30.62	0.00	21.49	0.375	75.00	343.0	54.8	0.273	35.75	0.19
EHS 3/8	Down KU, UTILITY	22.52	0.00	21.49	0.375	75.00	343.0	46.2	0.273	29.41	0.15
EHS 1/4	Down Unknown, COMMUNICATION	19.12	0.00	20.54	0.25	75.00	343.0	42.8	0.121	26.32	0.13
EHS 1/4	Down Unknown, COMMUNICATION	18.22	0.00	18.97	0.25	75.00	343.0	43.7	0.121	24.56	0.12

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,078	980	860	702	496	-37	-883
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,110	1,009	830	599	575	-43	-814
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	484	440	357	243	262	-20	-276
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	484	440	355	245	257	-19	-261
Totals:										1,790	1,589	-119	-2,233

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.49	343.0	20,000	1.00	20,000	1,983	1,685	9.9
Single Helix Anchor		18.00	20.54	343.0	20,000	1.00	20,000	440	357	2.2
Single Helix Anchor		18.00	18.97	343.0	20,000	1.00	20,000	440	355	2.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.65	33.84	9.44	11.25	6.69	10.35	1.60e+6	60.00	57.00	31.25	141,952	1419.53	22.73

Pole Num:	210W - 74952-33643	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.05	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.12	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.065899 Deg	Longitude:	-84.447939 Deg	Elevation:	870.706223412129		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.5	0.0
Groundline	35.5	0.0
Vertical	15.1	21.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,778	333.1
Groundline	22,778	333.1
GL Allowable	65,159	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 333.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	400	41.2	10,821	47.5	16.6	1,123	436	5	1,128	16.6
Comms	309	31.8	6,741	29.6	10.4	700	571	7	706	10.4
PowerEquipments	42	4.3	1,361	6.0	2.1	141	694	8	149	2.2
Pole	166	17.0	2,815	12.4	4.3	292	1,545	18	310	4.6
Risers	48	5.0	835	3.7	1.3	87	95	1	88	1.3
Insulators	7	0.7	205	0.9	0.3	21	59	1	22	0.3
Pole Load	972	100.0	22,778	100.0	35.0	2,364	3,400	39	2,403	35.3
Pole Reserve Capacity			42,381		65.0	4,436			4,397	64.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 333.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	497	51.1	13,212	58.0	20.3	1,371	1,264	14	1,385	20.4
Unknown, COMMUNICATION	309	31.8	6,751	29.6	10.4	701	590	7	707	10.4
Pole	166	17.0	2,815	12.4	4.3	292	1,545	18	310	4.6
Totals:	972	100.0	22,778	100.0	35.0	2,364	3,400	39	2,403	35.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.83	0.00	0.3980	0.31	0.145	129.8	66.9	129.8	2,128	-4,765	0	1,145	-3,620
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.83	0.00	0.3980	0.34	0.145	134.9	247.2	134.9	2,128	5,142	0	1,189	6,331
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.13	6.18	0.3980	0.31	0.145	129.8	66.9	129.8	2,128	-3,820	-22	918	-2,924
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.13	6.18	0.3980	0.34	0.145	134.9	247.2	134.9	2,128	4,121	-23	953	5,051
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.89	6.26	0.3980	0.31	0.145	129.8	66.9	129.8	2,128	-3,645	-22	876	-2,791
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.89	6.26	0.3980	0.34	0.145	134.9	247.2	134.9	2,128	3,933	-23	909	4,819
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.23	6.29	0.3980	0.31	0.145	129.8	66.9	129.8	2,128	-3,552	-22	853	-2,721

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.23	6.29	0.3980	0.34	0.145	134.9	247.2	134.9	2,128	3,832	-23	886	4,695
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.55	6.33	0.3980	0.31	0.145	129.8	66.9	129.8	2,128	-3,457	-23	831	-2,649
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.55	6.33	0.3980	0.34	0.145	134.9	247.2	134.9	2,128	3,730	-23	862	4,569
Totals:											1,519	-182	9,423	10,760	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.30	6.52	1.3300	1.80	0.337	129.8	66.9	129.8	925	-1,304	55	1,469	220
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.30	6.52	1.3300	1.88	0.337	134.9	247.2	134.9	925	1,407	58	1,525	2,989
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.08	6.60	1.5000	2.10	0.900	129.8	66.9	129.8	2,000	-2,657	98	1,513	-1,047
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.08	6.60	1.5000	2.20	0.900	134.9	247.2	134.9	2,000	2,867	101	1,571	4,540
		COMMUNICATION													
Totals:											313	312	6,078	6,703	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	29.02	20.57	250.0	250.0	365.00	39.00	--	22.00	--	143	1,211	1,353
Totals:											143	1,211	1,353	

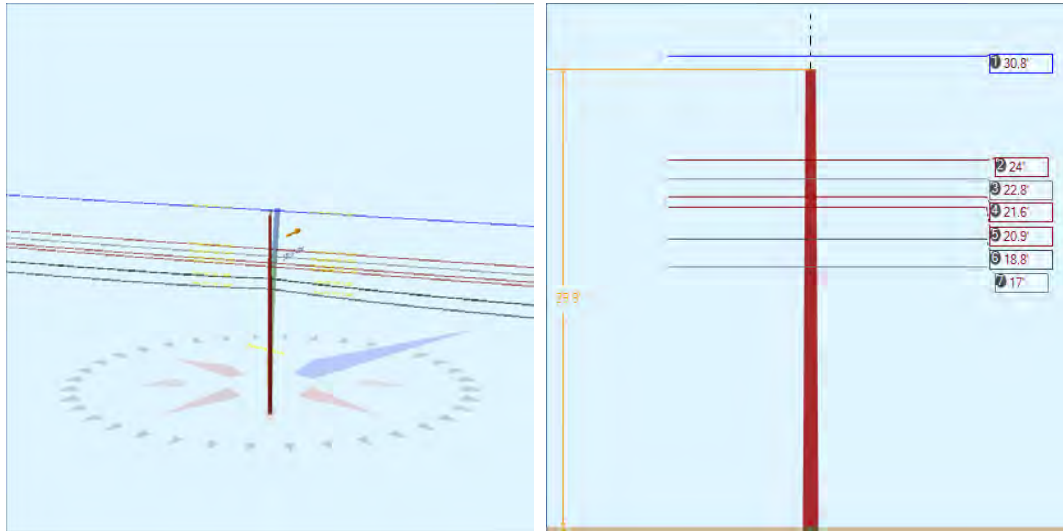
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 350.0°	Riser	KU, UTILITY	25.01	5.45	350.0	350.0	25.01	300.16	4.00	4.00	300.16	22	290	313
Riser 30.0°	Riser	KU, UTILITY	25.01	5.45	30.0	30.0	25.01	300.16	2.50	2.50	300.16	6	512	518
Totals:											28	802	831	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	32.95	0.00	0.0	0.0	13.00	9.00	10.50	0	153	153
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.13	0.00	157.0	247.0	2.00	3.00	3.19	-2	13	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.89	0.00	157.0	247.0	2.00	3.00	3.19	-2	12	10

Spool	Spool Insulator - 25 kV	KU, UTILITY	25.23	0.00	157.0	247.0	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.55	0.00	157.0	247.0	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	21.30	0.00	337.0	247.0	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.08	0.00	337.0	247.0	5.00	3.00	0.00	5	0	5
Totals:										2	201	204

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	21.23	33.54	9.71	13.77	6.69	10.55	1.60e+6	60.00	57.00	32.95	22,529	225.16	6.62

Pole Num:	211W - 75079-32705	Pole Length / Class:	35 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.08	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	31.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066054 Deg	Longitude:	-84.447536 Deg	Elevation:	861.212200812251		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	52.8	0.0
Groundline	52.8	0.0
Vertical	8.3	17.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,310	335.7
Groundline	30,310	335.7
GL Allowable	57,885	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 335.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	795	56.7	19,359	63.9	33.4	2,268	509	6	2,274	33.4
Comms	453	32.3	8,453	27.9	14.6	990	668	8	999	14.7
Pole	147	10.5	2,298	7.6	4.0	269	1,334	17	286	4.2
Insulators	7	0.5	200	0.7	0.4	23	59	1	24	0.4
Pole Load	1,401	100.0	30,310	100.0	52.4	3,551	2,570	32	3,583	52.7
Pole Reserve Capacity			27,575		47.6	3,249			3,217	47.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 335.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	801	57.2	19,548	64.5	33.8	2,290	549	7	2,297	33.8
Unknown, COMMUNICATION	453	32.3	8,463	27.9	14.6	992	687	9	1,000	14.7
Pole	147	10.5	2,298	7.6	4.0	269	1,334	17	286	4.2
Totals:	1,401	100.0	30,310	100.0	52.4	3,551	2,570	32	3,583	52.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	30.80	0.00	0.3980	0.59	0.145	179.5	64.8	179.5	2,128	1,078	0	1,448	2,526
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	30.80	0.00	0.3980	0.32	0.145	129.8	246.9	129.8	2,128	1,325	0	1,047	2,372
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.00	6.18	0.3980	0.59	0.145	179.5	64.8	179.5	2,128	840	30	1,128	1,998
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	24.00	6.18	0.3980	0.32	0.145	129.8	246.9	129.8	2,128	1,032	22	816	1,870
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.76	6.26	0.3980	0.59	0.145	179.5	64.8	179.5	2,128	796	31	1,070	1,897
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	22.76	6.26	0.3980	0.32	0.145	129.8	246.9	129.8	2,128	979	22	773	1,774
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	21.59	6.32	0.3980	0.59	0.145	179.5	64.8	179.5	2,128	755	31	1,015	1,801
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	21.59	6.32	0.3980	0.32	0.145	129.8	246.9	129.8	2,128	928	23	734	1,685
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	20.93	6.36	0.3980	0.59	0.145	179.5	64.8	179.5	2,128	732	31	984	1,747
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	20.93	6.36	0.3980	0.32	0.145	129.8	246.9	129.8	2,128	900	23	711	1,634
										Totals:	9,366	213	9,726	19,305

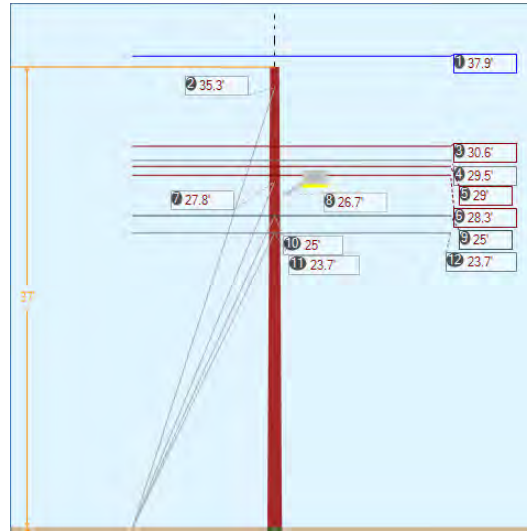
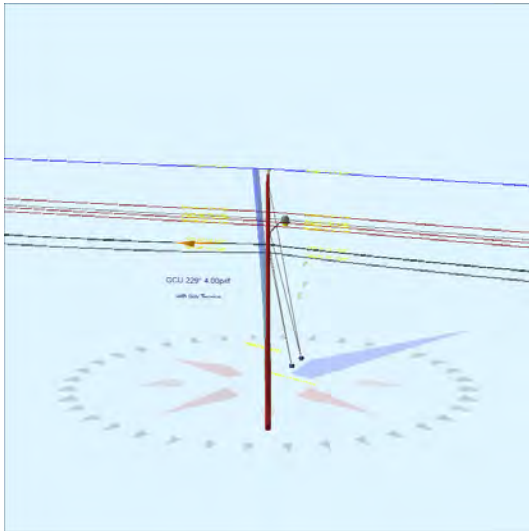
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	18.83	6.48	1.3300	2.70	0.337	179.5	64.8	179.5	925	286	76	1,804	2,167
CATV	CATV 1.0 Unknown, COMMUNICATION	18.83	6.48	1.3300	1.80	0.337	129.8	246.9	129.8	925	352	55	1,304	1,711

Telco	TELE 1.5	Unknown, COMMUNICATION	17.03	6.59	1.5000	3.20	0.900	179.5	64.8	179.6	2,000	560	135	1,782	2,477
Telco	TELE 1.5	Unknown, COMMUNICATION	17.03	6.59	1.5000	2.10	0.900	129.8	246.9	129.8	2,000	688	98	1,289	2,074
Totals:											1,886	364	6,179	8,430	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	29.92	0.00	0.0	0.0	13.00	9.00	10.50	0	139	139
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.00	0.00	335.8	245.8	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	22.76	0.00	335.8	245.8	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	21.59	0.00	335.8	245.8	2.00	3.00	3.19	2	10	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	20.93	0.00	335.8	245.8	2.00	3.00	3.19	2	10	12
Bolt	Three Bolt	Unknown, COMMUNICATION	18.83	0.00	335.8	245.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.03	0.00	335.8	245.8	5.00	3.00	0.00	5	0	5
Totals:										18	181	199

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.30	32.95	9.48	10.96	6.69	10.14	1.60e+6	60.00	57.00	29.92	30,802	309.61	12.05

Pole Num:	212W - 75232-32777	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.01	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.75	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.066277 Deg	Longitude:	-84.446951 Deg	Elevation:	851.668114428166		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	12.6	0.0
Groundline	12.6	0.0
Vertical	5.4	26.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	10,189	234.6
Groundline	10,189	234.6
GL Allowable	89,062	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.2	334.0		14.7	229.3	18.1	160.0
? EHS 3/8 (Down)			35.4	9.9	229.3	13.0	160.0
? EHS 3/8 (Down)			27.8	11.4	229.3	15.8	160.0
? Single Helix Anchor	13.3	334.0		6.0	229.3	7.9	160.0
? EHS 1/4 (Down)			25.0	10.1	229.3	14.5	160.0
? EHS 1/4 (Down)			23.7	10.1	229.3	14.7	160.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 234.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	400	90.1	11,667	114.5	13.1	952	500	5	956	14.1
Comms	127	28.5	2,940	28.9	3.3	240	656	6	246	3.6
GuyBraces	-313	-70.7	-8,557	-84.0	-9.6	-698	5,409	50	-648	-9.5
Pole	204	46.1	3,561	35.0	4.0	291	2,116	20	310	4.6
Streetlights	20	4.5	364	3.6	0.4	30	86	1	30	0.4
Insulators	6	1.4	215	2.1	0.2	18	59	1	18	0.3
Pole Load	443	100.0	10,189	100.0	11.4	831	8,825	82	913	13.4
Pole Reserve Capacity			78,873		88.6	5,969			5,887	86.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 234.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	194	43.7	5,538	54.4	6.2	452	4,426	41	493	7.2
Unknown, COMMUNICATION	45	10.2	1,090	10.7	1.2	89	2,283	21	110	1.6
Pole	204	46.1	3,561	35.0	4.0	291	2,116	20	310	4.6
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	443	100.0	10,189	100.0	11.4	831	8,825	82	913	13.4

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.86	0.00	0.3980	0.22	0.145	124.3	71.4	124.3	2,128	-100,327	0	134	-100,193
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.86	0.00	0.3980	0.45	0.145	179.5	244.8	179.5	2,128	103,137	0	84	103,221
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.62	6.54	0.3980	0.22	0.145	124.3	71.4	124.3	2,128	-81,111	5	108	-80,997
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.62	6.54	0.3980	0.45	0.145	179.5	244.8	179.5	2,128	83,383	7	68	83,458
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.49	6.60	0.3980	0.22	0.145	124.3	71.4	124.3	2,128	-78,104	5	104	-77,995
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.49	6.60	0.3980	0.45	0.145	179.5	244.8	179.5	2,128	80,292	8	65	80,365
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.00	6.63	0.3980	0.22	0.145	124.3	71.4	124.3	2,128	-76,815	5	102	-76,708
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.00	6.63	0.3980	0.45	0.145	179.5	244.8	179.5	2,128	78,967	8	64	79,039
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.29	6.67	0.3980	0.22	0.145	124.3	71.4	124.3	2,128	-74,941	5	100	-74,836
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.29	6.67	0.3980	0.45	0.145	179.5	244.8	179.5	2,128	77,041	8	63	77,111
Totals:											11,521	51	893	12,466	

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, COMMUNICATION	25.03	6.87	1.3300	1.68	0.337	124.3	71.4	124.3	925	-28,822	13	180	-28,629
CATV	CATV 1.0	Unknown, COMMUNICATION	25.03	6.87	1.3300	2.67	0.337	179.5	244.8	179.5	925	29,629	19	113	29,761
Telco	TELE 1.5	Unknown, COMMUNICATION	23.65	6.95	1.5000	1.97	0.900	124.3	71.4	124.3	2,000	-58,877	23	186	-58,667
Telco	TELE 1.5	Unknown, COMMUNICATION	23.65	6.95	1.5000	3.18	0.900	179.5	244.8	179.6	2,000	60,526	33	117	60,676
Totals:											2,457	88	596	3,141	

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.67	4.27	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-138	527	388
Totals:											-138	527	388	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV	KU, UTILITY	36.99	0.00	0.0	0.0	13.00	9.00	10.50	0	171	171
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.62	0.00	158.1	68.1	2.00	3.00	3.19	0	14	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.49	0.00	158.1	68.1	2.00	3.00	3.19	0	14	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.00	0.00	158.1	68.1	2.00	3.00	3.19	0	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.29	0.00	158.1	68.1	2.00	3.00	3.19	0	13	14
Bolt	Three Bolt	Unknown, COMMUNICATION	25.03	0.00	158.1	68.1	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	23.65	0.00	158.1	68.1	5.00	3.00	0.00	1	0	1
Totals:										4	226	230

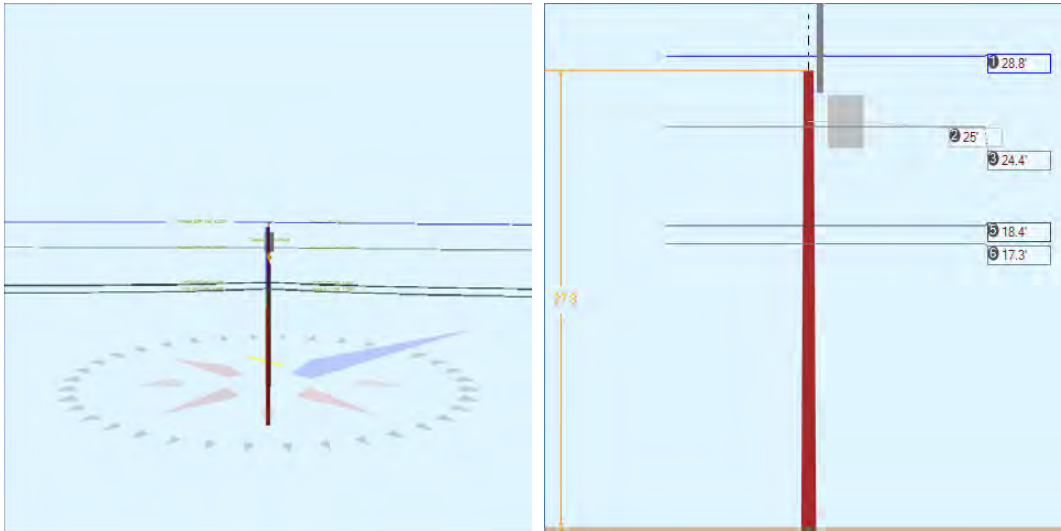
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	35.35	0.00	19.17	0.375	75.00	334.0	61.3	0.273	38.56	0.33
EHS 3/8	Down	KU, UTILITY	27.76	0.00	19.17	0.375	75.00	334.0	55.2	0.273	32.04	0.32
EHS 1/4	Down	Unknown, COMMUNICATION	25.03	0.00	13.34	0.25	75.00	334.0	61.7	0.121	26.70	0.23
EHS 1/4	Down	Unknown, COMMUNICATION	23.65	0.00	13.34	0.25	75.00	334.0	60.4	0.121	25.47	0.22

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,799	1,635	1,373	1,204	659	-107	-3,381
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,192	1,993	1,579	1,297	902	-147	-3,784
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	866	787	604	532	286	-47	-990
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	882	802	604	525	299	-49	-989
Totals:										3,557	2,145	-349	-9,143

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	19.17	334.0	20,000	1.00	20,000	3,623	2,948	18.1
Single Helix Anchor		18.00	13.34	334.0	20,000	1.00	20,000	1,588	1,207	7.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	26.66	34.05	10.62	14.50	7.32	11.70	1.60e+6	60.00	57.00	36.99	164,061	1634.29	18.52

Pole Num:	233W - 71472-33061	Pole Length / Class:	35 / 5	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.12	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	28.61	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067455 Deg	Longitude:	-84.460005 Deg	Elevation:	885.630659176909		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	32.1	0.0
Groundline	32.1	0.0
Vertical	15.9	19.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	13,262	135.8
Groundline	13,262	135.8
GL Allowable	42,028	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 135.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	168	23.6	4,535	34.2	10.8	729	150	2	731	10.7
Comms	339	47.5	6,378	48.1	15.2	1,025	596	9	1,034	15.2
PowerEquipments	42	5.9	-120	-0.9	-0.3	-19	694	11	-9	-0.1
Pole	123	17.3	1,806	13.6	4.3	290	1,009	15	306	4.5
Risers	36	5.0	509	3.8	1.2	82	41	1	82	1.2
Insulators	5	0.7	154	1.2	0.4	25	48	1	25	0.4
Pole Load	712	100.0	13,262	100.0	31.6	2,131	2,536	39	2,170	31.9
Pole Reserve Capacity			28,766		68.4	4,669			4,630	68.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 135.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	251	35.2	5,068	38.2	12.1	814	912	14	828	12.2
Unknown, COMMUNICATION	339	47.5	6,388	48.2	15.2	1,026	615	9	1,036	15.2
Pole	123	17.3	1,806	13.6	4.3	290	1,009	15	306	4.5
Totals:	712	100.0	13,262	100.0	31.6	2,131	2,536	39	2,170	31.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.75	0.00	0.3250	0.32	0.107	139.5	47.1	139.5	1,684	1,135	0	964	2,099
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	28.75	0.00	0.3250	0.31	0.107	136.6	226.5	136.6	1,684	-628	0	944	316
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.44	5.71	0.3250	0.32	0.107	139.5	47.1	139.5	1,684	965	18	819	1,802
Neutral	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	24.44	5.71	0.3250	0.31	0.107	136.6	226.5	136.6	1,684	-534	18	802	286
Totals:											938	36	3,529	4,503

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.41	6.04	1.3300	1.96	0.337	139.5	47.1	139.5	925	399	55	1,368	1,822
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.41	6.04	1.3300	1.91	0.337	136.6	226.5	136.6	925	-221	54	1,341	1,174
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.30	6.10	1.5000	2.30	0.900	139.5	47.1	139.5	2,000	811	97	1,405	2,314
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	17.30	6.10	1.5000	2.24	0.900	136.6	226.5	136.6	2,000	-449	95	1,377	1,024
		COMMUNICATION													
Totals:											541	302	5,491	6,334	

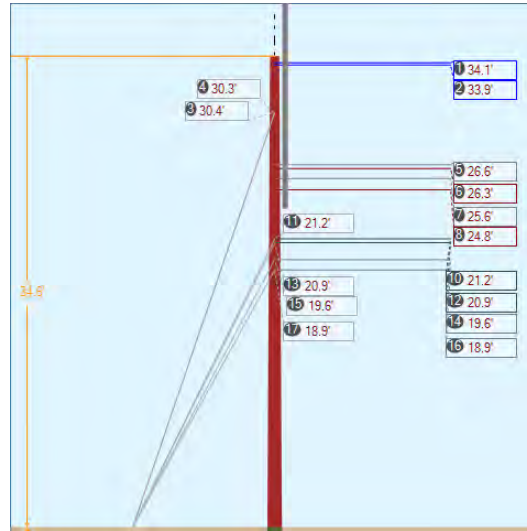
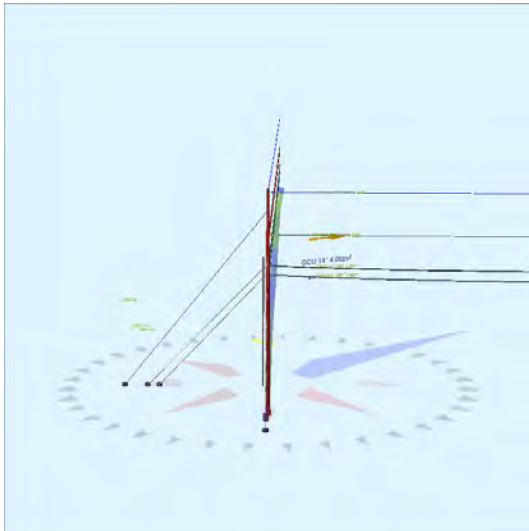
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	25.05	20.18	320.0	320.0	365.00	39.00	--	22.00	--	-1,163	1,044	-119
Totals:											-1,163	1,044	-119	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	21.38	4.73	360.0	360.0	21.38	256.58	4.00	4.00	256.58	-6	511	505
Totals:											-6	511	505	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	27.88	0.00	0.0	0.0	13.00	9.00	10.50	0	130	130
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.44	0.00	136.8	46.8	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	18.41	0.00	136.8	46.8	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	17.30	0.00	136.8	46.8	5.00	3.00	0.00	5	0	5
Totals:										11	141	153

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.97	33.43	8.41	11.18	6.05	9.11	1.60e+6	60.00	57.00	27.88	15,916	159.50	6.29

Pole Num:	234W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.71	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067208 Deg	Longitude:	-84.460364 Deg	Elevation:	884.627933192434		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	47.2	30.7
Groundline	15.5	0.0
Vertical	23.2	25.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,513	15.0
Groundline	10,617	355.3
GL Allowable	68,715	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	25.0	226.0	30.4	32.3 46.6	14.1 14.1	32.5 51.5	50.0 50.0
? Single Helix Anchor ? EHS 3/8 (Down)	26.0	135.8	30.4	27.1 39.1	14.1 14.1	27.5 43.7	320.0 320.0
? Single Helix Anchor ? EHS 1/4 (Down)	21.0	226.0	21.2	13.7 45.9	14.1 14.1	13.9 50.9	40.0 40.0
? Single Helix Anchor ? EHS 1/4 (Down)	20.0	136.0	20.9	17.2 57.5	14.1 14.1	17.6 64.5	320.0 320.0
? Single Helix Anchor ? EHS 1/4 (Down)	19.0	226.0	19.6	13.6 45.5	14.1 14.1	13.7 50.4	40.0 40.0
? Single Helix Anchor ? EHS 1/4 (Down)	18.0	136.0	18.9	16.9 56.5	14.1 14.1	17.3 63.5	320.0 320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 355.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,799	553.2	76,261	718.3	111.0	19,336	224	2	19,339	284.4
Comms	5,486	446.3	42,468	400.0	61.8	10,768	613	7	10,775	158.5
GuyBraces	-11,273	-917.2	-109,607	-1032.4	-159.5	-27,791	27,133	300	-27,491	-404.3
Pole	166	13.5	1,137	10.7	1.7	288	1,659	18	307	4.5
Risers	46	3.7	269	2.5	0.4	68	43	0	69	1.0
Insulators	6	0.5	89	0.8	0.1	23	65	1	23	0.3
Pole Load	1,229	100.0	10,617	100.0	15.5	2,692	29,736	329	3,021	44.4
Pole Reserve Capacity			58,098		84.5	4,108			3,779	55.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 355.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,581	128.7	14,107	132.9	20.5	3,577	14,035	155	3,732	54.9
Unknown, COMMUNICATION	-518	-42.2	-4,627	-43.6	-6.7	-1,173	14,042	155	-1,018	-15.0
Pole	166	13.5	1,137	10.7	1.7	288	1,659	18	307	4.5
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,229	100.0	10,617	100.0	15.5	2,692	29,736	329	3,021	44.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.92	16.13	0.3250	0.23	0.107	136.6	46.5	136.6	1,684	46,546	7	466	47,018
Primary	#4 COPPER SOLID	KU, UTILITY	34.06	16.12	0.2043	0.46	0.126	147.5	316.2	147.5	982	33,736	8	551	34,296
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	26.59	6.31	0.3250	0.23	0.107	136.6	46.5	136.6	1,684	36,497	12	365	36,874
Secondary	#4 COPPER SOLID	KU, UTILITY	26.31	6.33	0.2043	0.46	0.126	147.5	316.2	147.5	982	26,056	15	426	26,498
Neutral	#4 COPPER SOLID	KU, UTILITY	25.59	6.37	0.2043	0.46	0.126	147.5	316.2	147.5	982	25,342	15	414	25,772
Secondary	#4 COPPER SOLID	KU, UTILITY	24.76	6.42	0.2043	0.46	0.126	147.5	316.2	147.5	982	24,524	16	401	24,940
										Totals:	192,701	73	2,624	195,398	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	21.17	6.63	1.3300	1.89	0.337	136.6	46.5	136.6	925	15,955	37	645	16,637
CATV	CATV 1.0	Unknown, COMMUNICATION	20.89	6.64	1.3300	2.09	0.337	147.5	316.2	147.5	925	19,485	50	879	20,413
Telco	TELE 1.5	Unknown, COMMUNICATION	19.63	6.72	1.5000	2.22	0.900	136.6	46.5	136.6	2,000	31,988	66	653	32,707
Telco	TELE 1.5	Unknown, COMMUNICATION	18.89	6.76	1.5000	2.46	0.900	147.5	316.2	147.5	2,000	38,097	88	868	39,054
										Totals:	105,525	241	3,045	108,811	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 260.0°	Riser	KU, UTILITY	22.66	5.45	260.0	260.0	22.66	271.97	4.00	4.00	271.97	-2	691	689
Totals:											-2	691	689	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	33.92	0.00	46.5	46.5	3.00	3.80	12.75	5	76	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.06	0.00	316.2	316.2	3.00	3.80	12.75	6	76	82
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.59	0.00	46.5	46.5	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.31	0.00	316.2	316.2	2.00	3.00	3.19	2	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.59	0.00	316.2	316.2	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.76	0.00	316.2	316.2	2.00	3.00	3.19	2	11	12
Bolt	Three Bolt	Unknown, COMMUNICATION	21.17	0.00	46.5	46.5	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	20.89	0.00	316.2	406.2	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	19.63	0.00	46.5	46.5	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	18.89	0.00	316.2	406.2	5.00	3.00	0.00	4	0	4
Totals:										32	197	229

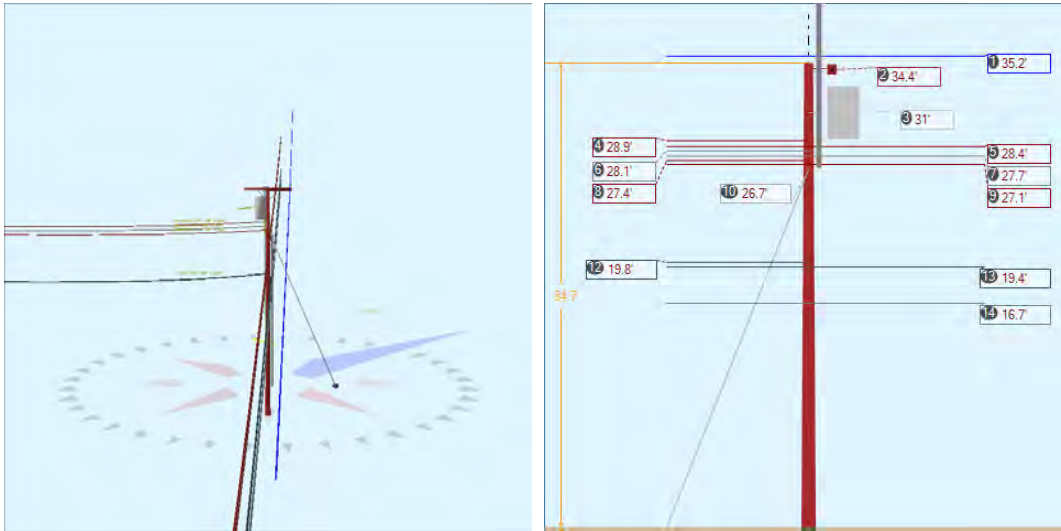
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	30.44	0.00	25.00	0.375	75.00	226.0	50.4	0.273	37.70	1.53
EHS 3/8	Down	KU, UTILITY	30.35	0.00	26.00	0.375	75.00	135.8	49.3	0.273	38.27	1.31
EHS 1/4	Down	Unknown, COMMUNICATION	21.17	0.00	21.00	0.25	75.00	226.0	45.1	0.121	28.08	1.09
EHS 1/4	Down	Unknown, COMMUNICATION	20.89	0.00	20.00	0.25	75.00	136.0	46.1	0.121	27.18	1.33
EHS 1/4	Down	Unknown, COMMUNICATION	19.63	0.00	19.00	0.25	75.00	226.0	45.8	0.121	25.57	0.99
EHS 1/4	Down	Unknown, COMMUNICATION	18.89	0.00	18.00	0.25	75.00	136.0	46.2	0.121	24.35	1.17

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,139	6,490	6,457	4,978	4,112	-2,606	-78,373
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,059	5,508	5,413	4,101	3,533	-2,726	-81,782
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,047	2,770	2,749	1,947	1,941	-1,230	-25,708
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,861	3,510	3,440	2,478	2,385	-1,845	-38,038
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,017	2,743	2,721	1,950	1,897	-1,202	-23,272
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,801	3,455	3,379	2,440	2,337	-1,808	-33,663
Totals:										17,894	16,207	-11,418	-280,837

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	25.00	226.0	20,000	1.00	20,000	6,490	6,457	32.5
Single Helix Anchor		18.00	26.00	135.8	20,000	1.00	20,000	5,508	5,413	27.5
Single Helix Anchor		18.00	21.00	226.0	20,000	1.00	20,000	2,770	2,749	13.9
Single Helix Anchor		18.00	20.00	136.0	20,000	1.00	20,000	3,510	3,440	17.6
Single Helix Anchor		18.00	19.00	226.0	20,000	1.00	20,000	2,743	2,721	13.7
Single Helix Anchor		18.00	18.00	136.0	20,000	1.00	20,000	3,455	3,379	17.3

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.25	34.13	9.72	25.66	6.69	10.73	1.60e+6	60.00	57.00	34.56	128,132	1281.74	4.31

Pole Num:	235W - NT	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.74	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067475 Deg	Longitude:	-84.460690 Deg	Elevation:	886.155322640216		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	313.4
Groundline	0.0	313.4
Vertical	24.6	228.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	11,652	307.9
Groundline	11,652	307.9
GL Allowable	68,918	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	11.8	48.4		9.9	313.4	16.2	230.0
? EHS 3/8 (Down)			26.7	14.2	313.4	25.7	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 307.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	172	36.9	4,645	39.9	6.7	476	385	4	480	7.1
Comms	118	25.2	2,196	18.9	3.2	225	728	8	233	3.4
GuyBraces	-135	-28.9	-3,467	-29.8	-5.0	-356	2,730	30	-325	-4.8
PowerEquipments	55	11.7	3,285	28.2	4.8	337	1,216	13	350	5.2
Pole	175	37.5	2,964	25.4	4.3	304	1,665	18	322	4.7
Crossarms	33	7.1	1,138	9.8	1.7	117	95	1	118	1.7
Risers	45	9.6	776	6.7	1.1	80	50	1	80	1.2
Insulators	4	0.9	116	1.0	0.2	12	63	1	13	0.2
Pole Load	467	100.0	11,652	100.0	16.9	1,195	6,931	77	1,271	18.7
Pole Reserve Capacity			57,266		83.1	5,605			5,529	81.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 307.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	141	30.1	5,354	46.0	7.8	549	4,415	49	598	8.8
Unknown, COMMUNICATION	118	25.2	2,196	18.9	3.2	225	756	8	234	3.4
Pole	175	37.5	2,964	25.4	4.3	304	1,665	18	322	4.7
<Undefined>	33	7.1	1,138	9.8	1.7	117	95	1	118	1.7
Totals:	467	100.0	11,652	100.0	16.9	1,195	6,931	77	1,271	18.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	#4 COPPER SOLID	KU, UTILITY	35.19	45.29	0.2043	0.43	0.126	147.5	136.2	147.5	982	-44,464	-4	8	-44,461
Primary	#4 COPPER SOLID	KU, UTILITY	35.19	45.29	0.2043	0.45	0.126	150.1	316.1	150.1	982	44,475	-4	7	44,478
Secondary	#4 COPPER SOLID	KU, UTILITY	28.86	6.18	0.2043	0.26	0.126	108.5	228.2	108.6	150	1,002	3	631	1,635
Secondary	#4 COPPER SOLID	KU, UTILITY	28.43	6.21	0.2043	1.17	0.126	147.5	136.2	147.5	450	-16,459	-3	6	-16,456

Secondary	#4 COPPER SOLID	KU, UTILITY	28.43	6.21	0.2043	1.21	0.126	150.1	316.1	150.1	450	16,463	-3	6	16,466
Neutral	#4 COPPER SOLID	KU, UTILITY	28.11	6.23	0.2043	0.26	0.126	108.5	228.2	108.6	150	975	3	614	1,592
Neutral	#4 COPPER SOLID	KU, UTILITY	27.71	6.25	0.2043	1.17	0.126	147.5	136.2	147.5	450	-16,043	-3	6	-16,039
Neutral	#4 COPPER SOLID	KU, UTILITY	27.71	6.25	0.2043	1.21	0.126	150.1	316.1	150.1	450	16,047	-3	6	16,050
Secondary	#4 COPPER SOLID	KU, UTILITY	27.38	6.27	0.2043	0.26	0.126	108.5	228.2	108.6	150	950	3	598	1,551
Secondary	#4 COPPER SOLID	KU, UTILITY	27.10	6.28	0.2043	1.17	0.126	147.5	136.2	147.5	450	-15,689	-3	6	-15,686
Secondary	#4 COPPER SOLID	KU, UTILITY	27.10	6.28	0.2043	1.21	0.126	150.1	316.1	150.1	450	15,693	-3	6	15,696
Totals:											2,950	-17	1,894	4,827	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	19.78	6.71	1.3300	1.45	0.337	108.5	228.2	108.6	250	1,144	8	1,123	2,276
CATV	CATV 1.0	Unknown, COMMUNICATION	19.44	6.73	1.3300	2.07	0.337	147.5	136.2	147.5	925	-23,135	-9	11	-23,133
CATV	CATV 1.0	Unknown, COMMUNICATION	19.44	6.73	1.3300	2.12	0.337	150.1	316.1	150.1	925	23,140	-9	11	23,142
Telco	TELE 1.5	Unknown, COMMUNICATION	16.73	6.89	1.5000	2.45	0.900	147.5	136.2	147.5	2,000	-43,046	-16	10	-43,052
Telco	TELE 1.5	Unknown, COMMUNICATION	16.73	6.89	1.5000	2.51	0.900	150.1	316.1	150.1	2,000	43,056	-17	10	43,050
Totals:											1,161	-43	1,165	2,283	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	30.97	21.56	270.0	270.0	640.00	47.00	--	24.00	--	1,723	1,691	3,413
Totals:											1,723	1,691	3,413	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		34.37	5.11	316.1	316.1	50.00	4.50	3.50	96.00	40	1,142	1,182
Totals:											40	1,142	1,182

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	26.50	5.45	360.0	360.0	26.50	318.00	4.00	4.00	318.00	15	791	806
Totals:											15	791	806	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.56	45.00	39.6	0.0	6.00	3.50	7.50	-1	44	43
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.86	0.00	228.2	228.2	2.00	3.00	3.19	0	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.43	0.00	46.1	136.1	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.11	0.00	228.2	228.2	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.71	0.00	46.1	136.1	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.38	0.00	228.2	228.2	2.00	3.00	3.19	0	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.10	0.00	46.1	136.1	2.00	3.00	3.19	0	13	12
Bolt	Single Bolt	Unknown, COMMUNICATION	19.78	0.00	228.2	318.2	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	19.44	0.00	46.1	316.1	5.00	3.00	0.00	-1	0	-1
Bolt	Three Bolt	Unknown, COMMUNICATION	16.73	0.00	46.1	316.1	5.00	3.00	0.00	-1	0	-1
Totals:										-2	122	120

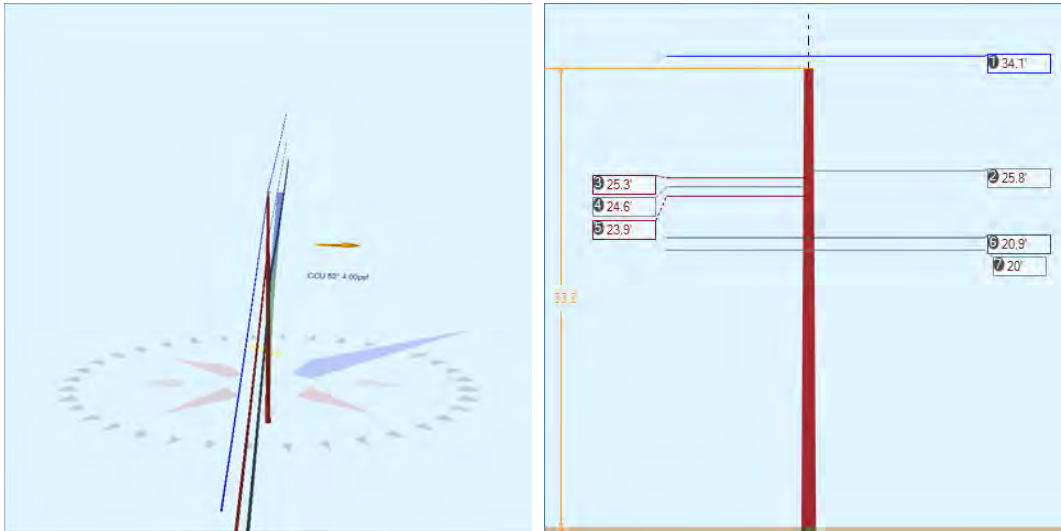
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	26.70	0.00	11.81	0.375	75.00	48.4	65.9	0.273	27.57	0.34

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,567	3,242	1,975	1,803	806	-147	-3,603
Totals:										1,803	806	-147	-3,603

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	11.81	48.4	20,000	1.00	20,000	3,242	1,975	16.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.65	34.03	9.76	12.37	6.69	10.75	1.60e+6	60.00	57.00	34.65	136,604	1359.09	19.61

Pole Num:	268W - 71134-33253	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.81	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.20	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.067780 Deg	Longitude:	-84.461060 Deg	Elevation:	894.163156580216		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.6	52.0
Groundline	29.6	52.0
Vertical	7.6	52.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,137	52.0
Groundline	19,137	52.0
GL Allowable	65,668	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 72.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	352	41.0	8,902	46.5	13.6	918	233	3	920	13.5
Comms	343	40.0	7,375	38.5	11.2	760	668	8	768	11.3
Pole	157	18.3	2,659	13.9	4.1	274	1,562	18	292	4.3
Insulators	6	0.7	201	1.1	0.3	21	59	1	21	0.3
Pole Load	858	100.0	19,137	100.0	29.1	1,973	2,522	29	2,002	29.4
Pole Reserve Capacity			46,531		70.9	4,827			4,798	70.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 72.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	358	41.7	9,093	47.5	13.9	937	273	3	941	13.8
Unknown, COMMUNICATION	343	40.0	7,385	38.6	11.3	761	687	8	769	11.3
Pole	157	18.3	2,659	13.9	4.1	274	1,562	18	292	4.3
Totals:	858	100.0	19,137	100.0	29.1	1,973	2,522	29	2,002	29.4

Detailed Load Components:

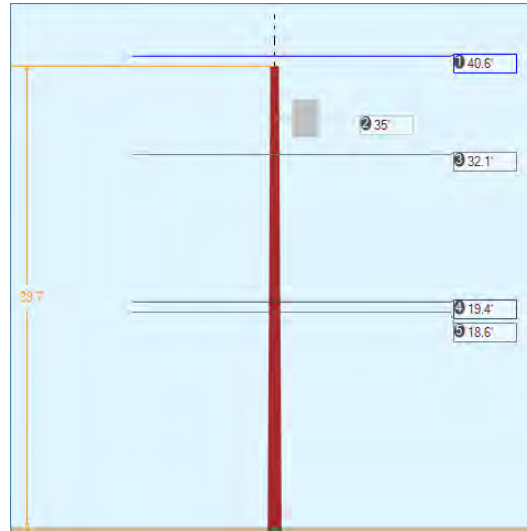
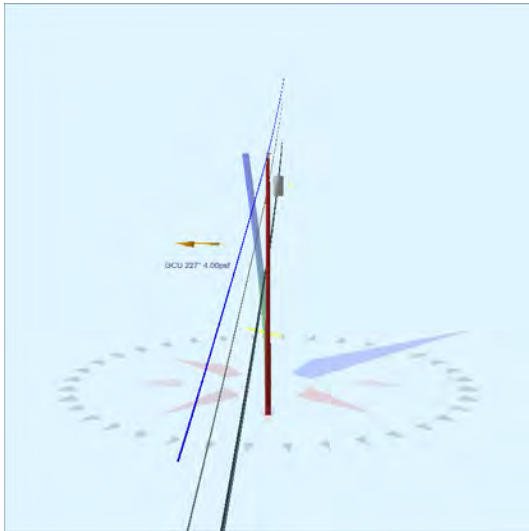
Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER SOLID KU, UTILITY	34.06	0.00	0.2043	0.57	0.126	159.5	316.8	159.5	982	-14,230	0	1,006	-13,224
Primary	#4 COPPER SOLID KU, UTILITY	34.06	0.00	0.2043	0.50	0.126	150.1	136.1	150.1	982	14,599	0	940	15,540
Neutral	#4 COPPER SOLID KU, UTILITY	25.77	6.28	0.2043	0.57	0.126	159.5	316.8	159.5	982	-10,765	-9	761	-10,012
Secondary	#4 COPPER SOLID KU, UTILITY	25.26	6.31	0.2043	1.32	0.126	150.1	136.1	150.1	450	4,959	9	697	5,665
Neutral	#4 COPPER SOLID KU, UTILITY	24.62	6.34	0.2043	1.32	0.126	150.1	136.1	150.1	450	4,834	9	679	5,522
Secondary	#4 COPPER SOLID KU, UTILITY	23.95	6.38	0.2043	1.32	0.126	150.1	136.1	150.1	450	4,702	9	661	5,372
										Totals:	4,100	17	4,745	8,862

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 Unknown, COMMUNICATION	20.93	6.56	1.3300	2.15	0.337	150.1	136.1	150.1	925	8,446	58	1,501	10,005
CATV	CATV 1.0 Unknown, COMMUNICATION	20.93	6.56	1.3300	2.32	0.337	159.5	316.8	159.5	925	-8,233	62	1,606	-6,565
Telco	TELE 1.5 Unknown, COMMUNICATION	20.03	6.61	1.5000	2.53	0.900	150.1	136.1	150.1	2,000	17,481	102	1,570	19,153
Telco	TELE 1.5 Unknown, COMMUNICATION	20.03	6.61	1.5000	2.74	0.900	159.5	316.8	159.5	2,000	-17,039	109	1,680	-15,250
										Totals:	655	331	6,356	7,342

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Pin	Pin Insulator - 22 kV KU, UTILITY	33.19	0.00	0.0	0.0	13.00	9.00	10.50	0	145	145
Spool	Spool Insulator - 25 kV KU, UTILITY	25.77	0.00	316.8	316.8	2.00	3.00	3.19	-1	11	10
Spool	Spool Insulator - 25 kV KU, UTILITY	25.26	0.00	136.1	136.1	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV KU, UTILITY	24.62	0.00	136.1	136.1	2.00	3.00	3.19	1	11	12
Spool	Spool Insulator - 25 kV KU, UTILITY	23.95	0.00	136.1	136.1	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt Unknown, COMMUNICATION	20.93	0.00	46.4	316.4	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt Unknown, COMMUNICATION	20.03	0.00	46.4	316.4	5.00	3.00	0.00	5	0	5
Totals:									11	189	200

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.06	33.00	9.87	11.20	6.69	10.57	1.60e+6	60.00	57.00	33.19	33,314	331.86	13.16

Pole Num:	269W - 70980-33407	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.27	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.77	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.068103 Deg	Longitude:	-84.461418 Deg	Elevation:	898.715266573173		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	21.6	0.0 227.0
Groundline	21.6	0.0 227.0
Vertical	12.0	22.6 227.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,409	227.2 227.0
Groundline	20,409	227.2 227.0
GL Allowable	96,701	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	173	19.4	6,386	31.3	6.6	446	193	2	448	6.6
Comms	450	50.3	9,078	44.5	9.4	635	819	7	642	9.4
PowerEquipments	42	4.7	266	1.3	0.3	19	694	6	25	0.4
Pole	224	25.1	4,464	21.9	4.6	312	2,357	21	333	4.9
Insulators	5	0.6	215	1.1	0.2	15	48	0	15	0.2
Pole Load	894	100.0	20,409	100.0	21.1	1,427	4,110	36	1,463	21.5
Pole Reserve Capacity			76,292		78.9	5,373			5,337	78.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	220	24.6	6,855	33.6	7.1	479	915	8	487	7.2
Unknown, COMMUNICATION	450	50.3	9,090	44.5	9.4	636	838	7	643	9.5
Pole	224	25.1	4,464	21.9	4.6	312	2,357	21	333	4.9
Totals:	894	100.0	20,409	100.0	21.1	1,427	4,110	36	1,463	21.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	#4 COPPER SOLID KU, UTILITY	40.61	0.00	0.2043	0.57	0.126	159.5	136.8	159.5	982	-260	0	1,331	1,071
Primary	#4 COPPER SOLID KU, UTILITY	40.61	0.00	0.2043	1.08	0.126	220.1	316.3	220.1	982	608	0	1,836	2,444
Neutral	#4 COPPER SOLID KU, UTILITY	32.13	6.61	0.2043	0.57	0.126	159.5	136.8	159.5	982	-206	22	1,053	869
Neutral	#4 COPPER SOLID KU, UTILITY	32.13	6.61	0.2043	1.08	0.126	220.1	316.3	220.1	982	481	31	1,453	1,964
										Totals:	623	53	5,672	6,349

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	19.41	7.36	1.3300	2.32	0.337	159.5	136.8	159.5	925	-117	77	1,652	1,612
CATV	CATV 1.0	Unknown, COMMUNICATION	19.41	7.36	1.3300	3.57	0.337	220.1	316.3	220.2	925	274	106	2,280	2,660
Telco	TELE 1.5	Unknown, COMMUNICATION	18.55	7.41	1.5000	2.73	0.900	159.5	136.8	159.5	2,000	-242	135	1,726	1,619
Telco	TELE 1.5	Unknown, COMMUNICATION	18.55	7.41	1.5000	4.27	0.900	220.1	316.3	220.2	2,000	566	187	2,382	3,134
Totals:											480	505	8,040	9,026	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-25KVA	KU, UTILITY	35.00	20.94	38.0	38.0	365.00	39.00	--	22.00	--	-1,195	1,460	265
Totals:											-1,195	1,460	265

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin Pin Insulator - 22 kV	KU, UTILITY	39.74	0.00	0.0	0.0	13.00	9.00	10.50	0	185	185	
Spool Spool Insulator - 25 kV	KU, UTILITY	32.13	0.00	226.5	136.5	2.00	3.00	3.19	2	15	17	
Bolt Three Bolt	Unknown, COMMUNICATION	19.41	0.00	226.5	136.5	5.00	3.00	0.00	6	0	6	
Bolt Three Bolt	Unknown, COMMUNICATION	18.55	0.00	226.5	136.5	5.00	3.00	0.00	6	0	6	
Totals:										14	199	213

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.65	33.34	11.13	15.84	7.32	12.03	1.60e+6	60.00	57.00	39.74	34,215	342.50	8.33

34' 2" - 196W - 74743-33160

24' 10" - Lowest Power

21' 6" - Proposed Metronet

20' 4" - Highest Tel Cable

20' 4" - Highest Tel Drop

4' - Base offset

Base

33' 2" - 197W - 74665-33083

22' 9" - Lowest Power

19' 5" - Proposed Metronet

18' 6" - Highest Tel Cable

18' 4" - Highest Tel Drop

4' - Base offset

Base

WIN6688

32' 5" - 198W - 74577-32994

21' 9" - Lowest Power

18' 2" - Proposed Metronet

16' 11" - Highest Tel Cable

16' 9" - Highest Tel Drop

4' - Base offset

Base

32' 5" - 199W - 74976-33005

22' 4" - Lowest Power

18' 11" - Proposed Metronet

18' 5" - Highest Tel Drop

17' 11" - Highest Tel Cable

4' - Base offset

Base

32' - 200W - 74965-33063

23' 8" - Lowest Power

20' 4" - Proposed Metronet

17' 8" - Highest Tel Cable

4' - Base offset

Base



32' 10" - 201W - 74948-33132

24' 6" - Lowest Power

21' 2" - Proposed Metronet

19' 1" - Highest Tel Drop

18' 3" - Highest Tel Cable

4' - Base offset

Base

32' 2" - 202W - 74868-33192

21' 5" - Lowest Power

18' 6" - Highest Tel Cable

18' 1" - Proposed Metronet

4' - Base offset

Base

32' 5" - 203W - 74507-32929

24' 4" - Lowest Power

21' - Highest Tel Cable

21' - Proposed Metronet

4' - Base offset

Base

WIN6694

31' 11" - 204W - 74391-32820

21' 8" - Lowest Power

20' - Proposed Metronet

19' - Highest Tel Cable

18' 10" - Highest Tel Drop

6' - Base offset

Base

32' 7" - 205W - 74315-32899

23' 9" - Lowest Power

20' 5" - Proposed Metronet

19' 11" - Highest Tel Cable

18' 10" - Highest Tel Drop

4' - Base offset

Base

33' 1" - 206W - 74480-32725

24' 5" - Lowest Power

21' 1" - Proposed Metronet

19' 11" - Highest Tel Drop

19' 2" - Highest Tel Cable

4' - Base offset

Base

29' 11" - 207W - 74569-32630

21' 10" - Lowest Power

17' 10" - Highest Tel Cable

17' 10" - Proposed Metronet

4' - Base offset

Base

35' 3" - 208W - 74675-32510

26' - Lowest Power

23' 1" - Proposed Metronet

22' 7" - Highest Tel Cable

22' 7" - Proposed Metronet

4' - Base offset
w/ base

WIN6699

31' 3" - 209W - 74837-32586

21' 11" - Lowest Power

18' 6" - Highest Tel Drop

18' 3" - Highest Tel Cable

18' 3" - Proposed Metronet

4' - Base offset

Base

WIN6700

32' 11" - 210W - 74952-33643

23' 11" - Lowest Power

21' 1" - Proposed Metronet

20' 1" - Highest Tel Cable

19' 10" - Highest Tel Drop

4' - Base offset

Base

29' 11" - 211W - 75079-32705

20' 11" - Lowest Power

17' - Highest Tel Cable

17' - Proposed Metronet

16' 2" - Highest Tel Drop

Base

37' - 212W - 75232-32777

26' 8" - Lowest Power

25' - Proposed Metronet

23' 8" - Highest Tel Cable

23' 4" - Highest Tel Drop

4' - Base offset

Base

27' 11" - 233W - 71472-33061

23' 5" - Lowest Power

19' 5" - Proposed Metronet

17' 4" - Highest Tel Cable

4' - Base offset

Base

WIN6704

34' 4" - 234W - NT

22' 8" - Lowest Power

19' 8" - Highest Tel Cable

19' 4" - Proposed Metronet

4' - Base offset

Base

34' 9" - 235W - NT

25' 5" - Lowest Power

20' 5" - Proposed Metronet

16' 9" - Highest Tel Cable

4' - Base offset

Base

33' 2" - 268W - 71134-33253

23' 11" - Lowest Power

20' 7" - Proposed Metronet

20' - Highest Tel Cable

19' 1" - Highest Tel Drop

4' - Base offset

Base

39' 9" - 269W - 70980-33407

30' 6" - Lowest Power

20' 5" - Proposed Metronet

18' 8" - Highest Tel Drop

18' 7" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Thursday, March 22, 2018 8:00 AM
To: Windstream Jointuse; Hays, Sarah K
Cc: Permits
Subject: LX-FR01-03W
Attachments: LX-FR01-03W -WINDSTREAM INVENTORY REPORT.xlsx.pdf; Pole Photos.pdf; LX-FR01-03 - METRONET POLE INVENTORY REPORT.XLSX; O-Calcs.pdf; Pole App Map.pdf; Map Key.pdf

Categories: Rejected

Good morning,
Please see attached for proposal titled LX-FR01-03W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX-FR01-03 Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole c	Make Ready :
		715	85616-16466	60/2	KU	2=Comms	
KU	4	715	85616-16466		KU		
Windstream	0	715	85616-16466		KU		
Total Pole Count	4	715	85616-16466		KU		
Total Needing Make Ready	1	715	85616-16466		KU		
		715	85616-16466		KU		
		715	85616-16466		KU		
		715	85616-16466		KU		
		715	85616-16466		KU		
		715	85616-16466		KU		
		715	85616-16466		KU		
		715	85616-16466		KU		
		715	85616-16466		KU		
		716	85541-16388	50/2	KU	1=None	
		716	85541-16388		KU		
		716	85541-16388		KU		
		716	85541-16388		KU		
		716	85541-16388		KU		
		716	85541-16388		KU		
		716	85541-16388		KU		
		716	85541-16388		KU		
		716	85541-16388		KU		
		716	85541-16388		KU		
		717	85477-16325	50/2	KU	1=None	
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		717	85477-16325		KU		
		718P	85467-16353	50/2	KU	1=None	
		718P	85467-16353		KU		

718P	85467-16353	KU
718P	85467-16353	KU
718P	85467-16353	KU
718P	85467-16353	KU

END

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
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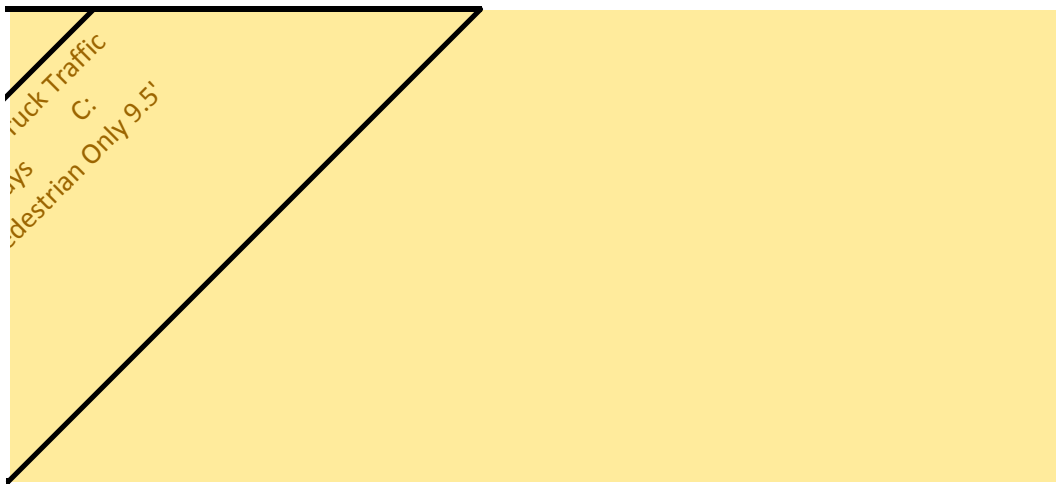
	1957 BRYANT RD	38.02065	-84.41241	KU		
		38.02065	-84.41241	KU		
		38.02065	-84.41241	KU		
		38.02065	-84.41241	Metronet		
		38.02065	-84.41241	Metronet		
Lower Charter		38.02065	-84.41241	Charter		
		38.02065	-84.41241	Charter		
		38.02065	-84.41241	Charter		
		38.02065	-84.41241	Windstream		
		38.02065	-84.41241	Windstream		
		38.02065	-84.41241	Windstream		
		38.02065	-84.41241	Windstream		
	1973 PLAUDIT PL	38.02033	-84.41277	KU		
		38.02033	-84.41277	KU		
		38.02033	-84.41277	KU		
		38.02033	-84.41277	KU		
		38.02033	-84.41277	KU		
		38.02033	-84.41277	Metronet		
		38.02033	-84.41277	Windstream		
		38.02033	-84.41277	Charter		
		38.02033	-84.41277	Charter		
	1973 PLAUDIT PL	38.02026	-84.41286	KU		
		38.02026	-84.41286	KU		
		38.02026	-84.41286	KU		
		38.02026	-84.41286	KU		
		38.02026	-84.41286	KU		
		38.02026	-84.41286	Metronet		
		38.02026	-84.41286	Metronet		
		38.02026	-84.41286	Windstream		
		38.02026	-84.41286	Charter		
		38.02026	-84.41286	Windstream		
		38.02026	-84.41286	Charter		
51.70	1973 PLAUDIT PL	38.02036	-84.41295	KU		
		38.02036	-84.41295	KU		

38.02036	-84.41295	KU
38.02036	-84.41295	Metronet
38.02036	-84.41295	Windstream
38.02036	-84.41295	Charter

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance Height	Mid Span Clearance to Ground	3rd Party Comm to Power	3rd Party Comm Clearance Issue At Pole Y/N	Environment Code	Roads B:Residential/Over Driveway	Pedestrian traffic only D: Pe	A: DOT Tr
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Primary	38' 3"										D: Pedestrian Only 9.5'
Primary	34' 2"										
Neutral	30' 2"										
Communication		26'8"									
Communication		26'3"									
Communication	26' 8"	25'3"									
Communication	24' 3"		176								
Communication	23' 10"										
Communication	23' 2"										
Communication	22' 11"										
Communication	22' 5"										
Communication	21' 9"	18'0"									
Primary	40' 11"										D: Pedestrian Only 9.5'
Primary Riser	31' 9"										
Secondary Riser	31' 2"										
Transformer	30' 5"										
Secondary Drip Loop	29' 0"										
Communication		25'1"									
Communication	24' 1"		139								
Communication	23' 3"										
Communication	22' 9"	22'6"									
Neutral	39' 9"										D: Pedestrian Only 9.5'
Primary	39' 2"										
Primary	37' 9"										
Primary	35' 8"										
Neutral	32' 5"										
Communication		27'11"									
Communication		27'7"									
Communication	26' 7"		77								
Communication	24' 10"										
Communication	24' 3"										
Communication	23' 6"	24'4"									
Neutral	41' 4"										B:Residential/Over Driveways
Primary	40' 11"										

Neutral	35' 8"		N	N
Communication		27'11"	N	N
Communication	26' 11"		116	N
Communication	25' 11"	27'6"	N	N



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX-FR01-03W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: Lauren Sandefur 812-213-1328
 EMAIL ADDRESS lauren.sandefur@metronetinc.com

Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date:

Sandefur 3.18.18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12	
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N	
1	NT	712W	2920 Man O War Blvd, Lexington,	45, 3, WXM	34'4"	N/A	N/A	(1)Fiber/Strand				
2	NT	713W	2920 Man O War Blvd, Lexington,	45, 3, WXM	31'3"	N/A	N/A	(2)Fiber/Strand				
3	NT	714W	1957 Bryant Rd, Lexington, KY 40	45, 3, WXM	31'4"	N/A	N/A	(2)Fiber/Strand				
4												
5												
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND

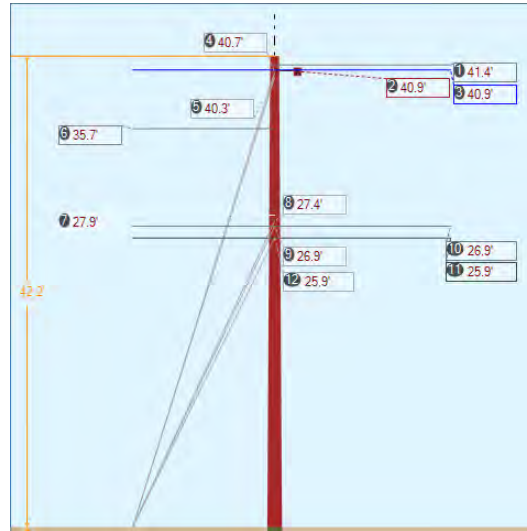
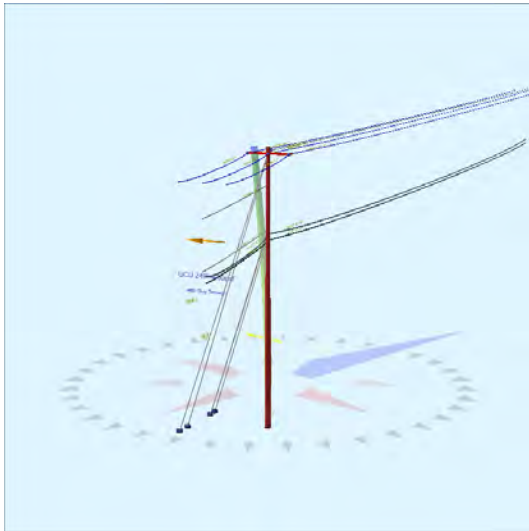
FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX02-03	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

MISCELLANEOUS	
ROADNAME	ROADS WORK POINTS
RAILROADS	

STRAND AND TRENCH	
Footage AERIAL (TENSION SPAN)	Footage AERIAL (SLACK SPAN)
Footage NEW / PROPOSED TRENCH	Footage EXISTING INHERITED TRENCH

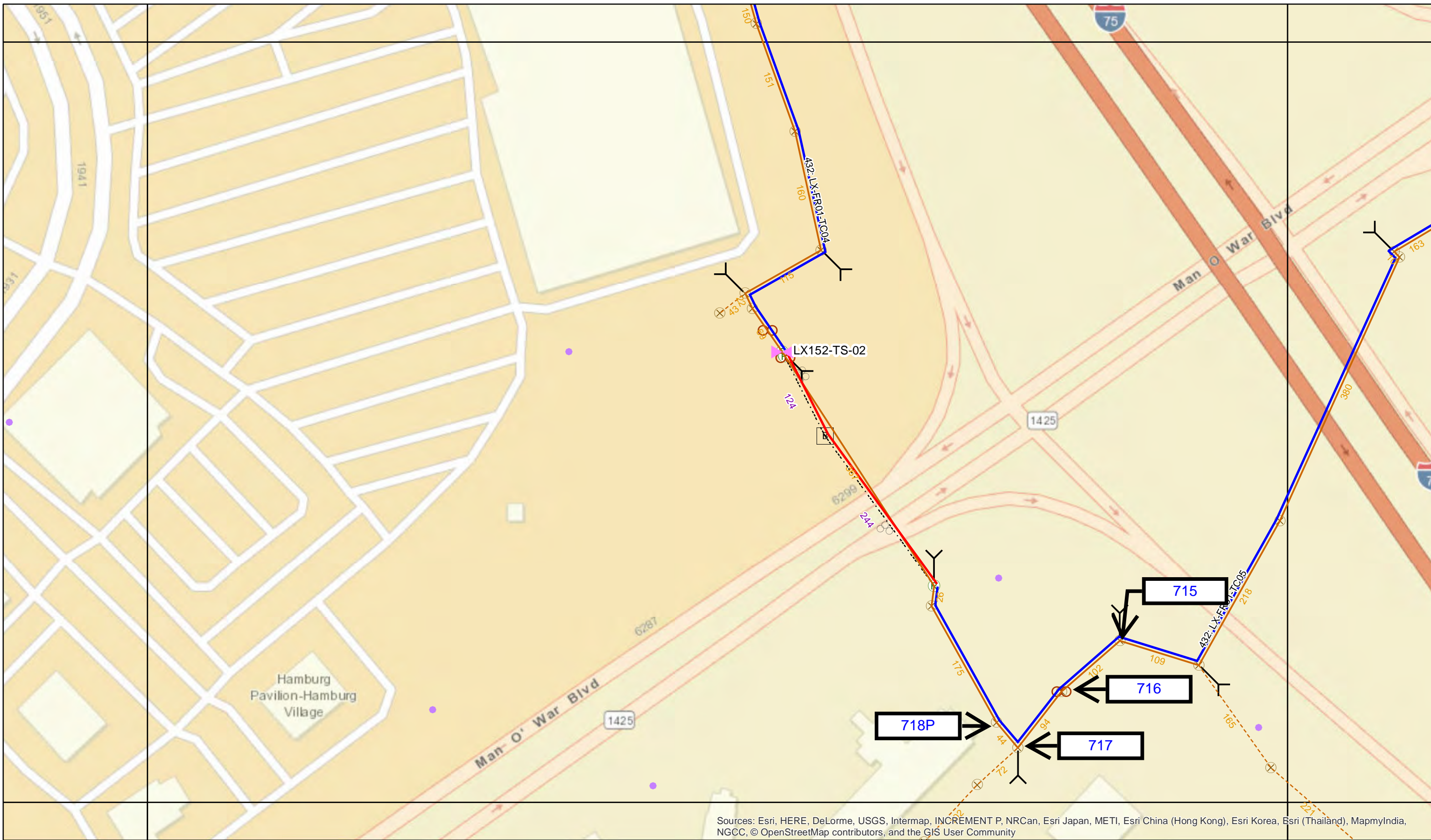
Pole Num:	718P - 85467-16353	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.29	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.020358 Deg	Longitude:	-84.412945 Deg	Elevation:	888.153550424751		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	51.7	249.3
Groundline	51.7	249.3
Vertical	34.0	343.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	59,704	255.8
Groundline	59,704	255.8
GL Allowable	126,274	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	30.0	162.7		60.3	249.3	60.6	320.0
? EHS 3/8 (Down)			40.7	87.0	249.3	96.1	320.0
? Single Helix Anchor	27.4	162.8		56.9	249.3	57.6	10.0
? EHS 3/8 (Down)			40.3	82.2	249.3	91.5	10.0
? Single Helix Anchor	20.0	163.2		22.4	249.3	23.2	0.0
? EHS 1/4 (Down)			27.4	38.0	249.3	43.3	0.0
? EHS 1/4 (Down)			26.9	36.9	249.3	42.0	0.0
? Single Helix Anchor	18.3	163.7		9.4	249.3	10.3	30.0
? EHS 1/4 (Down)			25.9	31.3	249.3	37.7	30.0
System Capacity Summary:				Adequate		Near Capacity	



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAV43
 PROJECT NUMBER:
 LXTNXY00497.CB
 DATE: 1/16/2018
 USER NAME: arcgis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX-FR01 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

THIS PRINT AND DESIGN ARE THE SOLE PROPERTY OF METRONET AND SHALL BE CONSIDERED CONFIDENTIAL. THIS PRINT MAY NOT BE REPRODUCED IN ANY WAY WITHOUT THE WRITTEN CONSENT OF METRONET, AND SHALL BE RETURNED UPON REQUEST

METRONET
 3701 Communications Way
 Evansville, In 47715



39' 2" - 715 - 85616-16466

30' 2" - Neutral

26' 8" - Top Comm

26' 8" - Proposed Metronet

26' 3" - Proposed Metronet

21' 9" - Bottom Comm

4' - Base offset

Base

31' 9" - Primary Riser

31' 2" - Secondary Riser

30' 5" - Transformer

29' - Secondary Drip Loop

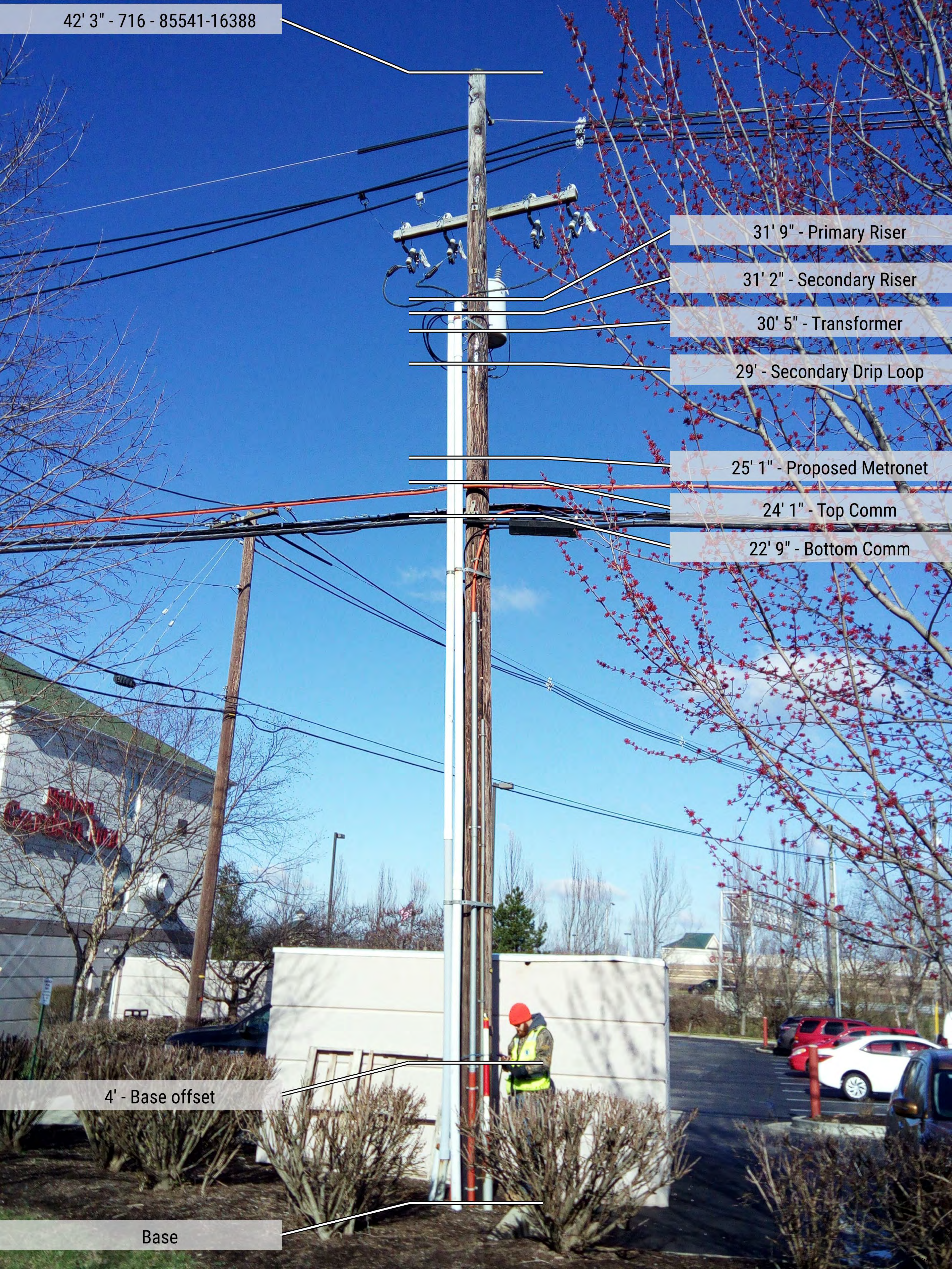
25' 1" - Proposed Metronet

24' 1" - Top Comm

22' 9" - Bottom Comm

4' - Base offset

Base



40' 3" - 717 - 85477-16325

32' 5" - Neutral

27' 11" - Proposed Metronet

27' 7" - Proposed Metronet

26' 7" - Top Comm

23' 6" - Bottom Comm

4' - Base offset

Base



42' 2" - 718P - 85467-16353

35' 8" - Neutral

27' 11" - Proposed Metronet

26' 11" - Top Comm

25' 11" - Bottom Comm

4' - Base offset

Base

Hilton
Garden Inn

CONTACT
CARS
ONLY

330217

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 3:09 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX-FR02-01W
Attachments: Map Key.pdf; LX-FR02-01W - METRONET POLE INVENTORY REPORT.XLSX; LX-FR02-01W - Windstream Inventory Report.pdf; O-Calcs.pdf; PolePhotos.pdf; LX-FR02-01W MAP.PDF

Good Morning,
Please see attached for proposal titled LX-FR02-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX-FR02-01W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Make Ready 3=Elec
		408W	21661-24	45/ 3	WS	2=Comms
KU	0	408W	21661-24		WS	
Windstream	25	408W	21661-24		WS	
Total Pole Count	25	408W	21661-24		WS	
Total Needing Make Ready	13	408W	21661-24		WS	
		408W	21661-24		WS	
		408W	21661-24		WS	
		408W	21661-24		WS	
		408W	21661-24		WS	
		408W	21661-24		WS	
		408W	21661-24		WS	
		408W	21661-24		WS	
		409W	21661-23	45/ 3	WS	1=None
		409W	21661-23		WS	
		409W	21661-23		WS	
		409W	21661-23		WS	
		409W	21661-23		WS	
		409W	21661-23		WS	
		410W	21661-22	45/ 3	WS	1=None
		410W	21661-22		WS	
		410W	21661-22		WS	
		410W	21661-22		WS	
		410W	21661-22		WS	
		411W	21661-21	50/ 2	WS	1=None
		411W	21661-21		WS	
		411W	21661-21		WS	
		411W	21661-21		WS	
		411W	21661-21		WS	
		411W	21661-21		WS	
		411W	21661-21		WS	
		411W	21661-21		WS	
		411W	21661-21		WS	
		411W	21661-21		WS	

476W NT		WS	
476W NT		WS	
477W NT	50/ 2	WS	1=None
477W NT		WS	
477W NT		WS	
477W NT		WS	
477W NT		WS	
477W NT		WS	
477W NT		WS	
477W NT		WS	
477W NT		WS	
477W NT		WS	
477W NT		WS	
478W NT	55/ 2	WS	2=Comms
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
478W NT		WS	
479W 500-57-50	45/ 3	WS	2=Comms
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
479W 500-57-50		WS	
480W 500-57	50/ 2	WS	2=Comms
480W 500-57		WS	
480W 500-57		WS	
480W 500-57		WS	
480W 500-57		WS	
480W 500-57		WS	

483W	500-55		WS	
483W	500-55		WS	
483W	500-55		WS	
483W	500-55		WS	
483W	500-55		WS	
483W	500-55		WS	
484W	800500-54	50/ 1	WS	1=None
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
484W	800500-54		WS	
485W	500-53	50/ 2	WS	2=Comms
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
485W	500-53		WS	
486W	800500-53	50/ 2	WS	1=None
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
486W	800500-53		WS	
487W	NT	50/ 2	WS	2=Comms
487W	NT		WS	
487W	NT		WS	

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
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	4232 EVANGELINE LN	37.98470	-84.41085	KU		
		37.98470	-84.41085	KU		
		37.98470	-84.41085	KU		
		37.98470	-84.41085	KU		
		37.98470	-84.41085	Metronet		
		37.98470	-84.41085	Metronet		
Lower Charter		37.98470	-84.41085	Charter		
Lower Charter		37.98470	-84.41085	Charter		
Lower Windstream		37.98470	-84.41085	Windstream		
Lower Windstream		37.98470	-84.41085	Windstream		
Lower Windstream		37.98470	-84.41085	Windstream		
	4236 EVANGELINE LN	37.98474	-84.41108	KU		
		37.98474	-84.41108	KU		
		37.98474	-84.41108	KU		
		37.98474	-84.41108	Metronet		
		37.98474	-84.41108	Charter		
		37.98474	-84.41108	Windstream		
	405 HAYS BLVD	37.98461	-84.41148	KU		
		37.98461	-84.41148	KU		
		37.98461	-84.41148	Metronet		
		37.98461	-84.41148	Charter		
		37.98461	-84.41148	Windstream		
63.90	394 CHILESBURG RD	37.98441	-84.41199	KU		
		37.98441	-84.41199	KU		
		37.98441	-84.41199	KU		
		37.98441	-84.41199	KU		
		37.98441	-84.41199	Metronet		
		37.98441	-84.41199	Metronet		
		37.98441	-84.41199	Charter		
		37.98441	-84.41199	Charter		
		37.98441	-84.41199	Windstream		
		37.98441	-84.41199	Windstream		

Trees Blocking Midspan	394 CHILESBURG RD	37.98477	-84.41218	KU
		37.98477	-84.41218	KU
		37.98477	-84.41218	KU
		37.98477	-84.41218	Metronet
		37.98477	-84.41218	Charter
		37.98477	-84.41218	Windstream
	3660 GREEN PARK CT	37.99084	-84.43438	KU
		37.99084	-84.43438	KU
		37.99084	-84.43438	KU
		37.99084	-84.43438	KU
		37.99084	-84.43438	Metronet
		37.99084	-84.43438	Metronet
		37.99084	-84.43438	Charter
		37.99084	-84.43438	Charter
		37.99084	-84.43438	Charter
		37.99084	-84.43438	Charter
		37.99084	-84.43438	Windstream
		37.99084	-84.43438	Windstream
		37.99084	-84.43438	Windstream
		37.99084	-84.43438	Windstream
	3644 GREEN PARK CT	37.99111	-84.43461	KU
		37.99111	-84.43461	KU
		37.99111	-84.43461	KU
		37.99111	-84.43461	KU
		37.99111	-84.43461	Metronet
		37.99111	-84.43461	Charter
		37.99111	-84.43461	Charter
		37.99111	-84.43461	Windstream
		37.99111	-84.43461	Windstream
	3632 GREEN PARK CT	37.99153	-84.43503	KU
		37.99153	-84.43503	KU
		37.99153	-84.43503	KU
		37.99153	-84.43503	KU
		37.99153	-84.43503	Metronet
		37.99153	-84.43503	Charter
		37.99153	-84.43503	Charter
		37.99153	-84.43503	Windstream
		37.99153	-84.43503	Windstream
	120 SHORESIDE DR	37.99185	-84.43544	KU
		37.99185	-84.43544	KU
		37.99185	-84.43544	KU
		37.99185	-84.43544	KU
		37.99185	-84.43544	Metronet
		37.99185	-84.43544	Charter
		37.99185	-84.43544	Charter

	37.99185	-84.43544	Windstream
	37.99185	-84.43544	Windstream
120 SHORESIDE DR	37.99208	-84.43574	KU
	37.99208	-84.43574	KU
	37.99208	-84.43574	KU
	37.99208	-84.43574	KU
	37.99208	-84.43574	KU
	37.99208	-84.43574	Metronet
	37.99208	-84.43574	Charter
	37.99208	-84.43574	Charter
	37.99208	-84.43574	Windstream
	37.99208	-84.43574	Windstream
120 SHORESIDE DR	37.99234	-84.43601	KU
	37.99234	-84.43601	KU
	37.99234	-84.43601	KU
	37.99234	-84.43601	KU
	37.99234	-84.43601	KU
	37.99234	-84.43601	KU
	37.99234	-84.43601	KU
	37.99234	-84.43601	Metronet
Lower Charter	37.99234	-84.43601	Charter
Lower Charter	37.99234	-84.43601	Charter
Lower Windstream	37.99234	-84.43601	Windstream
Lower Windstream	37.99234	-84.43601	Windstream
151 SHORESIDE DR, 1:	37.99256	-84.43629	KU
	37.99256	-84.43629	KU
	37.99256	-84.43629	KU
	37.99256	-84.43629	KU
	37.99256	-84.43629	KU
	37.99256	-84.43629	KU
	37.99256	-84.43629	KU
	37.99256	-84.43629	KU
	37.99256	-84.43629	Metronet
Lower Charter	37.99256	-84.43629	Charter
Lower Charter	37.99256	-84.43629	Charter
Lower Windstream	37.99256	-84.43629	Windstream
Lower Windstream	37.99256	-84.43629	Windstream
151 SHORESIDE DR, 1:	37.99264	-84.43649	KU
	37.99264	-84.43649	KU
	37.99264	-84.43649	KU
	37.99264	-84.43649	KU
	37.99264	-84.43649	KU
	37.99264	-84.43649	KU

		37.99264	-84.43649	KU
		37.99264	-84.43649	Metronet
Lower Charter		37.99264	-84.43649	Charter
Lower Charter		37.99264	-84.43649	Charter
Lower Windstream		37.99264	-84.43649	Windstream
Lower Windstream		37.99264	-84.43649	Windstream
Trees blocking midspan	151 SHORESIDE DR, 1:	37.99281	-84.43659	KU
		37.99281	-84.43659	KU
		37.99281	-84.43659	KU
		37.99281	-84.43659	KU
		37.99281	-84.43659	KU
		37.99281	-84.43659	KU
		37.99281	-84.43659	Metronet
Lower Charter		37.99281	-84.43659	Charter
Lower Charter		37.99281	-84.43659	Charter
Lower Windstream		37.99281	-84.43659	Windstream
Lower Windstream		37.99281	-84.43659	Windstream
	151 SHORESIDE DR, 1:	37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	KU
		37.99298	-84.43688	Metronet
Lower Charter		37.99298	-84.43688	Charter
Lower Charter		37.99298	-84.43688	Charter
Lower Windstream		37.99298	-84.43688	Windstream
Lower Windstream		37.99298	-84.43688	Windstream
Lower Windstream		37.99298	-84.43688	Windstream
Lower Windstream		37.99298	-84.43688	Windstream
	100 ELLEMOOR LN	37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	KU
		37.99329	-84.43716	Metronet

Lower Charter	37.99329	-84.43716	Charter
Lower Charter	37.99329	-84.43716	Charter
Lower Windstream	37.99329	-84.43716	Windstream
Lower Windstream	37.99329	-84.43716	Windstream
Lower Windstream	37.99329	-84.43716	Windstream
Lower Windstream	37.99329	-84.43716	Windstream
101 ELLEMOOR LN	37.99345	-84.43750	KU
	37.99345	-84.43750	KU
	37.99345	-84.43750	KU
	37.99345	-84.43750	KU
	37.99345	-84.43750	Metronet
	37.99345	-84.43750	Charter
	37.99345	-84.43750	Charter
	37.99345	-84.43750	Windstream
	37.99345	-84.43750	Windstream
	37.99345	-84.43750	Windstream
	37.99345	-84.43750	Windstream
3661 SQUIRES WOOD:	37.99371	-84.43770	KU
	37.99371	-84.43770	KU
	37.99371	-84.43770	KU
	37.99371	-84.43770	KU
	37.99371	-84.43770	KU
	37.99371	-84.43770	Metronet
Lower Charter	37.99371	-84.43770	Charter
Lower Charter	37.99371	-84.43770	Charter
Lower Windstream	37.99371	-84.43770	Windstream
Lower Windstream	37.99371	-84.43770	Windstream
Lower Windstream	37.99371	-84.43770	Windstream
Lower Windstream	37.99371	-84.43770	Windstream
3661 SQUIRES WOOD:	37.99384	-84.43777	KU
	37.99384	-84.43777	KU
	37.99384	-84.43777	KU
	37.99384	-84.43777	KU
	37.99384	-84.43777	Metronet
	37.99384	-84.43777	Charter
	37.99384	-84.43777	Charter
	37.99384	-84.43777	Windstream
	37.99384	-84.43777	Windstream
	37.99384	-84.43777	Windstream
	37.99384	-84.43777	Windstream
3661 SQUIRES WOOD:	37.99390	-84.43800	KU
	37.99390	-84.43800	KU
	37.99390	-84.43800	KU

	37.99390	-84.43800	KU	
	37.99390	-84.43800	KU	
	37.99390	-84.43800	Metronet	
Lower Charter	37.99390	-84.43800	Charter	
Lower Charter	37.99390	-84.43800	Charter	
Lower Windstream	37.99390	-84.43800	Windstream	
Lower Windstream	37.99390	-84.43800	Windstream	
Lower Windstream	37.99390	-84.43800	Windstream	
Lower Windstream	37.99390	-84.43800	Windstream	
	3641 SQUIRES WOOD:	37.99407	-84.43821	KU
		37.99407	-84.43821	KU
		37.99407	-84.43821	KU
		37.99407	-84.43821	KU
		37.99407	-84.43821	Metronet
		37.99407	-84.43821	Charter
		37.99407	-84.43821	Charter
		37.99407	-84.43821	Windstream
		37.99407	-84.43821	Windstream
		37.99407	-84.43821	Windstream
		37.99407	-84.43821	Windstream
	3613 SQUIRES WOOD:	37.99441	-84.43854	KU
		37.99441	-84.43854	KU
		37.99441	-84.43854	KU
		37.99441	-84.43854	KU
Raise Secondary		37.99441	-84.43854	KU
Extend secondary riser		37.99441	-84.43854	KU
		37.99441	-84.43854	Metronet
		37.99441	-84.43854	Charter
		37.99441	-84.43854	Charter
		37.99441	-84.43854	Windstream
		37.99441	-84.43854	Windstream
		37.99441	-84.43854	Windstream
		37.99441	-84.43854	Windstream
	3581 SQUIRES WOOD:	37.99473	-84.43899	KU
		37.99473	-84.43899	KU
		37.99473	-84.43899	KU
		37.99473	-84.43899	KU
		37.99473	-84.43899	KU
		37.99473	-84.43899	KU
		37.99473	-84.43899	Metronet
Lower Charter		37.99473	-84.43899	Charter
Lower Charter		37.99473	-84.43899	Charter
Lower Windstream		37.99473	-84.43899	Windstream
Lower Windstream		37.99473	-84.43899	Windstream

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped	Y/N	Y/N
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Primary	37'8"			Y	N					D: Pedestrian Only 9.5'		
Primary	33'8"			Y	N							
Neutral	29'7"			Y	N							
Down Guy	28'11"			Y	N							
Communication		26'1"		Y	N							
Communication		25'9"		Y	N							
Communication	25'7"	24'9"	57	Y	N							
Communication	25'3"	24'5"		Y	N							
Communication	24'5"	23'6"		Y	N							
Communication	24'1"	23'3"	22'10"	Y	N							
Communication	23'3"	22'3"		Y	N							
Primary	35'9"			N	N					D: Pedestrian Only 9.5'		
Primary Riser	31'2"			N	N							
Neutral	31'1"			N	N							
Communication		24'6"		N	N							
Communication	23'6"		86	N	N							
Communication	21'11"		14'11"	N	N							
Primary	34'3"			N	N					D: Pedestrian Only 9.5'		
Neutral	26'11"			N	N							
Communication		22'6"		N	N							
Communication	21'6"		71	N	N							
Communication	19'11"		15'1"	N	N							
Primary	39'6"			N	N					D: Pedestrian Only 9.5'		
Primary	36'5"			N	N							
Neutral	33'3"			N	N							
Neutral	33'1"			N	N							
Communication		27'11"		N	N							
Communication		27'7"		N	N							
Communication	26'7"		108	N	N							
Communication	26'2"			N	N							
Communication	24'9"			N	N							
Communication	24'2"		15'11"	N	N							

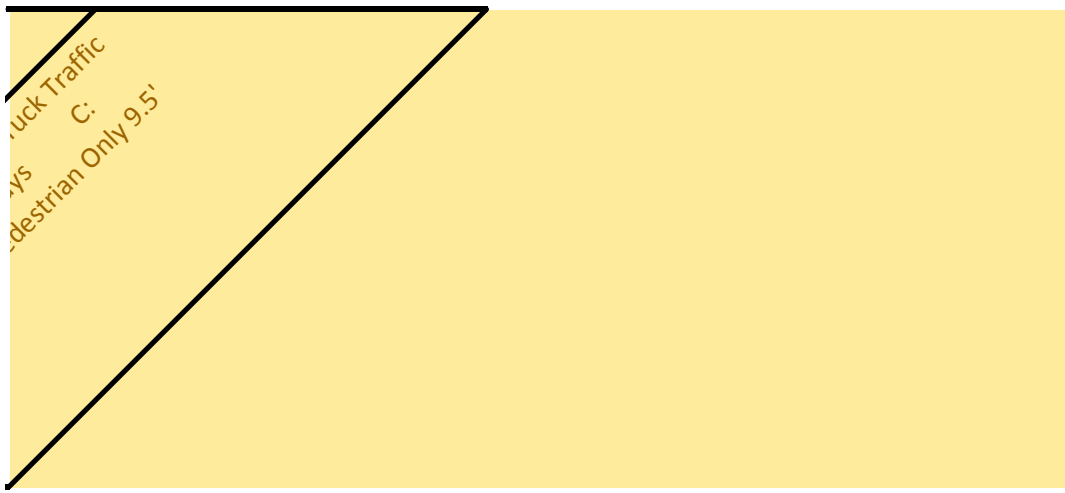
Primary	37'8"		N	N	D: Pedestrian Only 9.5'
Primary	34'1"		N	N	
Neutral	29'10"		N	N	
Communication		21'8"	N	N	
Communication	20'8"		UNK	N	N
Communication	19'5"		UNK	N	N
Primary	57'7"		Y	N	D: Pedestrian Only 9.5'
Primary	43'9"		Y	N	
Primary	41'8"		Y	N	
Neutral	40'4"		Y	N	
Communication		31'5"	Y	N	
Communication		31'1"	Y	N	
Communication	29'1"		110	Y	N
Communication	28'4"		Y	N	
Communication	27'7"		Y	N	
Communication	27'0"		Y	N	
Communication	26'6"		Y	N	
Communication	26'0"		Y	N	
Communication	25'5"		Y	N	
Communication	25'0"		20'1"	Y	N
Neutral	42'7"		N	N	D: Pedestrian Only 9.5'
Primary	41'7"		N	N	
Neutral	37'7"		N	N	
Primary	36'4"		N	N	
Communication		27'10"	N	N	
Communication	25'10"		80	N	N
Communication	24'2"		N	N	
Communication	22'10"		N	N	
Communication	21'9"		21'9"	N	N
Neutral	41'7"		N	N	D: Pedestrian Only 9.5'
Primary	41'1"		N	N	
Neutral	36'11"		N	N	
Primary	36'1"		N	N	
Communication		28'1"	N	N	
Communication	26'1"		107	N	N
Communication	24'1"		N	N	
Communication	22'10"		N	N	
Communication	21'9"		21'9"	N	N
Neutral	41'6"		N	N	D: Pedestrian Only 9.5'
Primary	40'11"		N	N	
Neutral	36'10"		N	N	
Primary	34'6"		N	N	
Communication		20'3"	N	N	
Communication	18'3"		158	N	N
Communication	16'5"		N	N	

Communication	15'5"			N	N	
Communication	14'5"	14'8"		N	N	
Neutral	41'11"			N	N	D: Pedestrian Only 9.5'
Primary	41'1"			N	N	
Neutral	33'2"			N	N	
Primary	32'4"			N	N	
Primary Riser	27'2"			N	N	
Communication		20'0"		N	N	
Communication	18'0"		128	N	N	
Communication	15'9"			N	N	
Communication	14'9"			N	N	
Communication	13'4"	17'10'		N	N	
Neutral	41'9"			Y	N	D: Pedestrian Only 9.5'
Primary	41'3"			Y	N	
Neutral	36'3"			Y	N	
Primary	35'3"			Y	N	
Secondary	28'8"			Y	N	
Transformer	28'8"			Y	N	
Secondary Drip Loop	27'3"			Y	N	
Communication		23'11"		Y	N	
Communication	24'7"	21'11"	37	Y	N	
Communication	23'6"	20'11'		Y	N	
Communication	22'4"	19'11"		Y	N	
Communication	21'3"	18'11"	21'0"	Y	N	
Neutral	37'3"			N	N	B:Residential/Over Driveways
Primary	36'4"			N	N	
Neutral	32'0"			N	N	
Primary	30'7"			N	N	
Secondary	26'4"			N	N	
Primary Riser	25'9"			N	N	
Neutral	25'4"			N	N	
Secondary Riser	25'0"			N	N	
Communication		21'8"		N	N	
Communication	21'3"	19'8"	54	N	N	
Communication	20'3"	18'8"		N	N	
Communication	19'2"	17'8"		N	N	
Communication	18'2"	16'8"	17'10"	N	N	
Neutral	43'8'					B:Residential/Over Driveways
Primary	42'8"					
Neutral	34'7"					
Primary	32'8"					
Secondary	29'1"					
Secondary Riser	28'8"					

Secondary Drip Loop	27'11"				
Communication		24'6"			
Communication	24'6"	22'6"	81		
Communication	23'5"	21'6"			
Communication	22'2"	20'6"			
Communication	21'1"	19'6"	22'10"		
Neutral	38'3"			N	N D: Pedestrian Only 9.5'
Primary	37'6"			N	N
Neutral	31'11"			N	N
Primary	30'0"			N	N
Primary Riser	24'0"			N	N
Secondary	23'9'			N	N
Communication		19'11"		N	N
Communication	19'11"	17'11"	UNK	N	N
Communication	18'4"	16'11"		N	N
Communication	17'3"	15'11"		N	N
Communication	15'11"	14'11"	UNK	N	N
Neutral	39'3'			N	N D: Pedestrian Only 9.5'
Primary	38'1"			N	N
Neutral	36'8'			N	N
Primary	35'4'			N	N
Neutral	34'8"			N	N
Primary	33'0"			N	N
Primary Riser X 3	29'10"			N	N
Neutral	28'1"			N	N
Secondary Riser	27'9"			N	N
Secondary	27'9'			N	N
Communication		24'3"		N	N
Communication	24'3'	22'4"	UNK	N	N
Communication	23'4"	21'4"		N	N
Communication	22'4"	20'4"		N	N
Communication	20'11"	19'4"		N	N
Communication	19'8"	18'4"		N	N
Communication	18'9"	17'4"	UNK	N	N
Neutral	42'5"			N	N D: Pedestrian Only 9.5'
Primary	41'7"			N	N
Neutral	36'11'			N	N
Primary	35'11"			N	N
Transformer	29'3"			N	N
Neutral	29'2"			N	N
Secondary	28'2"			N	N
Secondary Riser	27'5"			N	N
Secondary Riser	26'10"			N	N
Communication		23'6"		N	N

Communication	24'2"	21'6"	121	N	N	
Communication	23'1"	20'6"		N	N	
Communication	21'11"	19'6"		N	N	
Communication	20'6"	18'6"		N	N	
Communication	19'6"	17'6"		N	N	
Communication	18'6"	16'6"	16'5"	N	N	
Neutral	41'11"			N	N	D: Pedestrian Only 9.5'
Primary	40'9"			N	N	
Neutral	36'6"			N	N	
Primary	35'7"			N	N	
Communication		27'3"		N	N	
Communication	25'3"		125	N	N	
Communication	23'2"			N	N	
Communication	22'3"			N	N	
Communication	21'2"			N	N	
Communication	19'10"			N	N	
Communication	18'9"		18'4"	N	N	
Neutral	43'4"			Y	N	D: Pedestrian Only 9.5'
Primary	42'0"			Y	N	
Neutral	35'5"			Y	N	
Primary	34'5"			Y	N	
Primary Riser	27'11"			Y	N	
Communication		23'11"		Y	N	
Communication	23'11"	21'11"	67	Y	N	
Communication	23'1"	20'11"		Y	N	
Communication	22'0"	20'0"		Y	N	
Communication	21'0"	19'1"		Y	N	
Communication	20'0"	18'1"		Y	N	
Communication	19'1"	17'1"	19'2"	Y	N	
Neutral	43'0"			N	N	D: Pedestrian Only 9.5'
Primary	42'2"			N	N	
Neutral	37'7"			N	N	
Primary	36'7"			N	N	
Communication		27'5"		N	N	
Communication	25'5"		53	N	N	
Communication	23'5"			N	N	
Communication	22'4"			N	N	
Communication	21'1"			N	N	
Communication	19'10"			N	N	
Communication	18'11"		22'3"	N	N	
Neutral	42'1"			Y	N	D: Pedestrian Only 9.5'
Primary	41'5"			Y	N	
Neutral	33'6"			Y	N	

Primary	31'10"			Y	N	
Primary Riser	26'1"			Y	N	
Communication		22'1"		Y	N	
Communication	22'1"	20'1"	91	Y	N	
Communication	21'4"	19'2"		Y	N	
Communication	20'1"	18'2"		Y	N	
Communication	19'2"	17'3"		Y	N	
Communication	18'5"	16'3"		Y	N	
Communication	17'3"	15'3"	16'4"	Y	N	
Neutral	44'4"			Y	N	D: Pedestrian Only 9.5'
Primary	43'2"			Y	N	
Neutral	38'9"			Y	N	
Primary	37'2"			Y	N	
Communication		27'8"		Y	N	
Communication	25'8"		71	Y	N	
Communication	23'8"			Y	N	
Communication	22'8"			Y	N	
Communication	21'10"			Y	N	
Communication	20'6"			Y	N	
Communication	19'6"		13'8"	Y	N	
Neutral	42'4"			Y	N	D: Pedestrian Only 9.5'
Primary	41'11"			Y	N	
Neutral	36'6"			Y	N	
Primary	35'10"			Y	N	
Secondary	28'10"	29'11"		Y	N	
Secondary Riser	26'7"	29'5"		Y	N	
Communication		26'1"		Y	N	
Communication	24'1"		54	Y	N	
Communication	23'3"			Y	N	
Communication	22'4"			Y	N	
Communication	21'4"			Y	N	
Communication	20'3"			Y	N	
Communication	19'3"		17'9"	Y	N	
Neutral	44'9"			Y	N	D: Pedestrian Only 9.5'
Primary	43'10"			Y	N	
Neutral	39'9"			Y	N	
Primary	39'1"			Y	N	
Primary Riser	29'6"			Y	N	
Secondary	25'2"			Y	N	
Communication		21'8"		Y	N	
Communication	20'8"	19'7"	55	Y	N	
Communication	20'3"	18'7"		Y	N	
Communication	20'0"	17'6"		Y	N	
Communication	19'7"	16'6"		Y	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX-FR02-01W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: LAUREN SANDEFUR 812-213-1328
 Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 EMAIL ADDRESS: LAUREN.SANDEFUR@METRONETINC.COM
 Authorized Signature & Date: *LSandefur 3.18.18*

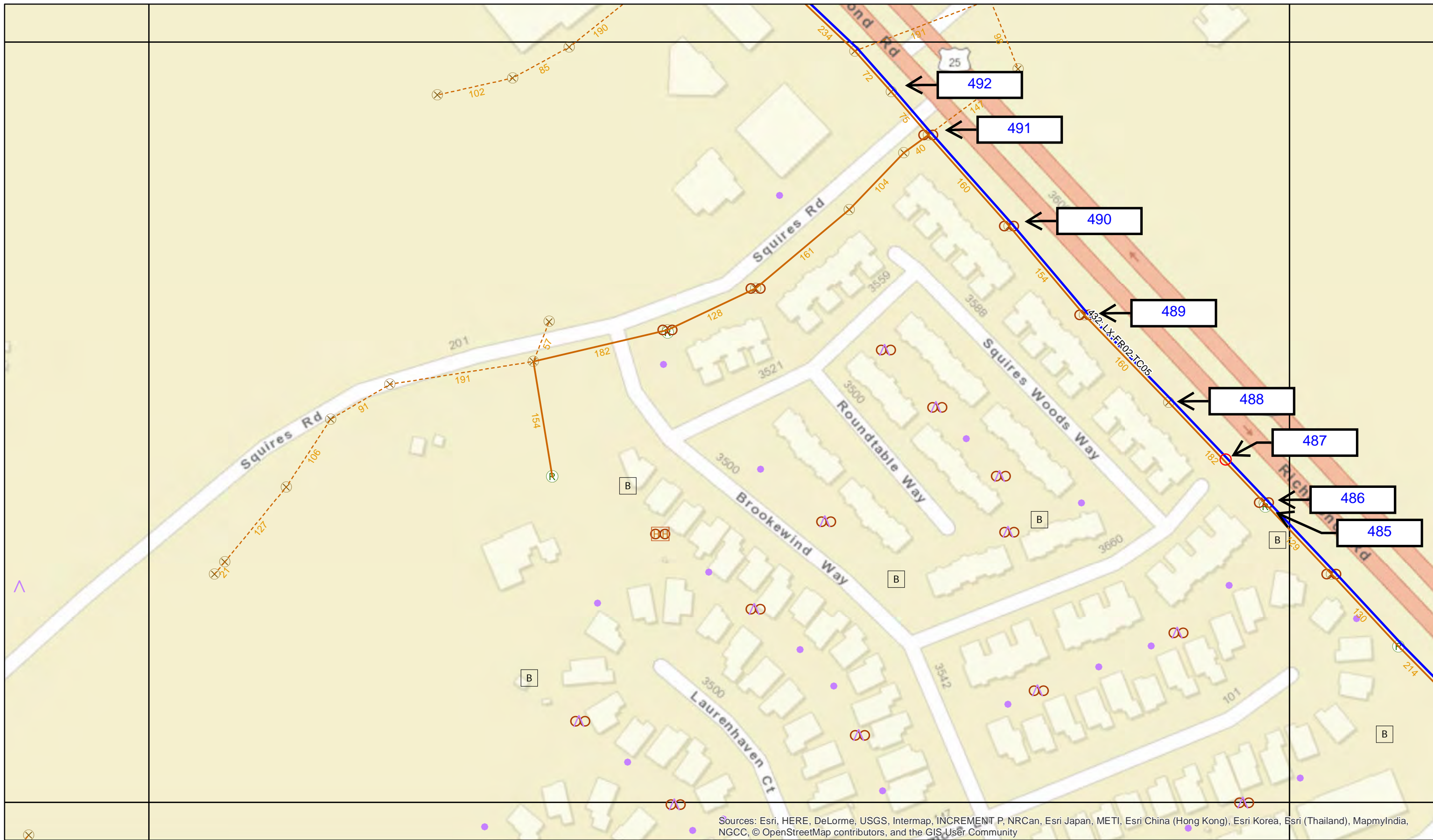
By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all ESTIMATED fees, including engineering & makeready MUST BE PAID IN FULL UP FRONT.
 NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
 NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	21661-24	408W	4232 EVANGELINE LN, Lexington, KY 40504	45, 3, WXM	24'5"	N/A	29'7"	(2)Fiber/Strand			
2	21661-23	409W	4236 EVANGELINE LN, Lexington, KY 40504	45, 3, WXM	21'11"	N/A	31'1"	(1)Fiber/Strand			
3	21661-22	410W	405 HAYS BLVD, Lexington, KY 40509	45, 3, WXM	19'11"	N/A	26'11"	(1)Fiber/Strand			
4	21661-21	411W	394 CHILESBERG RD, Lexington, KY 40509	50, 2, WXM	24'9"	N/A	33'1"	(2)Fiber/Strand			
5	21661-20	412W	394 CHILESBERG RD, Lexington, KY 40509	45, 3, WXM	19'5"	N/A	29'10"	(1)Fiber/Strand			
6	500-62	473W	3660 GREEN PARK CT, Lexington, KY 40505	65, 1, WXM	26'6"	N/A	40'4"	(2)Fiber/Strand			
7	NT	474W	3644 GREEN PARK CT, Lexington, KY 40505	50, 2, WXM	22'10"	N/A	36'4"	(1)Fiber/Strand			
8	NT	475W	3632 GREEN PARK CT, Lexington, KY 40505	50, 2, WXM	22'10"	N/A	36'0"	(1)Fiber/Strand			
9	NT	476W	120 SHORESIDE DR, Lexington, KY 40509	50, 2, WXM	15'5"	N/A	34'6"	(1)Fiber/Strand			
10	NT	477W	120 SHORESIDE DR, Lexington, KY 40509	50, 2, WXM	14'9"	N/A	27'2"	(1)Fiber/Strand			
11	NT	478W	120 SHORESIDE DR, Lexington, KY 40509	55, 2, WXM	22'4"	N/A	27'3"	(1)Fiber/Strand			
12	500-57-50	479W	151 SHORESIDE DR, 11106, Lexington, KY	45, 3, WXM	19'2"	N/A	25'0"	(1)Fiber/Strand			
13	500-57	480W	151 SHORESIDE DR, 11105, Lexington, KY	50, 2, WXM	22'2"	N/A	27'11"	(1)Fiber/Strand			
14	500-56-50	481W	151 SHORESIDE DR, 11205, Lexington, KY	50, 2, WXM	17'3"	N/A	23'9"	(1)Fiber/Strand			
15	500-56	482W	151 SHORESIDE DR, 11101, Lexington, KY	50, 1, WXM	22'4"	N/A	27'9"	(1)Fiber/Strand			
16	500-55	483W	100 ELLEMOOR LN, Lexington, KY 40509	50, 1, WXM	21'11"	N/A	26'10"	(1)Fiber/Strand			
17	800500-54	484W	101 ELLEMOOR LN, Lexington, KY 40509	50, 1, WXM	22'3"	N/A	35'7"	(1)Fiber/Strand			
18	500-53	485W	3661 SQUIRES WOODS WAY, Lexington, KY	50, 2, WXM	22'0"	N/A	27'11"	(1)Fiber/Strand			
19	800500-53	486W	3661 SQUIRES WOODS WAY, Lexington, KY	50, 2, WXM	22'4"	N/A	36'7"	(1)Fiber/Strand			

20	NT	487W	3661 SQUIRES WOODS WAY, Lexington,	50, 2, WXM	20'1"	N/A	26'1"		(1)Fiber/Strand			
21	800500-523	488W	3641 SQUIRES WOODS WAY, Lexington,	50, 1, WXM	22'8"	N/A	37'2"		(1)Fiber/Strand			
22	NT	489W	3613 SQUIRES WOODS WAY, Lexington,	50, 2, WXM	22'4"	N/A	26'7"		(1)Fiber/Strand			
23	800500-503	490W	3581 SQUIRES WOODS WAY, Lexington,	55, 1, WXM	20'0"	N/A	25'2"		(1)Fiber/Strand			
24	NT	491W	3557 SQUIRES WOODS WAY, Lexington,	55, 2, WXM	21'9"	N/A	28'0"		(1)Fiber/Strand			
25	NT	492W	3490 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	20'9"	N/A	27'7"		(1)Fiber/Strand			
ESTIMATED TOTAL COSTS												
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM												

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

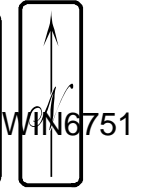
LXAL38
 PROJECT NUMBER:
 LXTNXY00497.CB
 DATE 1/16/2018
 USER NAME: arcgis
 DESIGN ENG

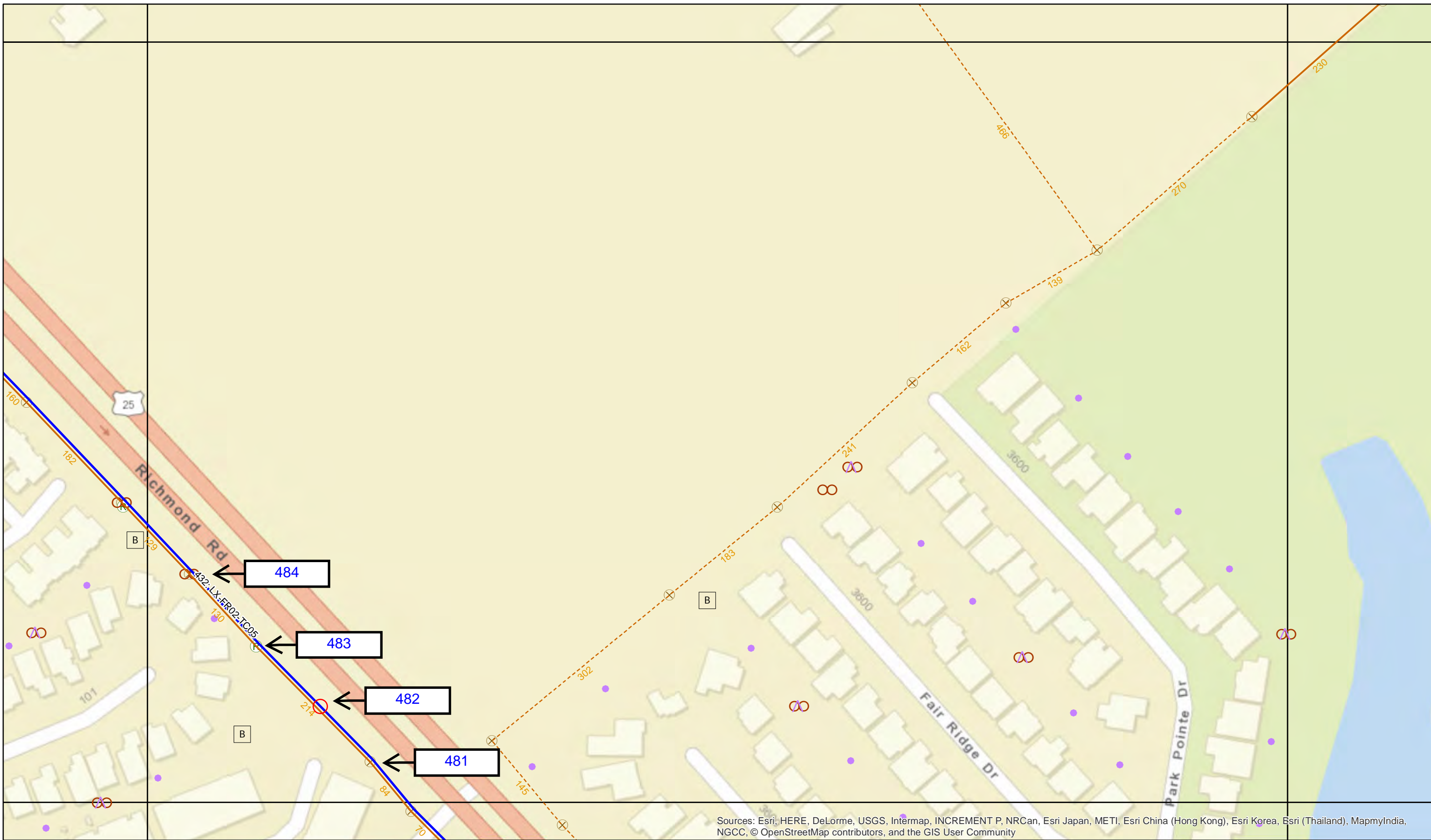
STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715





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LXAL39
 PROJECT NUMBER:
 LTXNKY00437.CB
 DATE: 1/16/2018
 USER NAME: arcgis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

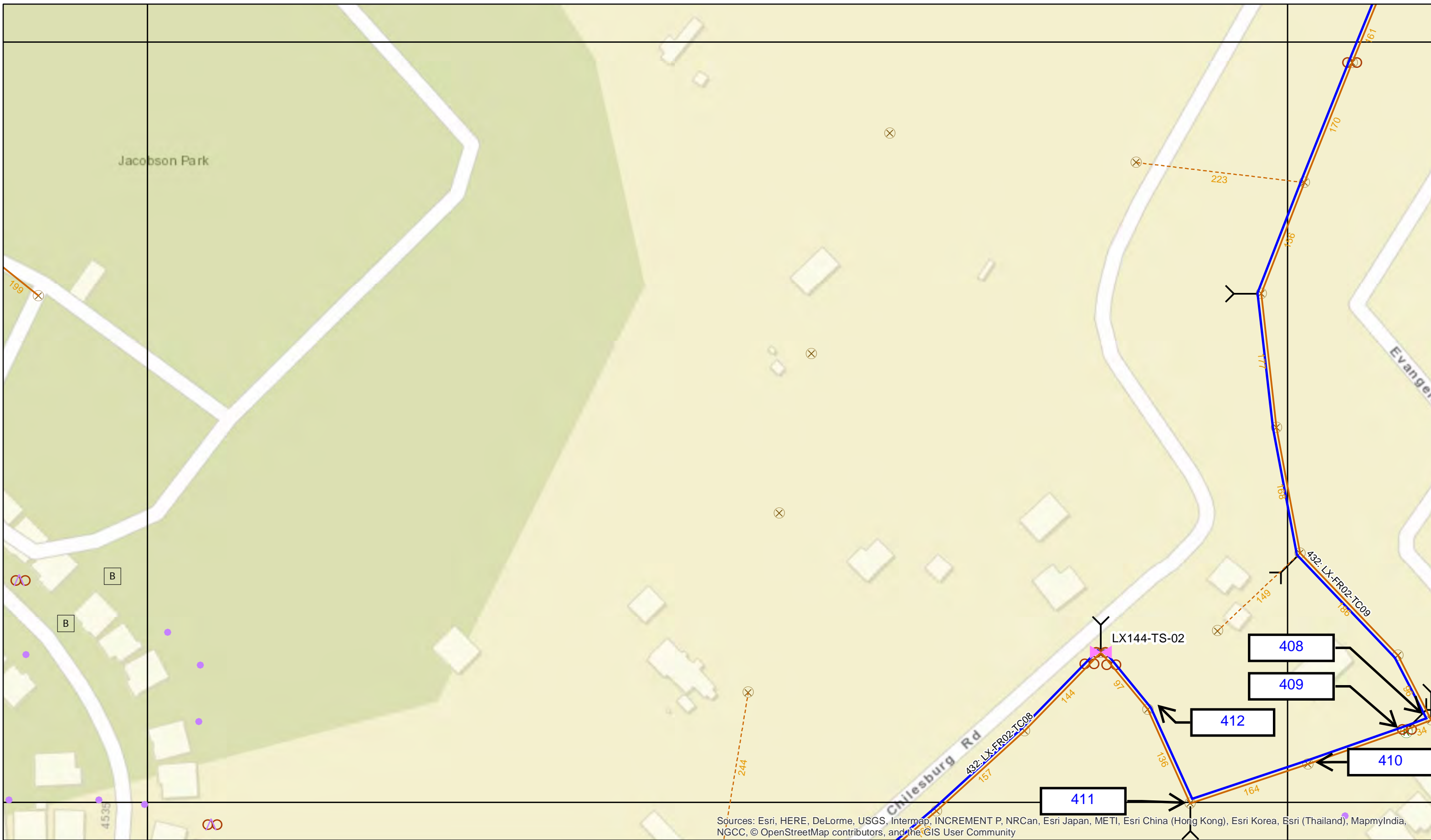
REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXA143
 PROJECT NUMBER:
 LXTNXY00497.CB
 DATE: 1/16/2018
 USER NAME: argjis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
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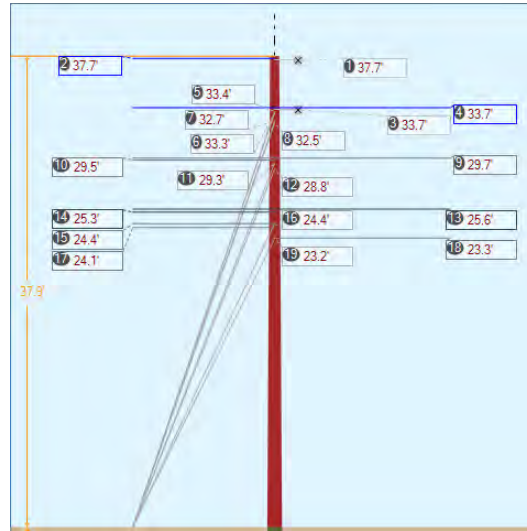
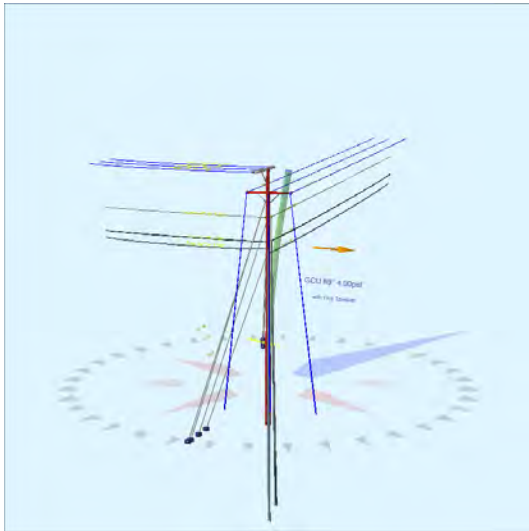
METRONET
 3701 Communications Way
 Evansville, In 47715

WIN6754

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND																																																					
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Pole Num:	408W - 21661-24	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.11	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.09	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984700 Deg	Longitude:	-84.410855 Deg	Elevation:	918.35423676064		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.3	0.0
Groundline	44.3	51.2
Vertical	48.6	30.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,342	49.5
Groundline	25,342	49.5
GL Allowable	91,523	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	34.0	156.0	33.4	38.1 55.0	69.3	38.3 60.9	48.4
? Single Helix Anchor ? EHS 3/8 (Down)	33.0	156.0	33.3	38.2 55.1	69.3	38.4 61.0	48.4
? Single Helix Anchor ? EHS 3/8 (Down)	32.0	313.0	32.7	42.9 61.9	69.3	43.0 68.2	56.9
? Single Helix Anchor ? EHS 3/8 (Down)	33.0	313.2	32.5	41.7 60.1	69.3	41.8 66.3	56.9
? Single Helix Anchor ? EHS 3/8 (Down)	30.0	156.0	29.3	38.9 56.1	69.3	39.1 62.0	50.0
? Single Helix Anchor ? EHS 3/8 (Down)	29.2	313.0	28.8	33.1 47.7	69.3	33.2 52.6	56.9
? Single Helix Anchor ? EHS 1/4 (Down)	27.0	156.0	23.3	15.0 50.1	69.3	15.1 55.6	45.6
? Single Helix Anchor ? EHS 1/4 (Down)	26.5	313.0	24.4	11.0 36.8	69.3	11.0 40.5	60.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 49.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	7,133	785.9	170,422	672.5	186.2	17,435	632	6	17,441	256.5
Comms	752	82.9	13,132	51.8	14.4	1,344	544	5	1,348	19.8
GuyBraces	-7,230	-796.6	-162,337	-640.6	-177.4	-16,608	54,817	501	-16,107	-236.9
Pole	199	21.9	2,752	10.9	3.0	282	2,194	20	302	4.4
Crossarms	33	3.6	861	3.4	0.9	88	190	2	90	1.3
Insulators	21	2.3	511	2.0	0.6	52	106	1	53	0.8
Pole Load	908	100.0	25,342	100.0	27.7	2,593	58,483	534	3,127	46.0
Pole Reserve Capacity			66,181		72.3	4,207			3,673	54.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 49.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	733	80.8	22,409	88.4	24.5	2,293	50,282	459	2,752	40.5
Unknown, COMMUNICATION	-57	-6.3	-680	-2.7	-0.7	-70	5,817	53	-16	-0.2
Pole	199	21.9	2,752	10.9	3.0	282	2,194	20	302	4.4
<Undefined>	33	3.6	861	3.4	0.9	88	190	2	90	1.3
Totals:	908	100.0	25,342	100.0	27.7	2,593	58,483	534	3,127	46.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.70	18.17	0.7200	0.02	0.462	30.7	247.2	30.7	250	-11,675	-6	-5	-11,686
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.70	48.53	0.7200	0.02	0.462	30.7	247.2	30.7	250	-11,675	-1	-5	-11,680
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.70	48.53	0.7200	0.02	0.462	30.7	247.2	30.7	250	-11,675	-4	-5	-11,684
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.73	7.21	0.7200	0.29	0.462	126.5	134.9	126.5	6,210	21,976	6	1,378	23,360
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.73	47.43	0.7200	0.29	0.462	126.5	134.9	126.5	6,210	21,976	29	1,378	23,383
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.73	43.64	0.7200	0.29	0.462	126.5	134.9	126.5	6,210	21,976	-30	1,378	23,325
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.73	18.36	0.7200	0.17	0.462	94.9	332.2	94.9	6,210	59,734	4	1,103	60,840
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.73	50.35	0.7200	0.17	0.462	94.9	332.2	94.9	6,210	59,734	21	1,103	60,858
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	33.73	46.79	0.7200	0.17	0.462	94.9	332.2	94.9	6,210	59,734	-20	1,103	60,816
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.69	6.65	0.3980	0.28	0.145	126.5	134.9	126.5	2,128	6,628	23	893	7,544
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.69	6.65	0.3980	0.17	0.145	94.9	332.2	94.9	2,128	18,016	17	714	18,747
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.54	6.65	0.3980	0.01	0.145	30.7	247.2	30.7	250	-9,146	-5	-3	-9,154
										Totals:	225,601	34	9,033	234,668	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	25.58	6.89	1.3300	1.74	0.337	126.5	134.9	126.5	925	2,482	57	1,567	4,107
CATV	CATV 1.0	Unknown, COMMUNICATION	25.58	6.89	1.3300	1.25	0.337	94.9	332.2	94.9	925	6,747	43	1,254	8,044
CATV	CATV 1.0	Unknown, COMMUNICATION	25.34	6.90	1.3300	0.37	0.337	30.7	247.2	30.7	250	-7,846	-13	-5	-7,864
Telco	TELE 1.5	Unknown, COMMUNICATION	24.41	6.96	1.5000	2.03	0.900	126.5	134.9	126.5	2,000	5,122	8	1,635	6,766
Telco	TELE 1.5	Unknown, COMMUNICATION	24.11	6.98	1.5000	0.42	0.900	30.7	247.2	30.7	250	-7,466	-23	-5	-7,494
Telco	TELE 1.5	Unknown, COMMUNICATION	23.25	7.03	1.5000	1.44	0.900	94.9	332.2	94.9	2,000	13,261	17	1,246	14,524
Totals:											12,301	88	5,693	18,082	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	37.70	5.42	247.2	247.2	50.00	4.50	3.50	96.00	-41	1,206	1,165
Normal	Crossarm	33.73	5.66	323.5	323.5	50.00	4.50	3.50	96.00	3	18	21
Totals:										-38	1,224	1,186

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.70	0.00	247.2	0.0	3.00	3.80	12.75	-8	84	75
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.70	45.00	330.3	0.0	3.00	3.80	12.75	-2	84	82
Deadend	Deadend Insulator - 15 kV KU, UTILITY	37.70	-45.00	164.1	0.0	3.00	3.80	12.75	-15	84	69
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.73	0.00	323.5	-188.7	3.00	3.80	12.75	1	75	75
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.73	45.00	46.4	-188.7	3.00	3.80	12.75	22	75	97
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.73	-45.00	240.7	-188.7	3.00	3.80	12.75	-21	75	54
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.73	0.00	323.5	8.7	3.00	3.80	12.75	2	75	76
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.73	45.00	46.4	8.7	3.00	3.80	12.75	23	75	98
Deadend	Deadend Insulator - 15 kV KU, UTILITY	33.73	-45.00	240.7	8.7	3.00	3.80	12.75	-20	75	55
Spool	Spool Insulator - 25 kV KU, UTILITY	29.69	0.00	53.5	323.5	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV KU, UTILITY	29.54	0.00	247.2	247.2	2.00	3.00	3.19	-2	13	11

Bolt	Single Bolt	Unknown, COMMUNICATION	25.58	0.00	53.5	413.5	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	25.34	0.00	247.2	337.2	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	24.41	0.00	134.9	224.9	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	24.11	0.00	247.2	337.2	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	23.25	0.00	332.2	422.2	5.00	3.00	0.00	1	0	1
Totals:										-21	725	704

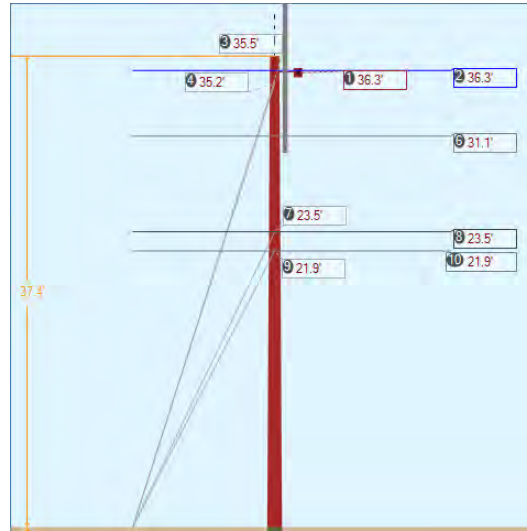
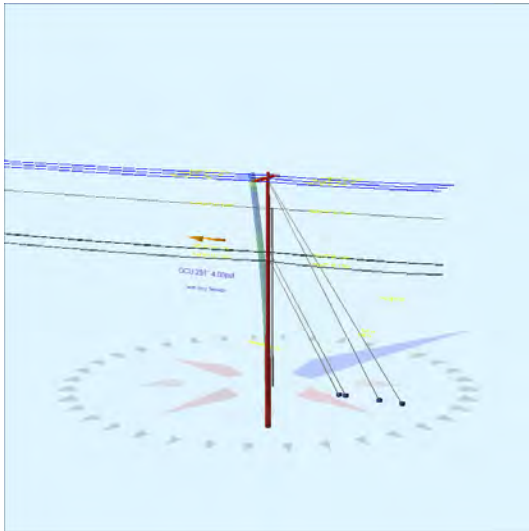
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	33.43	0.00	34.00	0.375	75.00	156.0	44.4	0.273	45.95	2.21
EHS 3/8	Down	KU, UTILITY	33.34	0.00	33.00	0.375	75.00	156.0	45.2	0.273	45.18	2.18
EHS 3/8	Down	KU, UTILITY	32.65	0.00	31.96	0.375	75.00	313.0	45.5	0.273	43.96	2.38
EHS 3/8	Down	KU, UTILITY	32.49	0.00	33.00	0.375	75.00	313.2	44.4	0.273	44.57	2.34
EHS 3/8	Down	KU, UTILITY	29.29	0.00	30.00	0.375	75.00	156.0	44.2	0.273	40.18	1.97
EHS 3/8	Down	KU, UTILITY	28.82	0.00	29.19	0.375	75.00	313.0	44.5	0.273	39.27	1.64
EHS 1/4	Down	Unknown, COMMUNICATION	23.25	0.00	27.00	0.25	75.00	156.0	40.6	0.121	33.85	1.44
EHS 1/4	Down	Unknown, COMMUNICATION	24.41	0.00	26.48	0.25	75.00	313.0	42.5	0.121	34.24	1.07

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,436	7,669	7,626	5,333	5,451	-1,545	-50,915
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,455	7,686	7,643	5,419	5,390	-1,528	-50,199
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,453	8,594	8,577	6,115	6,015	-684	-21,823
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,186	8,351	8,335	5,833	5,953	-658	-20,895
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,592	7,811	7,769	5,415	5,572	-1,580	-45,617
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,292	6,629	6,615	4,636	4,719	-537	-15,070
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,327	3,024	2,998	1,952	2,276	-645	-14,722
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,423	2,203	2,200	1,488	1,621	-184	-4,294
Totals:										36,189	36,997	-7,362	-223,534

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	34.00	156.0	20,000	1.00	20,000	7,669	7,626	38.3
Single Helix Anchor		18.00	33.00	156.0	20,000	1.00	20,000	7,686	7,643	38.4
Single Helix Anchor		18.00	31.96	313.0	20,000	1.00	20,000	8,594	8,577	43.0
Single Helix Anchor		18.00	33.00	313.2	20,000	1.00	20,000	8,351	8,335	41.8
Single Helix Anchor		18.00	30.00	156.0	20,000	1.00	20,000	7,811	7,769	39.1
Single Helix Anchor		18.00	29.19	313.0	20,000	1.00	20,000	6,629	6,615	33.1
Single Helix Anchor		18.00	27.00	156.0	20,000	1.00	20,000	3,024	2,998	15.1
Single Helix Anchor		18.00	26.48	313.0	20,000	1.00	20,000	2,203	2,200	11.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.70	34.62	10.55	39.61	7.32	11.81	1.60e+6	60.00	57.00	37.89	120,213	1203.35	2.06

Pole Num:	409W - 21661-23	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.59	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984738 Deg	Longitude:	-84.411079 Deg	Elevation:	907.975503976818		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.7	35.7
Groundline	31.4	0.0
Vertical	39.8	32.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	7,406	251.0
Groundline	12,095	205.6
GL Allowable	90,211	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	25.1	72.0	35.5	60.3	251.2	60.3	256.9
? Single Helix Anchor ? EHS 3/8 (Down)	21.0	72.0	35.2	56.3	251.2	56.3	256.9
? Single Helix Anchor ? EHS 3/8 (Down)	14.8	72.0	23.5	81.2	251.2	89.3	256.9
? Single Helix Anchor ? EHS 1/4 (Down)	13.5	72.0	22.0	18.4	251.2	18.4	260.0
? Single Helix Anchor ? EHS 1/4 (Down)				61.4	251.2	67.5	260.0
? Single Helix Anchor ? EHS 1/4 (Down)				17.2	251.2	17.2	260.0
				57.4	251.2	63.2	260.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 205.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	9,808	973.9	116,793	965.6	129.5	26,142	432	4	26,145	384.5
Comms	2,194	217.8	16,476	136.2	18.3	3,688	372	3	3,691	54.3
GuyBraces	-11,223	-1114.4	-122,857	-1015.8	-136.2	-27,499	38,541	356	-27,143	-399.2
Pole	145	14.4	922	7.6	1.0	206	2,153	20	226	3.3
Crossarms	24	2.4	308	2.6	0.3	69	95	1	70	1.0
Risers	48	4.8	328	2.7	0.4	73	59	1	74	1.1
Insulators	10	1.0	124	1.0	0.1	28	57	1	28	0.4
Pole Load	1,007	100.0	12,095	100.0	13.4	2,707	41,709	385	3,092	45.5
Pole Reserve Capacity			78,116		86.6	4,093			3,708	54.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 205.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,191	118.2	13,904	115.0	15.4	3,112	29,949	276	3,388	49.8
Unknown, COMMUNICATION	-353	-35.1	-3,039	-25.1	-3.4	-680	9,513	88	-592	-8.7
Pole	145	14.4	922	7.6	1.0	206	2,153	20	226	3.3
<Undefined>	24	2.4	308	2.6	0.3	69	95	1	70	1.0
Totals:	1,007	100.0	12,095	100.0	13.4	2,707	41,709	385	3,092	45.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.26	7.28	0.7200	0.02	0.462	30.7	67.2	30.7	250	-8,808	-5	-19	-8,832
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.26	45.97	0.7200	0.02	0.462	30.7	67.2	30.7	250	-8,808	-5	-19	-8,833
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.26	45.20	0.7200	0.02	0.462	30.7	67.2	30.7	250	-8,808	4	-19	-8,823
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.26	18.23	0.7200	0.96	0.462	141.8	250.7	141.8	3,210	106,753	23	-12	106,763
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.26	48.91	0.7200	0.96	0.462	141.8	250.7	141.8	3,210	106,753	-12	-12	106,728
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.26	48.19	0.7200	0.96	0.462	141.8	250.7	141.8	3,210	106,753	29	-12	106,769
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.06	6.54	0.3980	0.01	0.145	30.7	67.2	30.7	250	-7,544	-4	-12	-7,560
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.06	6.54	0.3980	0.28	0.145	141.8	250.7	141.8	2,128	60,613	-17	-8	60,588
										Totals:	346,901	12	-113	346,800	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.48	6.98	1.3300	0.37	0.337	30.7	67.2	30.7	250	-5,703	-10	-18	-5,731
CATV	CATV 1.0	Unknown, COMMUNICATION	23.48	6.98	1.3300	1.98	0.337	141.8	250.7	141.8	925	19,916	-45	-12	19,860
Telco	TELE 1.5	Unknown, COMMUNICATION	21.95	7.08	1.5000	0.42	0.900	30.7	67.2	30.7	250	-5,331	-17	-18	-5,366

Telco	TELE 1.5	Unknown,	21.95	7.08	1.5000	2.33	0.900	141.8	250.7	141.8	2,000	40,251	-79	-12	40,160		
COMMUNICATION													Totals:	49,134	-150	-61	48,923

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	36.26	5.48	248.9	248.9	50.00	4.50	3.50	96.00	32	884	915
Totals:										32	884	915

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	31.20	6.09	360.0	360.0	31.20	374.39	4.00	4.00	374.39	-28	1,002	974	
KU, UTILITY											Totals:	-28	1,002	974

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	36.26	0.00	248.9	-181.8	3.00	3.80	12.75	-3	60	57	
Deadend	Deadend Insulator - 15 kV	36.26	45.00	332.0	-181.8	3.00	3.80	12.75	-17	60	42	
Deadend	Deadend Insulator - 15 kV	36.26	-45.00	165.9	-181.8	3.00	3.80	12.75	12	60	72	
Deadend	Deadend Insulator - 15 kV	36.26	0.00	248.9	1.7	3.00	3.80	12.75	6	60	66	
Deadend	Deadend Insulator - 15 kV	36.26	45.00	332.0	1.7	3.00	3.80	12.75	-9	60	51	
Deadend	Deadend Insulator - 15 kV	36.26	-45.00	165.9	1.7	3.00	3.80	12.75	21	60	81	
Spool	Spool Insulator - 25 kV	31.06	0.00	338.9	248.9	2.00	3.00	3.19	-1	10	9	
Bolt	Three Bolt	23.48	0.00	338.9	248.9	5.00	3.00	0.00	-4	0	-4	
Bolt	Three Bolt	21.95	0.00	338.9	248.9	5.00	3.00	0.00	-4	0	-4	
Totals:										2	368	370

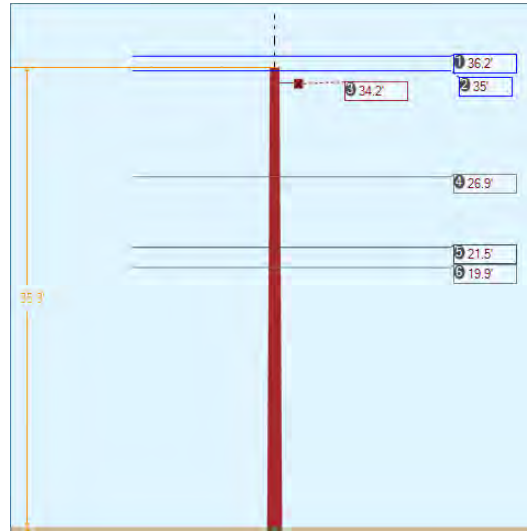
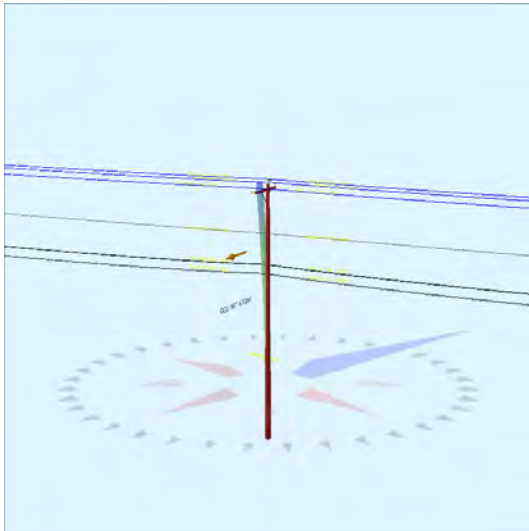
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	35.49	0.00	25.07	0.375	75.00	72.0	54.6	0.273	41.77	3.17
EHS 3/8	Down	KU, UTILITY	35.23	0.00	20.96	0.375	75.00	72.0	59.0	0.273	39.33	2.79
EHS 1/4	Down	Unknown, COMMUNICATION	23.48	0.00	14.84	0.25	75.00	72.0	57.5	0.121	26.08	1.36
EHS 1/4	Down	Unknown, COMMUNICATION	21.95	0.00	13.54	0.25	75.00	72.0	58.1	0.121	24.09	1.17

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	13,261	12,056	12,055	9,823	6,988	-4,816	-168,713
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,378	11,253	11,253	9,649	5,789	-3,990	-138,153
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,041	3,673	3,672	3,097	1,973	-1,360	-31,187
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,783	3,439	3,437	2,919	1,815	-1,251	-26,751
Totals:										25,489	16,565	-11,417	-364,804

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	25.07	72.0	20,000	1.00	20,000	12,056	12,055	60.3
Single Helix Anchor			18.00	20.96	72.0	20,000	1.00	20,000	11,253	11,253	56.3
Single Helix Anchor			18.00	14.84	72.0	20,000	1.00	20,000	3,673	3,672	18.4
Single Helix Anchor			18.00	13.54	72.0	20,000	1.00	20,000	3,439	3,437	17.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	32.10	34.85	10.42	34.22	7.32	11.75	1.60e+6	60.00	57.00	37.41	104,842	1047.98	2.51

Pole Num:	410W - 21661-22	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.71	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.12	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984609 Deg	Longitude:	-84.411476 Deg	Elevation:	907.748302239432		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	34.7	0.0
Groundline	34.7	0.0
Vertical	12.2	22.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	28,925	160.9
Groundline	28,925	160.9
GL Allowable	84,556	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 160.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	511	47.7	17,365	60.0	20.5	1,392	730	7	1,399	20.6
Comms	356	33.3	7,749	26.8	9.2	621	629	6	627	9.2
Pole	194	18.1	3,489	12.1	4.1	280	1,975	19	299	4.4
Crossarms	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Insulators	8	0.7	279	1.0	0.3	22	70	1	23	0.3
Pole Load	1,069	100.0	28,925	100.0	34.2	2,319	3,499	34	2,352	34.6
Pole Reserve Capacity			55,631		65.8	4,481			4,448	65.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 160.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	518	48.5	17,633	61.0	20.9	1,414	781	8	1,421	20.9
Unknown, COMMUNICATION	356	33.3	7,760	26.8	9.2	622	648	6	628	9.2
Pole	194	18.1	3,489	12.1	4.1	280	1,975	19	299	4.4
<Undefined>	1	0.1	43	0.2	0.1	3	95	1	4	0.1
Totals:	1,069	100.0	28,925	100.0	34.2	2,319	3,499	34	2,352	34.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.17	0.00	0.7200	1.09	0.462	149.6	250.1	149.6	3,210	1,716	0	1,927	3,642
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.17	0.00	0.7200	1.01	0.462	141.8	70.7	141.8	3,210	-499	0	1,826	1,327
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.04	45.33	0.7200	1.09	0.462	149.6	250.1	149.6	3,210	1,662	-406	1,867	3,123
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.04	45.33	0.7200	1.01	0.462	141.8	70.7	141.8	3,210	-484	-385	1,770	901
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.04	45.33	0.7200	1.01	0.462	141.8	70.7	141.8	3,210	-484	386	1,770	1,673
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.04	45.33	0.7200	1.09	0.462	149.6	250.1	149.6	3,210	1,662	408	1,867	3,937
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.91	6.66	0.3980	0.37	0.145	141.8	70.7	141.8	2,128	-246	26	999	779

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.91	6.66	0.3980	0.42	0.145	149.6	250.1	149.6	2,128	845	27	1,054	1,927
											Totals:	4,174	56	13,080	17,310

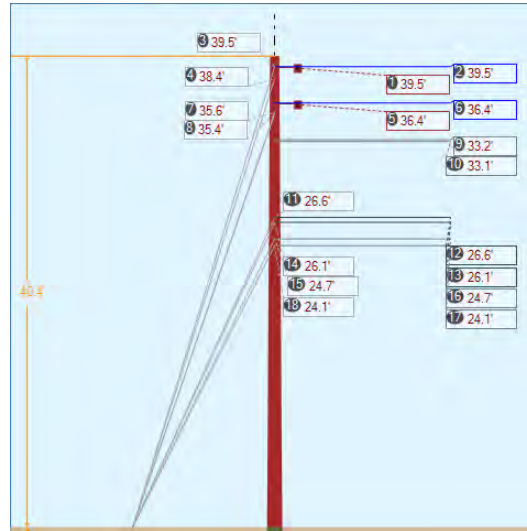
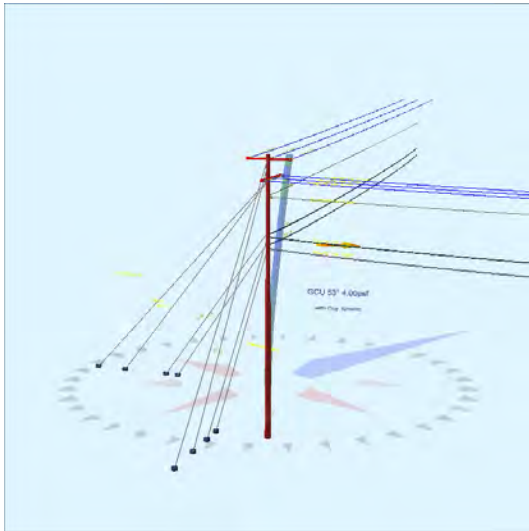
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.49	6.98	1.3300	2.00	0.337	141.8	70.7	141.8	925	-85	65	1,626	1,606
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	21.49	6.98	1.3300	2.14	0.337	149.6	250.1	149.6	925	293	68	1,716	2,077
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.93	7.07	1.5000	2.35	0.900	141.8	70.7	141.8	2,000	-171	115	1,649	1,592
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.93	7.07	1.5000	2.52	0.900	149.6	250.1	149.6	2,000	589	121	1,739	2,449
		COMMUNICATION													
											Totals:	626	369	6,730	7,724

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	34.23	5.47	250.1	250.1	50.00	4.50	3.50	96.00	1	42	43		
											Totals:	1	42	43

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Pin	Pin Insulator - 22 kV	KU, UTILITY	35.29	0.00	0.0	0.0	13.00	9.00	10.50	0	164	164		
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.42	45.00	333.2	0.0	6.00	3.50	7.50	-43	44	1		
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.42	-45.00	167.1	0.0	6.00	3.50	7.50	43	44	87		
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.91	0.00	160.4	70.4	2.00	3.00	3.19	2	13	15		
Bolt	Three Bolt	Unknown, COMMUNICATION	21.49	0.00	160.4	70.4	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	19.93	0.00	160.4	70.4	5.00	3.00	0.00	6	0	6		
											Totals:	13	265	278

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.43	33.46	10.61	14.46	7.32	11.50	1.60e+6	60.00	57.00	35.29	28,794	286.80	8.20

Pole Num:	411W - 21661-21	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.60	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.61	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984412 Deg	Longitude:	-84.411987 Deg	Elevation:	905.281145370256		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.9	35.7
Groundline	13.0	0.0
Vertical	44.7	34.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	9,616	73.7
Groundline	15,499	29.4
GL Allowable	120,157	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 7/16 (Down)	45.9	152.0	39.5	45.4	52.7	45.9	340.0
? Single Helix Anchor ? EHS 7/16 (Down)	38.1	152.0	38.4	46.1	52.7	46.8	340.0
? Single Helix Anchor ? EHS 7/16 (Down)	33.5	247.0	35.6	49.3	52.7	55.0	340.0
? Single Helix Anchor ? EHS 7/16 (Down)	28.1	247.0	26.6	55.2	52.7	55.2	56.9
? Single Helix Anchor ? EHS 7/16 (Down)	19.8	247.0	26.2	58.9	52.7	64.8	56.9
? Single Helix Anchor ? EHS 1/4 (Down)	31.9	152.0	24.7	53.9	52.7	53.9	56.9
? Single Helix Anchor ? EHS 1/4 (Down)	17.5	247.0	24.2	57.6	52.7	63.4	56.9
? Single Helix Anchor ? EHS 1/4 (Down)	27.7	152.0		15.3	52.7	15.3	56.9
? Single Helix Anchor ? EHS 1/4 (Down)				51.0	52.7	56.1	56.9
? Single Helix Anchor ? EHS 1/4 (Down)				13.7	52.7	14.4	340.0
? Single Helix Anchor ? EHS 1/4 (Down)				45.9	52.7	52.8	340.0
? Single Helix Anchor ? EHS 1/4 (Down)				14.8	52.7	14.8	56.9
? Single Helix Anchor ? EHS 1/4 (Down)				49.4	52.7	54.3	56.9
? Single Helix Anchor ? EHS 1/4 (Down)				13.1	52.7	13.8	340.0
? Single Helix Anchor ? EHS 1/4 (Down)				43.9	52.7	50.7	340.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 29.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	19,481	1275.7	221,115	1426.6	184.0	40,721	729	6	40,726	598.9
Comms	5,087	333.1	39,177	252.8	32.6	7,215	628	5	7,220	106.2
GuyBraces	-23,310	-1526.4	-246,712	-1591.8	-205.3	-45,435	56,341	429	-45,005	-661.8
Pole	226	14.8	1,401	9.0	1.2	258	2,791	21	279	4.1
Crossarms	29	1.9	342	2.2	0.3	63	190	1	64	0.9
Insulators	14	0.9	176	1.1	0.2	32	80	1	33	0.5
Pole Load	1,527	100.0	15,499	100.0	12.9	2,854	60,759	463	3,317	48.8
Pole Reserve Capacity			104,658		87.1	3,946			3,483	51.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 29.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,125	73.6	13,219	85.3	11.0	2,434	44,496	339	2,774	40.8
Unknown, COMMUNICATION	148	9.7	537	3.5	0.5	99	13,283	101	200	2.9
Pole	226	14.8	1,401	9.0	1.2	258	2,791	21	279	4.1
<Undefined>	29	1.9	342	2.2	0.3	63	190	1	64	0.9
Totals:	1,527	100.0	15,499	100.0	12.9	2,854	60,759	463	3,317	48.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.49	18.53	0.7200	1.01	0.462	142.2	331.1	142.2	3,210	86,540	18	1,682	88,241
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.49	48.67	0.7200	1.01	0.462	142.2	331.1	142.2	3,210	86,540	34	1,682	88,257
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.49	48.67	0.7200	1.01	0.462	142.2	331.1	142.2	3,210	86,540	-20	1,682	88,202
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.38	18.73	0.7200	1.03	0.462	148.8	69.1	148.8	3,210	116,830	29	348	117,207
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.38	48.74	0.7200	1.03	0.462	148.8	69.1	148.8	3,210	116,830	-11	348	117,167
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.38	48.74	0.7200	1.03	0.462	148.8	69.1	148.8	3,210	116,830	34	348	117,212
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.23	6.92	0.3980	0.47	0.145	142.2	331.1	142.2	1,828	41,467	14	1,042	42,523
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	33.06	6.93	0.3980	0.40	0.145	148.8	69.1	148.8	1,828	60,474	22	233	60,729
										Totals:	712,052	120	7,366	719,538	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	26.56	7.33	1.3300	2.01	0.337	142.2	331.1	142.2	925	16,773	36	1,697	18,507
CATV	CATV 1.0	Unknown, COMMUNICATION	26.15	7.36	1.3300	2.10	0.337	148.8	69.1	148.8	925	24,199	55	375	24,630
Telco	TELE 1.5	Unknown, COMMUNICATION	24.73	7.44	1.5000	2.36	0.900	142.2	331.1	142.3	2,000	33,764	64	1,727	35,555

Telco	TELE 1.5	Unknown,	24.15	7.48	1.5000	2.48	0.900	148.8	69.1	148.8	2,000	48,321	98	379	48,797
COMMUNICATION												Totals: 123,058 253 4,179 127,489			

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	39.49	5.78	331.1	331.1	50.00	4.50	3.50	96.00	24	143	167
Normal	Crossarm	36.38	5.98	69.1	69.1	50.00	4.50	3.50	96.00	36	910	947
Totals:										60	1,053	1,113

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	39.49	0.00	331.1	0.0	3.00	3.80	12.75	5	85	90	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	39.49	45.00	53.8	0.0	3.00	3.80	12.75	23	85	108	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	39.49	-45.00	248.4	0.0	3.00	3.80	12.75	-14	85	72	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	36.38	0.00	69.1	0.0	3.00	3.80	12.75	7	79	86	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	36.38	45.00	151.5	0.0	3.00	3.80	12.75	-7	79	72	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	36.38	-45.00	346.7	0.0	3.00	3.80	12.75	20	79	99	
Spool	Spool Insulator - 25 kV KU, UTILITY	33.23	0.00	331.1	331.1	2.00	3.00	3.19	1	14	15	
Spool	Spool Insulator - 25 kV KU, UTILITY	33.06	0.00	69.1	69.1	2.00	3.00	3.19	2	14	16	
Bolt	Three Bolt Unknown, COMMUNICATION	26.56	0.00	331.1	331.1	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt Unknown, COMMUNICATION	26.15	0.00	69.1	69.1	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt Unknown, COMMUNICATION	24.73	0.00	331.1	331.1	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt Unknown, COMMUNICATION	24.15	0.00	69.1	69.1	5.00	3.00	0.00	5	0	5	
Totals:										52	521	573

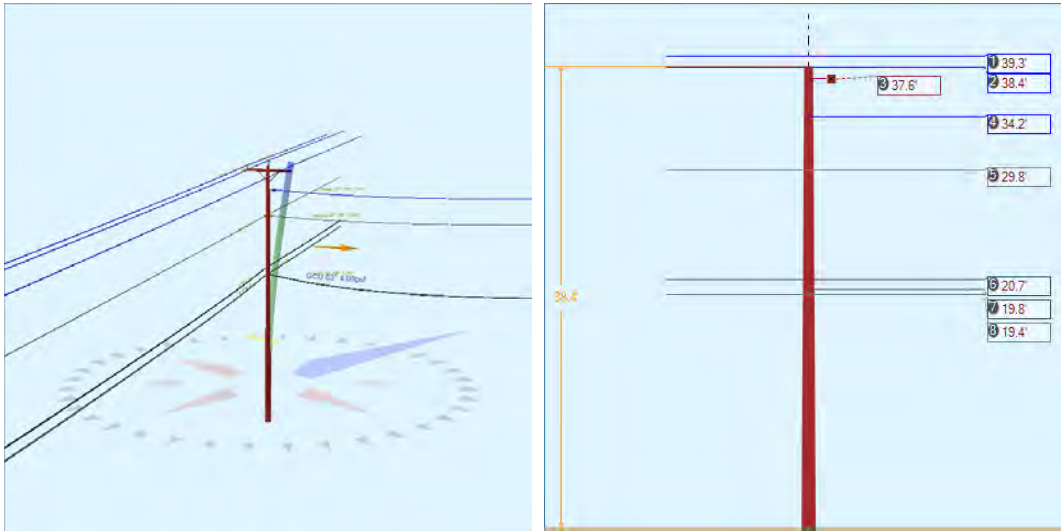
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 7/16	Down	KU, UTILITY	39.49	0.00	45.88	0.438	75.00	152.0	40.6	0.399	58.78	2.47
EHS 7/16	Down	KU, UTILITY	38.44	0.00	38.05	0.438	75.00	152.0	45.1	0.399	52.35	2.24
EHS 7/16	Down	KU, UTILITY	35.58	0.00	33.54	0.438	75.00	247.0	46.5	0.399	47.16	2.41
EHS 7/16	Down	KU, UTILITY	35.42	0.00	28.05	0.438	75.00	247.0	51.4	0.399	43.46	2.17
EHS 1/4	Down	Unknown, COMMUNICATION	26.56	0.00	19.78	0.25	75.00	247.0	53.1	0.121	31.38	1.36
EHS 1/4	Down	Unknown, COMMUNICATION	26.15	0.00	31.90	0.25	75.00	152.0	39.2	0.121	39.43	1.54
EHS 1/4	Down	Unknown, COMMUNICATION	24.73	0.00	17.47	0.25	75.00	247.0	54.6	0.121	28.54	1.20
EHS 1/4	Down	Unknown, COMMUNICATION	24.15	0.00	27.71	0.25	75.00	152.0	40.9	0.121	34.94	1.30

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	10,094	9,176	9,072	5,903	6,889	-3,709	-145,224
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	10,302	9,365	9,225	6,540	6,507	-3,503	-133,257
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	12,139	11,036	11,035	8,009	7,590	-6,016	-212,196
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	11,862	10,784	10,783	8,432	6,721	-5,327	-186,402
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,359	3,054	3,053	2,443	1,831	-1,452	-37,874
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,161	2,874	2,747	1,737	2,128	-1,146	-29,573
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,252	2,957	2,956	2,409	1,714	-1,358	-32,896
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,034	2,758	2,625	1,720	1,983	-1,068	-25,415
Totals:										37,193	35,363	-23,578	-802,836

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	45.88	152.0	20,000	1.00	20,000	9,176	9,072	45.9
Single Helix Anchor		18.00	38.05	152.0	20,000	1.00	20,000	9,365	9,225	46.8
Single Helix Anchor		18.00	33.54	247.0	20,000	1.00	20,000	11,036	11,035	55.2
Single Helix Anchor		18.00	28.05	247.0	20,000	1.00	20,000	10,784	10,783	53.9
Single Helix Anchor		18.00	19.78	247.0	20,000	1.00	20,000	3,053	3,053	15.3
Single Helix Anchor		18.00	31.90	152.0	20,000	1.00	20,000	2,874	2,747	14.4
Single Helix Anchor		18.00	17.47	247.0	20,000	1.00	20,000	2,957	2,956	14.8
Single Helix Anchor		18.00	27.71	152.0	20,000	1.00	20,000	2,758	2,625	13.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	34.11	34.87	11.46	42.57	7.96	12.93	1.60e+6	60.00	57.00	40.40	135,834	1359.26	2.24

Pole Num:	412W - 21661-20	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.57	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.29	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984765 Deg	Longitude:	-84.412185 Deg	Elevation:	897.387153454888		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.4	62.7
Groundline	37.4	62.7
Vertical	11.0	62.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,377	62.7
Groundline	34,377	62.7
GL Allowable	93,018	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 55.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	639	50.9	22,229	64.7	23.9	1,621	585	5	1,626	23.9
Comms	392	31.2	7,584	22.1	8.2	553	534	5	558	8.2
Pole	214	17.0	4,135	12.0	4.5	302	2,241	20	322	4.7
Crossarms	1	0.1	48	0.1	0.1	4	95	1	4	0.1
Insulators	10	0.8	381	1.1	0.4	28	89	1	29	0.4
Pole Load	1,255	100.0	34,377	100.0	37.0	2,506	3,545	32	2,538	37.3
Pole Reserve Capacity			58,641		63.0	4,294			4,262	62.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 55.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	649	51.7	22,619	65.8	24.3	1,649	646	6	1,655	24.3
Unknown, COMMUNICATION	392	31.2	7,575	22.0	8.1	552	563	5	557	8.2
Pole	214	17.0	4,135	12.0	4.5	302	2,241	20	322	4.7
<Undefined>	1	0.1	48	0.1	0.1	4	95	1	4	0.1
Totals:	1,255	100.0	34,377	100.0	37.0	2,506	3,545	32	2,538	37.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.30	0.00	0.7200	0.24	0.462	54.8	331.5	54.8	3,210	12,257	0	763	13,020
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.30	0.00	0.7200	1.01	0.462	142.2	151.1	142.2	3,210	-11,379	0	1,982	-9,398
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.37	45.33	0.7200	0.24	0.462	54.8	331.5	54.8	3,210	11,965	150	745	12,861
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.37	45.33	0.7200	1.01	0.462	142.2	151.1	142.2	3,210	-11,108	390	1,935	-8,784
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.37	45.33	0.7200	0.24	0.462	54.8	331.5	54.8	3,210	11,965	-147	745	12,564
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.37	45.33	0.7200	1.01	0.462	142.2	151.1	142.2	3,210	-11,108	-380	1,935	-9,554
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.25	16.66	0.3980	0.27	0.145	138.6	40.0	138.8	150	4,940	14	131	5,086

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.81	6.67	0.3980	0.27	0.145	138.6	40.0	138.8	150	4,299	24	114	4,438
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.81	6.67	0.3980	0.38	0.145	142.2	151.1	142.2	2,128	-5,717	-25	1,105	-4,637
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.81	6.67	0.3980	0.06	0.145	54.8	331.5	54.8	2,128	6,158	-10	426	6,574
Totals:											12,271	17	9,882	22,170	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.66	7.21	1.3300	2.01	0.337	142.2	151.1	142.2	925	-1,722	-67	1,561	-228
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.66	7.21	1.3300	0.68	0.337	54.8	331.5	54.8	925	1,855	-26	601	2,430
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	19.83	7.26	1.3300	1.92	0.337	138.6	40.0	139.4	150	2,861	18	155	3,034
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.42	7.29	1.5000	2.36	0.900	142.2	151.1	142.3	2,000	-3,500	-118	1,604	-2,014
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.42	7.29	1.5000	0.78	0.900	54.8	331.5	54.8	2,000	3,770	-45	618	4,342
		COMMUNICATION													
Totals:											3,264	-238	4,539	7,564	

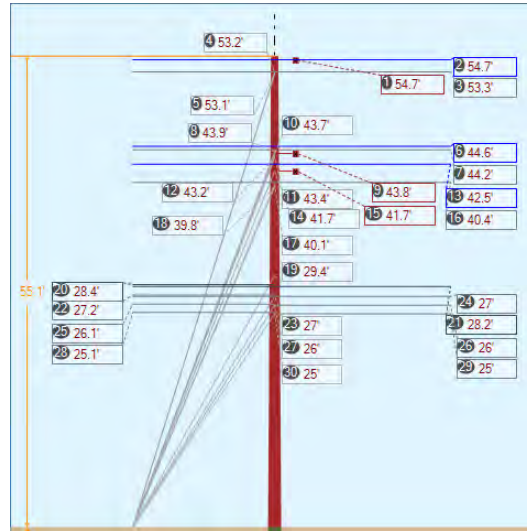
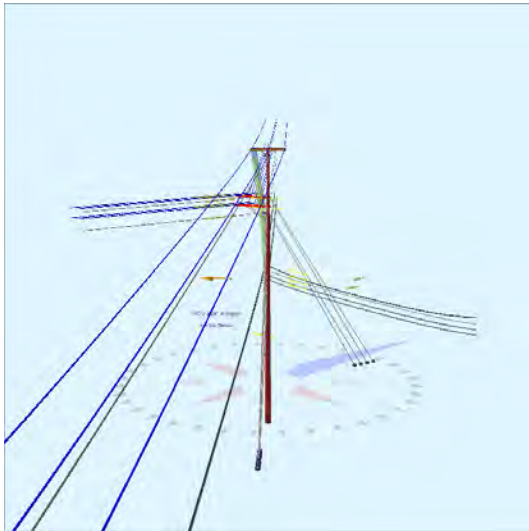
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	37.55	5.46	331.5	331.5	50.00	4.50	3.50	96.00	4	43	48	
Totals:											4	43	48

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.43	0.00	0.0	0.0	13.00	9.00	10.50	0	177	177
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.74	45.00	54.6	0.0	6.00	3.50	7.50	43	48	91
Pin	Pin Insulator - 5 kV	KU, UTILITY	37.74	-45.00	248.4	0.0	6.00	3.50	7.50	-42	48	6
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.25	0.00	40.0	40.0	3.00	3.80	12.75	8	80	88
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.81	0.00	40.0	40.0	2.00	3.00	3.19	2	14	16
Bolt	Three Bolt	Unknown, COMMUNICATION	20.66	0.00	241.3	331.3	5.00	3.00	0.00	-6	0	-6
J-Hook	J-Hook	Unknown, COMMUNICATION	19.83	0.00	130.0	130.0	5.00	3.00	0.00	2	0	2

Bolt	Three Bolt	Unknown, COMMUNICATION	19.42	0.00	241.3	331.3	5.00	3.00	0.00	-6	0	-6
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.81	0.00	220.0	220.0	2.00	3.00	3.19	-2	14	12
Totals:										-1	381	380

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.69	33.39	10.97	14.76	7.32	11.87	1.60e+6	60.00	57.00	38.43	32,209	322.23	9.09

Pole Num:	473W - 500-62	Pole Length / Class:	65 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.86	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	48.03	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.990845 Deg	Longitude:	-84.434380 Deg	Elevation:	877.881252424232		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	63.1	44.0
Groundline	6.3	0.0
Vertical	48.5	41.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,191	158.3
Groundline	12,429	273.0
GL Allowable	198,790	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	52.9	137.0		18.6	228.6	19.0	270.0
? EHS 3/8 (Down)			53.2	13.1	228.6	14.7	270.0
? EHS 3/8 (Down)			53.1	13.7	228.6	15.4	270.0
? Single Helix Anchor	32.0	11.0		58.0	228.6	58.0	227.9
? EHS 3/8 (Down)			44.0	83.7	228.6	92.1	227.9
? Single Helix Anchor	30.0	11.0		55.9	228.6	55.9	227.9
? EHS 3/8 (Down)			43.7	80.6	228.6	88.7	227.9
? Single Helix Anchor	51.7	137.0		69.0	228.6	69.1	246.9
? EHS 3/8 (Down)			43.4	49.6	228.6	54.7	246.9
? EHS 3/8 (Down)			43.2	49.9	228.6	55.0	246.9
? Single Helix Anchor	50.0	137.0		36.2	228.6	36.2	246.9
? EHS 3/8 (Down)			41.7	52.2	228.6	57.5	246.9
? Single Helix Anchor	28.0	11.0		42.1	228.6	42.1	225.6
? EHS 3/8 (Down)			40.1	60.7	228.6	66.7	225.6
? Single Helix Anchor	26.0	11.0		40.0	228.6	40.0	225.6
? EHS 3/8 (Down)			39.8	57.8	228.6	63.5	225.6
? Single Helix Anchor	48.0	137.0		11.0	228.6	11.1	260.0
? EHS 1/4 (Down)			29.4	36.8	228.6	40.8	260.0
? Single Helix Anchor	46.6	137.0		9.5	228.6	9.6	270.0
? EHS 1/4 (Down)			27.0	31.7	228.6	35.3	270.0
? Single Helix Anchor	44.5	137.0		9.1	228.6	9.2	280.0
? EHS 1/4 (Down)			26.0	30.2	228.6	33.7	280.0
? Single Helix Anchor	44.3	137.0		8.5	228.6	8.6	280.0
? EHS 1/4 (Down)			25.0	28.3	228.6	31.6	280.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 273.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	18,317	6574.3	251,132	2020.5	126.3	27,483	1,841	10	27,493	404.3
Comms	2,759	990.1	22,029	177.2	11.1	2,411	1,090	6	2,417	35.5
GuyBraces	-21,101	-7573.3	-264,552	-2128.5	-133.1	-28,951	78,820	429	-28,522	-419.4
Pole	274	98.4	2,275	18.3	1.1	249	5,017	27	276	4.1
Crossarms	-12	-4.3	762	6.1	0.4	83	570	3	86	1.3
Insulators	41	14.8	784	6.3	0.4	86	315	2	88	1.3
Pole Load	279	100.0	12,429	100.0	6.3	1,360	87,653	477	1,838	27.0
Pole Reserve Capacity			186,361		93.7	5,440			4,962	73.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 273.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,933	693.9	26,837	215.9	13.5	2,937	75,041	409	3,346	49.2
Unknown, COMMUNICATION	-1,917	-688.0	-17,445	-140.4	-8.8	-1,909	7,024	38	-1,871	-27.5
Pole	274	98.4	2,275	18.3	1.1	249	5,017	27	276	4.1
<Undefined>	-12	-4.3	762	6.1	0.4	83	570	3	86	1.3
Totals:	279	100.0	12,429	100.0	6.3	1,360	87,653	477	1,838	27.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	54.71	18.82	0.7200	2.31	0.462	209.0	138.1	209.0	2,210	-111,010	-39	2,880	-108,169
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	54.71	48.97	0.7200	2.31	0.462	209.0	138.1	209.0	2,210	-111,010	20	2,880	-108,110
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	54.71	48.58	0.7200	2.31	0.462	209.0	138.1	209.0	2,210	-111,010	-50	2,880	-108,180
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	54.71	18.82	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	114,638	28	1,938	116,603
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	54.71	48.97	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	114,638	35	1,938	116,611
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	54.71	48.58	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	114,638	-14	1,938	116,562

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	53.30	17.16	0.3980	1.60	0.145	209.0	138.1	209.0	1,228	-60,099	-18	2,065	-58,052
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	53.30	17.16	0.3980	0.90	0.145	145.6	316.2	145.6	1,228	62,063	13	1,390	63,466
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	44.18	17.71	0.3980	0.09	0.145	44.4	190.1	44.4	1,228	8,677	1	318	8,995
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	44.18	17.71	0.3980	0.90	0.145	145.6	316.2	145.6	1,228	51,447	14	1,152	52,613
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.59	60.00	0.7200	0.31	0.462	44.4	190.1	44.4	2,210	15,768	152	436	16,355
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.59	60.00	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	93,496	497	1,580	95,573
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.59	42.00	0.7200	0.31	0.462	44.4	190.1	44.4	2,210	15,768	106	436	16,310
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.59	42.00	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	93,496	348	1,580	95,424
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.59	24.00	0.7200	0.31	0.462	44.4	190.1	44.4	2,210	15,768	61	436	16,264
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.59	24.00	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	93,496	199	1,580	95,275
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.50	60.00	0.7200	0.31	0.462	44.4	190.1	44.4	2,210	15,031	152	415	15,598
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.50	60.00	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	89,127	497	1,506	91,130
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.50	42.00	0.7200	0.31	0.462	44.4	190.1	44.4	2,210	15,031	106	415	15,553
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.50	42.00	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	89,127	348	1,506	90,981
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.50	24.00	0.7200	0.31	0.462	44.4	190.1	44.4	2,210	15,031	61	415	15,507
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.50	24.00	0.7200	1.41	0.462	145.6	316.2	145.6	2,210	89,127	199	1,506	90,832
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.36	17.94	0.3980	0.09	0.145	44.4	190.1	44.4	1,228	7,926	1	290	8,217
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.36	17.94	0.3980	0.90	0.145	145.6	316.2	145.6	1,228	46,997	15	1,052	48,065
Totals:											768,161	2,729	32,533	803,423	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	28.41	8.42	1.3300	0.80	0.337	63.5	98.0	63.6	100	-3,679	-18	63	-3,633
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	28.20	8.43	1.3300	3.32	0.337	209.0	138.1	209.1	925	-23,948	80	2,227	-21,641
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	28.20	8.43	1.3300	2.07	0.337	145.6	316.2	145.7	925	24,731	56	1,498	26,285
	COMMUNICATION														

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	27.19	8.49	0.6570	0.76	0.190	63.5	98.0	63.5	100	-3,521	-10	38	-3,493
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	27.03	8.50	0.6570	3.24	0.190	209.0	138.1	209.0	750	-18,611	46	1,349	-17,215
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	27.03	8.50	0.6570	2.05	0.190	145.6	316.2	145.6	750	19,219	32	908	20,159
Telco	TELE 1.5	Unknown, COMMUNICATION	26.12	8.56	1.5000	0.91	0.900	63.5	98.0	63.5	450	-15,224	-31	64	-15,192
Telco	TELE 1.5	Unknown, COMMUNICATION	25.97	8.57	1.5000	2.43	0.900	145.6	316.2	145.7	2,000	49,257	104	1,508	50,869
Telco	TELE 1.5	Unknown, COMMUNICATION	25.14	8.62	1.5000	0.91	0.900	63.5	98.0	63.5	450	-14,654	-31	61	-14,624
Telco	TELE 1.5	Unknown, COMMUNICATION	25.00	8.63	1.5000	2.43	0.900	145.6	316.2	145.7	2,000	47,403	105	1,451	48,959
Totals:											60,972	334	9,168	70,474	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	54.71	6.07	137.2	137.2	50.00	4.50	3.50	96.00	0	158	158
Offset	Crossarm	43.78	6.74	163.2	163.2	50.00	4.50	3.50	96.00	1,456	-324	1,132
Offset	Crossarm	41.69	6.86	163.2	163.2	50.00	4.50	3.50	96.00	1,456	-309	1,147
Totals:										2,911	-474	2,437

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	54.71	0.00	137.2	1.0	3.00	3.80	12.75	-13	184	171
Deadend	Deadend Insulator - 15 kV KU, UTILITY	54.71	45.00	219.5	1.0	3.00	3.80	12.75	17	184	201
Deadend	Deadend Insulator - 15 kV KU, UTILITY	54.71	-45.00	54.9	1.0	3.00	3.80	12.75	-42	184	142
Deadend	Deadend Insulator - 15 kV KU, UTILITY	54.71	0.00	317.2	179.0	3.00	3.80	12.75	13	184	197
Deadend	Deadend Insulator - 15 kV KU, UTILITY	54.71	45.00	234.9	179.0	3.00	3.80	12.75	43	184	227
Deadend	Deadend Insulator - 15 kV KU, UTILITY	54.71	-45.00	39.5	179.0	3.00	3.80	12.75	-17	184	167
Deadend	Deadend Insulator - 15 kV KU, UTILITY	53.30	0.00	138.1	138.1	3.00	3.80	12.75	-6	90	84
Deadend	Deadend Insulator - 15 kV KU, UTILITY	53.30	0.00	316.2	316.2	3.00	3.80	12.75	6	90	96
Deadend	Deadend Insulator - 15 kV KU, UTILITY	44.18	0.00	190.1	190.1	3.00	3.80	12.75	1	74	75

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	44.18	0.00	316.2	316.2	3.00	3.80	12.75	6	74	80
Pin	Pin Insulator - 5 kV	KU, UTILITY	43.96	60.00	246.8	0.0	6.00	3.50	7.50	107	80	188
Pin	Pin Insulator - 5 kV	KU, UTILITY	43.96	42.00	244.1	0.0	6.00	3.50	7.50	75	80	155
Pin	Pin Insulator - 5 kV	KU, UTILITY	43.96	24.00	237.5	0.0	6.00	3.50	7.50	43	80	123
Pin	Pin Insulator - 5 kV	KU, UTILITY	41.88	60.00	246.6	0.0	6.00	3.50	7.50	107	77	184
Pin	Pin Insulator - 5 kV	KU, UTILITY	41.88	42.00	243.9	0.0	6.00	3.50	7.50	75	77	152
Pin	Pin Insulator - 5 kV	KU, UTILITY	41.88	24.00	237.2	0.0	6.00	3.50	7.50	43	77	119
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.36	0.00	190.1	190.1	3.00	3.80	12.75	1	68	69
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.36	0.00	316.2	316.2	3.00	3.80	12.75	6	68	74
Bolt	Single Bolt	Unknown, COMMUNICATION	28.41	0.00	153.0	243.0	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	28.20	0.00	227.2	227.2	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	27.19	0.00	153.0	243.0	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	27.03	0.00	227.2	227.2	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	26.12	0.00	153.0	243.0	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	25.97	0.00	316.2	406.2	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	25.14	0.00	153.0	243.0	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	25.00	0.00	316.2	406.2	5.00	3.00	0.00	5	0	5
Totals:										472	2,038	2,510

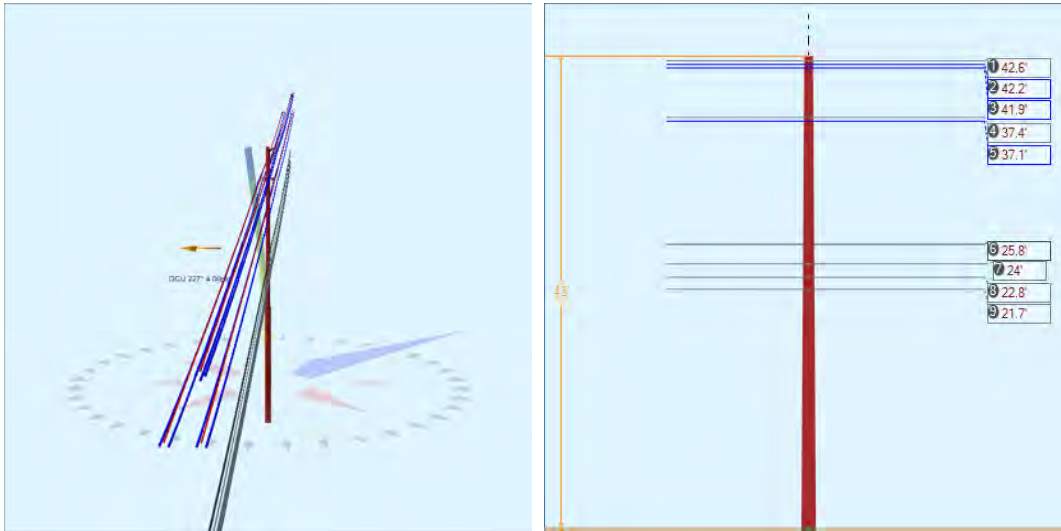
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	53.21	0.00	52.93	0.375	75.00	137.0	45.0	0.273	73.30	0.84
EHS 3/8	Down	KU, UTILITY	53.08	0.00	52.93	0.375	75.00	137.0	44.9	0.273	73.20	0.88
EHS 3/8	Down	KU, UTILITY	43.95	0.00	32.00	0.375	75.00	11.0	53.8	0.273	52.62	3.85
EHS 3/8	Down	KU, UTILITY	43.67	0.00	30.00	0.375	75.00	11.0	55.3	0.273	51.24	3.61
EHS 3/8	Down	KU, UTILITY	43.43	0.00	51.74	0.375	75.00	137.0	39.9	0.273	65.73	2.85
EHS 3/8	Down	KU, UTILITY	43.23	0.00	51.74	0.375	75.00	137.0	39.8	0.273	65.60	2.86
EHS 3/8	Down	KU, UTILITY	41.69	0.00	50.00	0.375	75.00	137.0	39.7	0.273	63.27	2.88
EHS 3/8	Down	KU, UTILITY	40.11	0.00	28.00	0.375	75.00	11.0	54.9	0.273	47.17	2.50
EHS 3/8	Down	KU, UTILITY	39.78	0.00	26.00	0.375	75.00	11.0	56.6	0.273	45.79	2.31
EHS 1/4	Down	Unknown, COMMUNICATION	29.44	0.00	48.00	0.25	75.00	137.0	31.4	0.121	54.39	1.70
EHS 1/4	Down	Unknown, COMMUNICATION	27.03	0.00	46.57	0.25	75.00	137.0	30.1	0.121	51.91	1.40
EHS 1/4	Down	Unknown, COMMUNICATION	25.97	0.00	44.45	0.25	75.00	137.0	30.2	0.121	49.55	1.27
EHS 1/4	Down	Unknown, COMMUNICATION	25.00	0.00	44.30	0.25	75.00	137.0	29.4	0.121	48.92	1.17

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,043	1,857	1,817	1,285	1,285	-925	-48,241
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,132	1,938	1,899	1,341	1,344	-967	-50,376
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,763	11,603	11,603	9,357	6,861	-951	-40,880
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,288	11,171	11,171	9,186	6,357	-881	-37,567
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,576	6,888	6,872	4,407	5,272	-3,795	-163,499
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,628	6,934	6,918	4,425	5,318	-3,828	-164,157
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,971	7,246	7,230	4,619	5,563	-4,004	-165,593
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,252	8,410	8,410	6,879	4,837	-670	-26,182
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,807	8,006	8,005	6,685	4,403	-610	-23,573
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,440	2,218	2,203	1,149	1,879	-1,353	-39,443
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,111	1,919	1,899	951	1,643	-1,183	-31,660
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,015	1,832	1,809	911	1,563	-1,125	-28,936
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,888	1,717	1,691	829	1,474	-1,061	-26,250
Totals:										52,023	47,799	-21,352	-846,357

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	52.93	137.0	20,000	1.00	20,000	3,795	3,716	19.0
Single Helix Anchor		18.00	32.00	11.0	20,000	1.00	20,000	11,603	11,603	58.0
Single Helix Anchor		18.00	30.00	11.0	20,000	1.00	20,000	11,171	11,171	55.9
Single Helix Anchor		18.00	51.74	137.0	20,000	1.00	20,000	13,822	13,790	69.1
Single Helix Anchor		18.00	50.00	137.0	20,000	1.00	20,000	7,246	7,230	36.2
Single Helix Anchor		18.00	28.00	11.0	20,000	1.00	20,000	8,410	8,410	42.1
Single Helix Anchor		18.00	26.00	11.0	20,000	1.00	20,000	8,006	8,005	40.0
Single Helix Anchor		18.00	48.00	137.0	20,000	1.00	20,000	2,218	2,203	11.1
Single Helix Anchor		18.00	46.57	137.0	20,000	1.00	20,000	1,919	1,899	9.6
Single Helix Anchor		18.00	44.45	137.0	20,000	1.00	20,000	1,832	1,809	9.2
Single Helix Anchor		18.00	44.30	137.0	20,000	1.00	20,000	1,717	1,691	8.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	41.24	34.91	13.54	56.26	8.60	15.30	1.60e+6	60.00	57.00	55.14	180,818	1807.28	2.06

Pole Num:	474W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.98	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.62	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.991114 Deg	Longitude:	-84.434608 Deg	Elevation:	886.888190424068		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	58.3	0.0
Groundline	58.3	0.0
Vertical	30.3	30.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	74,370	227.2
Groundline	74,370	227.2
GL Allowable	129,371	

	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,392	60.6	54,336	73.1	42.0	2,844	3,480	25	2,869	42.2
Comms	630	27.4	14,089	18.9	10.9	737	1,191	9	746	11.0
Pole	266	11.6	5,684	7.6	4.4	297	3,070	22	320	4.7
Insulators	8	0.3	262	0.4	0.2	14	101	1	14	0.2
Pole Load	2,296	100.0	74,370	100.0	57.5	3,892	7,842	57	3,949	58.1
Pole Reserve Capacity			55,001		42.5	2,908			2,851	41.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,400	61.0	54,622	73.5	42.2	2,859	3,543	26	2,884	42.4
Unknown, COMMUNICATION	630	27.4	14,064	18.9	10.9	736	1,229	9	745	11.0
Pole	266	11.6	5,684	7.6	4.4	297	3,070	22	320	4.7
Totals:	2,296	100.0	74,370	100.0	57.5	3,892	7,842	57	3,949	58.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.58	15.51	0.5630	0.27	0.291	145.6	137.3	145.6	5,010	498	-25	1,922	2,395
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.58	15.51	0.5630	0.30	0.291	153.7	317.1	153.7	5,010	246	-26	2,029	2,249
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.25	11.51	1.1080	1.78	1.093	145.6	137.3	145.6	3,200	316	-70	2,885	3,131
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.25	19.51	1.1080	1.78	1.093	145.6	137.3	145.6	3,200	316	-70	2,885	3,131
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.25	11.51	1.1080	1.92	1.093	153.7	317.1	153.7	3,200	156	-74	3,046	3,128
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.25	19.51	1.1080	1.92	1.093	153.7	317.1	153.7	3,200	156	-74	3,046	3,128
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.92	15.51	1.1080	1.78	1.093	145.6	137.3	145.6	3,200	313	-71	2,862	3,105
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.92	15.51	1.1080	1.92	1.093	153.7	317.1	153.7	3,200	155	-75	3,022	3,102
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.42	15.82	0.5630	0.27	0.291	145.6	137.3	145.6	5,010	438	27	1,689	2,154
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.42	15.82	0.5630	0.30	0.291	153.7	317.1	153.7	5,010	217	29	1,783	2,028
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.09	11.82	1.1080	1.78	1.093	145.6	137.3	145.6	3,200	277	76	2,532	2,885
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.09	19.82	1.1080	1.78	1.093	145.6	137.3	145.6	3,200	277	76	2,532	2,885
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.09	11.82	1.1080	1.92	1.093	153.7	317.1	153.7	3,200	137	80	2,673	2,891
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.09	19.82	1.1080	1.92	1.093	153.7	317.1	153.7	3,200	137	80	2,673	2,891
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.42	15.82	0.5630	0.27	0.291	145.6	137.3	145.6	5,010	438	-27	1,689	2,100
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.42	15.82	0.5630	0.30	0.291	153.7	317.1	153.7	5,010	217	-29	1,783	1,971

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.08	11.82	1.1080	1.78	1.093	145.6	137.3	145.6	3,200	277	-76	2,532	2,734
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.08	19.82	1.1080	1.78	1.093	145.6	137.3	145.6	3,200	277	-76	2,532	2,734
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.08	11.82	1.1080	1.92	1.093	153.7	317.1	153.7	3,200	137	-80	2,673	2,730
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.08	19.82	1.1080	1.92	1.093	153.7	317.1	153.7	3,200	137	-80	2,673	2,730
Totals:											5,123	-486	49,464	54,101	

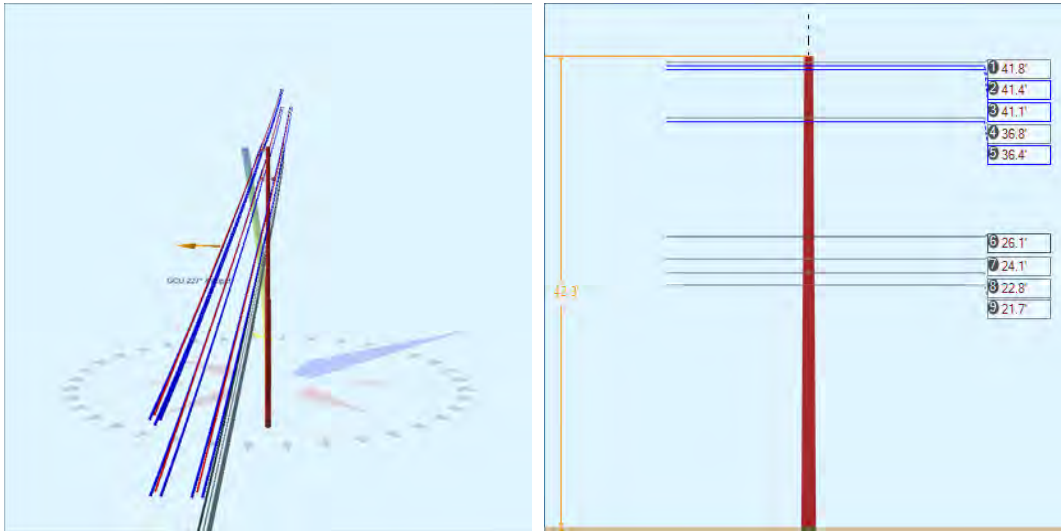
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.83	7.54	1.3300	2.07	0.337	145.6	137.3	145.7	925	56	-72	2,008	1,992
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.83	7.54	1.3300	2.21	0.337	153.7	317.1	153.7	925	28	-76	2,119	2,070
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.04	7.65	0.6570	2.05	0.190	145.6	137.3	145.7	750	42	-42	1,181	1,182
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.04	7.65	0.6570	2.19	0.190	153.7	317.1	153.7	750	21	-44	1,247	1,224
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.82	7.72	1.5000	2.43	0.900	145.6	137.3	145.7	2,000	107	-129	1,939	1,917
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.82	7.72	1.5000	2.61	0.900	153.7	317.1	153.7	2,000	53	-136	2,046	1,963
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.74	7.79	1.5000	2.43	0.900	145.6	137.3	145.7	2,000	102	-130	1,847	1,819
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.74	7.79	1.5000	2.61	0.900	153.7	317.1	153.7	2,000	50	-137	1,949	1,862
		COMMUNICATION													
Totals:											457	-764	14,334	14,028	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	42.58	0.00	50.0	50.0	11.00	4.75	11.50	-27	113	86
Suspension	Suspension 11.50"	Power, UTILITY	37.42	0.00	230.0	230.0	11.00	4.75	11.50	28	99	127
Suspension	Suspension 11.50"	Power, UTILITY	37.42	0.00	50.0	50.0	11.00	4.75	11.50	-28	99	72
Bolt	Three Bolt	Unknown, COMMUNICATION	25.83	0.00	47.1	317.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.04	0.00	47.1	317.1	5.00	3.00	0.00	-6	0	-6

Bolt	Three Bolt	Unknown, COMMUNICATION	22.82	0.00	47.1	317.1	5.00	3.00	0.00	-6	0	-6	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.74	0.00	47.1	317.1	5.00	3.00	0.00	-6	0	-6	
										Totals:	-51	312	261

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	30.16	34.20	11.98	24.65	7.96	13.26	1.60e+6	60.00	57.00	43.02	25,896	258.80	3.30

Pole Num:	475W- NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.34	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.991529 Deg	Longitude:	-84.435026 Deg	Elevation:	886.627520333586		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	66.0	0.0
Groundline	66.0	0.0
Vertical	31.6	30.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	82,632	227.0
Groundline	82,632	227.0
GL Allowable	126,794	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,537	61.9	59,930	72.5	47.3	3,200	3,701	27	3,228	47.5
Comms	678	27.3	16,866	20.4	13.3	901	1,266	9	910	13.4
Pole	261	10.5	5,477	6.6	4.3	293	2,992	22	314	4.6
Insulators	8	0.3	359	0.4	0.3	19	101	1	20	0.3
Pole Load	2,484	100.0	82,632	100.0	65.2	4,413	8,060	59	4,472	65.8
Pole Reserve Capacity			44,162		34.8	2,387			2,328	34.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,545	62.2	60,264	72.9	47.5	3,218	3,764	28	3,246	47.7
Unknown, COMMUNICATION	678	27.3	16,891	20.4	13.3	902	1,304	10	912	13.4
Pole	261	10.5	5,477	6.6	4.3	293	2,992	22	314	4.6
Totals:	2,484	100.0	82,632	100.0	65.2	4,413	8,060	59	4,472	65.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.51	0.5630	0.30	0.291	153.7	137.1	153.7	5,010	470	27	1,990	2,486
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.51	0.5630	0.35	0.291	164.6	316.8	164.6	5,010	625	28	2,131	2,784
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.51	1.1080	1.92	1.093	153.7	137.1	153.7	3,200	298	74	2,986	3,358
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.51	1.1080	1.92	1.093	153.7	137.1	153.7	3,200	298	74	2,986	3,358
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.51	1.1080	2.11	1.093	164.6	316.8	164.6	3,200	396	80	3,197	3,673
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.51	1.1080	2.11	1.093	164.6	316.8	164.6	3,200	396	80	3,197	3,673
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.51	1.1080	1.92	1.093	153.7	137.1	153.7	3,200	295	75	2,961	3,332
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.51	1.1080	2.11	1.093	164.6	316.8	164.6	3,200	393	80	3,171	3,644
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.75	15.82	0.5630	0.30	0.291	153.7	137.1	153.7	5,010	414	-29	1,751	2,137
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.75	15.82	0.5630	0.35	0.291	164.6	316.8	164.6	5,010	550	-31	1,875	2,395
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	11.82	1.1080	1.92	1.093	153.7	137.1	153.7	3,200	262	-80	2,625	2,807
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	19.82	1.1080	1.92	1.093	153.7	137.1	153.7	3,200	262	-80	2,625	2,807
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	11.82	1.1080	2.11	1.093	164.6	316.8	164.6	3,200	348	-86	2,811	3,074
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	19.82	1.1080	2.11	1.093	164.6	316.8	164.6	3,200	348	-86	2,811	3,074
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.75	15.82	0.5630	0.30	0.291	153.7	137.1	153.7	5,010	414	29	1,751	2,194
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.75	15.82	0.5630	0.35	0.291	164.6	316.8	164.6	5,010	550	31	1,875	2,456

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	11.82	1.1080	1.92	1.093	153.7	137.1	153.7	3,200	262	80	2,625	2,967
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	19.82	1.1080	1.92	1.093	153.7	137.1	153.7	3,200	262	80	2,625	2,967
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	11.82	1.1080	2.11	1.093	164.6	316.8	164.6	3,200	348	86	2,811	3,245
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.42	19.82	1.1080	2.11	1.093	164.6	316.8	164.6	3,200	348	86	2,811	3,245
Totals:											7,540	517	51,617	59,675	

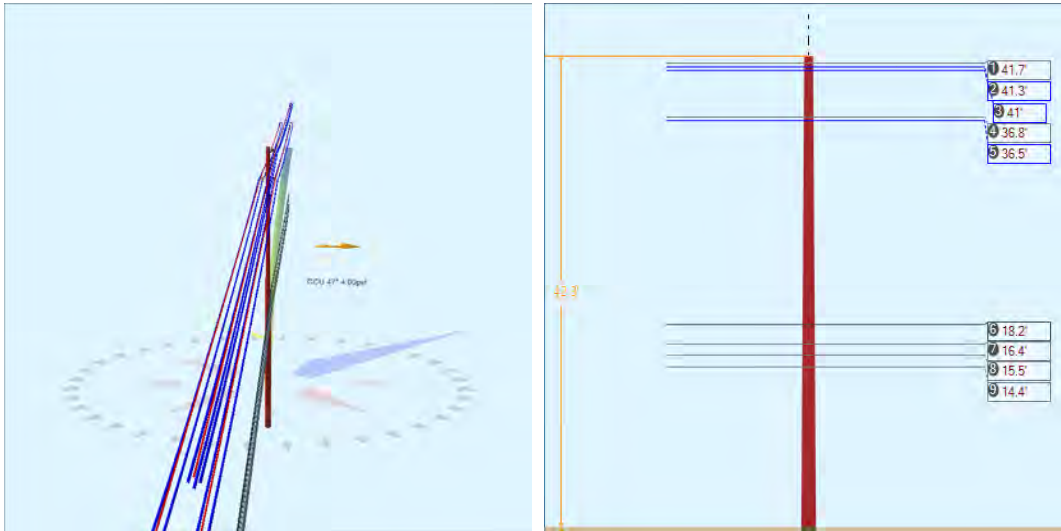
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	26.10	7.48	1.3300	2.21	0.337	153.7	137.1	153.7	925	54	75	2,141	2,270
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	26.10	7.48	1.3300	2.42	0.337	164.6	316.8	164.6	925	72	81	2,293	2,446
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.09	7.60	0.6570	2.19	0.190	153.7	137.1	153.7	750	41	44	1,249	1,334
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.09	7.60	0.6570	2.39	0.190	164.6	316.8	164.6	750	54	47	1,338	1,439
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.84	7.68	1.5000	2.61	0.900	153.7	137.1	153.7	2,000	103	135	2,047	2,285
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.84	7.68	1.5000	2.85	0.900	164.6	316.8	164.7	2,000	136	144	2,193	2,474
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.75	7.74	1.5000	2.61	0.900	153.7	137.1	153.7	2,000	98	136	1,950	2,184
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.75	7.74	1.5000	2.85	0.900	164.6	316.8	164.7	2,000	130	146	2,088	2,364
		COMMUNICATION													
Totals:											688	807	15,299	16,795	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	41.75	0.00	230.0	230.0	11.00	4.75	11.50	27	111	138
Suspension	Suspension 11.50"	Power, UTILITY	36.75	0.00	50.0	50.0	11.00	4.75	11.50	-28	98	70
Suspension	Suspension 11.50"	Power, UTILITY	36.75	0.00	230.0	230.0	11.00	4.75	11.50	28	98	125
Bolt	Three Bolt	Unknown, COMMUNICATION	26.10	0.00	226.9	136.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.09	0.00	226.9	136.9	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	22.84	0.00	226.9	136.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.75	0.00	226.9	136.9	5.00	3.00	0.00	6	0	6
Totals:										51	306	357

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.99	34.20	11.90	24.88	7.96	13.17	1.60e+6	60.00	57.00	42.30	25,482	255.06	3.16

Pole Num:	476W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.34	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.991849 Deg	Longitude:	-84.435441 Deg	Elevation:	882.952889569449		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	60.0	0.0
Groundline	60.0	0.0
Vertical	26.3	28.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	75,031	47.0
Groundline	75,031	47.0
GL Allowable	126,803	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 47.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,502	62.9	58,506	78.0	46.1	3,125	3,243	24	3,149	46.3
Comms	618	25.9	10,688	14.2	8.4	571	1,110	8	579	8.5
Pole	261	10.9	5,477	7.3	4.3	293	2,992	22	315	4.6
Insulators	8	0.3	360	0.5	0.3	19	101	1	20	0.3
Pole Load	2,388	100.0	75,031	100.0	59.2	4,008	7,445	55	4,062	59.7
Pole Reserve Capacity			51,772		40.8	2,792			2,738	40.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 47.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,510	63.2	58,841	78.4	46.4	3,143	3,306	24	3,167	46.6
Unknown, COMMUNICATION	618	25.9	10,714	14.3	8.5	572	1,148	8	581	8.5
Pole	261	10.9	5,477	7.3	4.3	293	2,992	22	315	4.6
Totals:	2,388	100.0	75,031	100.0	59.2	4,008	7,445	55	4,062	59.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.67	15.52	0.5630	0.35	0.291	164.6	136.8	164.6	5,010	853	28	2,126	3,008
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.67	15.52	0.5630	0.17	0.291	114.3	317.3	114.3	5,010	968	20	1,477	2,464
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	11.52	1.1080	2.11	1.093	164.6	136.8	164.6	3,200	541	80	3,191	3,811
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	19.52	1.1080	2.11	1.093	164.6	136.8	164.6	3,200	541	80	3,191	3,811
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	11.52	1.1080	1.30	1.093	114.3	317.3	114.3	3,200	613	55	2,216	2,884
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	19.52	1.1080	1.30	1.093	114.3	317.3	114.3	3,200	613	55	2,216	2,884
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.00	15.52	1.1080	2.11	1.093	164.6	136.8	164.6	3,200	536	80	3,165	3,782
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.00	15.52	1.1080	1.30	1.093	114.3	317.3	114.3	3,200	609	56	2,198	2,862
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.83	15.82	0.5630	0.35	0.291	164.6	136.8	164.6	5,010	754	31	1,880	2,665
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.83	15.82	0.5630	0.17	0.291	114.3	317.3	114.3	5,010	856	21	1,305	2,182
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	11.82	1.1080	2.11	1.093	164.6	136.8	164.6	3,200	478	86	2,818	3,381
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	19.82	1.1080	2.11	1.093	164.6	136.8	164.6	3,200	478	86	2,818	3,381
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	11.82	1.1080	1.30	1.093	114.3	317.3	114.3	3,200	542	59	1,957	2,558
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	19.82	1.1080	1.30	1.093	114.3	317.3	114.3	3,200	542	59	1,957	2,558
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.83	15.82	0.5630	0.35	0.291	164.6	136.8	164.6	5,010	754	-31	1,880	2,604
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.83	15.82	0.5630	0.17	0.291	114.3	317.3	114.3	5,010	856	-21	1,305	2,140

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	11.82	1.1080	2.11	1.093	164.6	136.8	164.6	3,200	478	-86	2,818	3,210
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	19.82	1.1080	2.11	1.093	164.6	136.8	164.6	3,200	478	-86	2,818	3,210
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	11.82	1.1080	1.30	1.093	114.3	317.3	114.3	3,200	542	-59	1,957	2,439
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	19.82	1.1080	1.30	1.093	114.3	317.3	114.3	3,200	542	-59	1,957	2,439
Totals:											12,573	454	45,246	58,272	

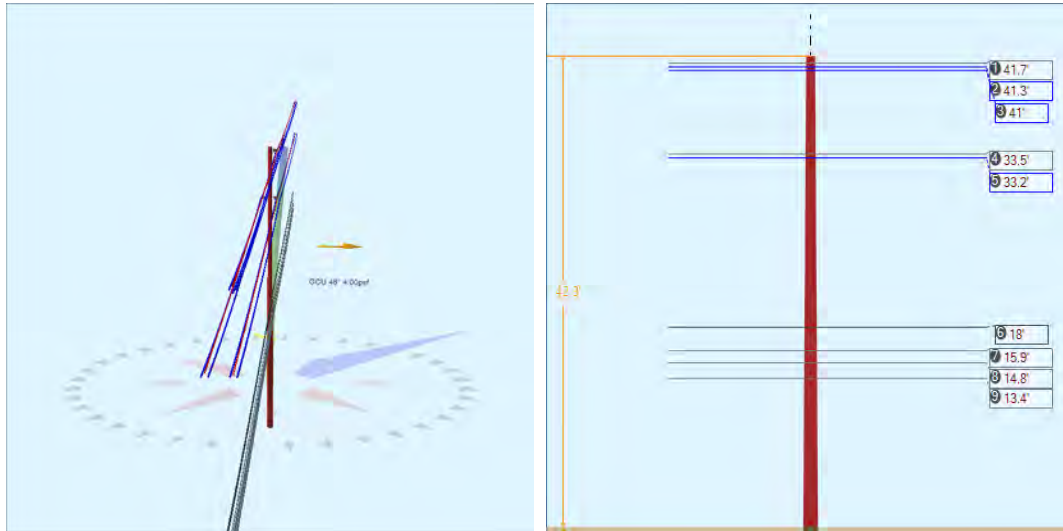
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	18.21	7.96	1.3300	2.42	0.337	164.6	136.8	164.6	925	69	86	1,600	1,755
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	18.21	7.96	1.3300	1.55	0.337	114.3	317.3	114.4	925	78	60	1,111	1,249
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.45	8.07	0.6570	2.39	0.190	164.6	136.8	164.6	750	50	50	914	1,014
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	16.45	8.07	0.6570	1.53	0.190	114.3	317.3	114.3	750	57	34	635	726
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.46	8.13	1.5000	2.85	0.900	164.6	136.8	164.7	2,000	126	153	1,484	1,764
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	15.46	8.13	1.5000	1.80	0.900	114.3	317.3	114.4	2,000	143	106	1,031	1,281
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.41	8.19	1.5000	2.85	0.900	164.6	136.8	164.7	2,000	118	154	1,383	1,656
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.41	8.19	1.5000	1.80	0.900	114.3	317.3	114.4	2,000	134	107	961	1,202
		COMMUNICATION													
Totals:											776	750	9,119	10,645	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	41.67	0.00	50.0	50.0	11.00	4.75	11.50	27	111	138
Suspension	Suspension 11.50"	Power, UTILITY	36.83	0.00	50.0	50.0	11.00	4.75	11.50	28	98	125
Suspension	Suspension 11.50"	Power, UTILITY	36.83	0.00	230.0	230.0	11.00	4.75	11.50	-28	98	70
Bolt	Three Bolt	Unknown, COMMUNICATION	18.21	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	16.45	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	15.46	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	14.41	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6
Totals:										53	306	359

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.74	34.03	11.96	23.49	7.96	13.17	1.60e+6	60.00	57.00	42.30	28,309	283.10	3.80

Pole Num:	477W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.34	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.992080 Deg	Longitude:	-84.435738 Deg	Elevation:	887.843669036499		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.3	0.0
Groundline	44.3	0.0
Vertical	20.5	27.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	55,284	47.5
Groundline	55,284	47.5
GL Allowable	126,777	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 47.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,110	59.2	41,152	74.4	32.5	2,197	2,704	20	2,217	32.6
Comms	497	26.5	8,311	15.0	6.6	444	932	7	451	6.6
Pole	261	13.9	5,478	9.9	4.3	293	2,991	22	314	4.6
Insulators	8	0.4	343	0.6	0.3	18	101	1	19	0.3
Pole Load	1,876	100.0	55,284	100.0	43.6	2,952	6,728	49	3,001	44.1
Pole Reserve Capacity			71,493		56.4	3,848			3,799	55.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 47.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,118	59.6	41,469	75.0	32.7	2,214	2,767	20	2,235	32.9
Unknown, COMMUNICATION	497	26.5	8,337	15.1	6.6	445	970	7	452	6.7
Pole	261	13.9	5,478	9.9	4.3	293	2,991	22	314	4.6
Totals:	1,876	100.0	55,284	100.0	43.6	2,952	6,728	49	3,001	44.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.67	15.52	0.5630	0.17	0.291	114.3	137.3	114.3	5,010	567	20	1,477	2,063
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.67	15.52	0.5630	0.19	0.291	119.9	317.5	119.9	5,010	162	21	1,549	1,732
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	11.52	1.1080	1.30	1.093	114.3	137.3	114.3	3,200	359	55	2,216	2,630
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	19.52	1.1080	1.30	1.093	114.3	137.3	114.3	3,200	359	55	2,216	2,630
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	11.52	1.1080	1.38	1.093	119.9	317.5	119.9	3,200	103	58	2,324	2,485
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	19.52	1.1080	1.38	1.093	119.9	317.5	119.9	3,200	103	58	2,324	2,485
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.00	15.52	1.1080	1.30	1.093	114.3	137.3	114.3	3,200	356	56	2,198	2,610
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.00	15.52	1.1080	1.38	1.093	119.9	317.5	119.9	3,200	102	58	2,306	2,466
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.50	16.02	0.5630	0.17	0.291	114.3	137.3	114.3	5,010	456	22	1,187	1,665
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.50	16.02	0.5630	0.19	0.291	119.9	317.5	119.9	5,010	130	23	1,245	1,399
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	12.02	1.1080	1.30	1.093	114.3	137.3	114.3	3,200	288	62	1,778	2,128
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	20.02	1.1080	1.30	1.093	114.3	137.3	114.3	3,200	288	62	1,778	2,128
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	12.02	1.1080	1.38	1.093	119.9	317.5	119.9	3,200	82	65	1,865	2,013
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	20.02	1.1080	1.38	1.093	119.9	317.5	119.9	3,200	82	65	1,865	2,013
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.50	16.02	0.5630	0.17	0.291	114.3	137.3	114.3	5,010	456	-22	1,187	1,620
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.50	16.02	0.5630	0.17	0.291	114.3	317.5	114.3	5,010	130	-22	1,187	1,295

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	12.02	1.1080	1.30	1.093	114.3	137.3	114.3	3,200	288	-62	1,778	2,004
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	20.02	1.1080	1.30	1.093	114.3	137.3	114.3	3,200	288	-62	1,778	2,004
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	12.02	1.1080	1.30	1.093	114.3	317.5	114.3	3,200	82	-62	1,778	1,798
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.17	20.02	1.1080	1.30	1.093	114.3	317.5	114.3	3,200	82	-62	1,778	1,798
Totals:											4,764	388	35,813	40,965	

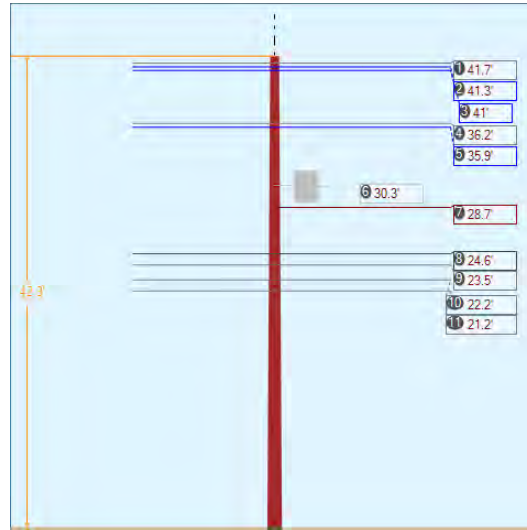
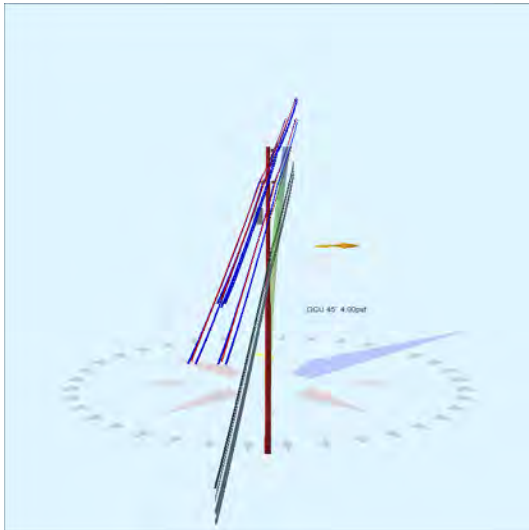
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	17.96	7.98	1.3300	1.54	0.337	114.3	137.3	114.3	925	45	60	1,096	1,201
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	17.96	7.98	1.3300	1.63	0.337	119.9	317.5	119.9	925	13	63	1,149	1,225
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.87	8.10	0.6570	1.53	0.190	114.3	137.3	114.3	750	32	35	612	679
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.87	8.10	0.6570	1.62	0.190	119.9	317.5	119.9	750	9	36	642	687
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.77	8.17	1.5000	1.80	0.900	114.3	137.3	114.3	2,000	80	107	985	1,172
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	14.77	8.17	1.5000	1.90	0.900	119.9	317.5	119.9	2,000	23	112	1,033	1,168
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	13.37	8.26	1.5000	1.80	0.900	114.3	137.3	114.3	2,000	73	108	892	1,072
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	13.37	8.26	1.5000	1.90	0.900	119.9	317.5	119.9	2,000	21	113	935	1,069
		COMMUNICATION													
Totals:											296	633	7,344	8,273	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	41.67	0.00	50.0	50.0	11.00	4.75	11.50	27	111	138
Suspension	Suspension 11.50"	Power, UTILITY	33.50	0.00	50.0	50.0	11.00	4.75	11.50	28	89	117
Suspension	Suspension 11.50"	Power, UTILITY	33.50	0.00	230.0	230.0	11.00	4.75	11.50	-28	89	61
Bolt	Three Bolt	Unknown, COMMUNICATION	17.96	0.00	47.4	317.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	15.87	0.00	47.4	317.4	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	14.77	0.00	47.4	317.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	13.37	0.00	47.4	317.4	5.00	3.00	0.00	7	0	7
Totals:										53	289	341

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	27.02	33.79	12.04	21.77	7.96	13.17	1.60e+6	60.00	57.00	42.30	32,898	328.19	4.88

Pole Num:	478W - NT	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	12.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.97	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.992336 Deg	Longitude:	-84.436006 Deg	Elevation:	893.921373428645		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	57.8	0.0
Groundline	57.8	0.0
Vertical	28.4	29.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	70,340	25.5
Groundline	70,340	25.5
GL Allowable	123,393	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 25.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,476	65.6	53,229	75.7	43.1	2,924	2,942	22	2,946	43.3
Comms	487	21.6	11,694	16.6	9.5	642	988	7	650	9.6
PowerEquipments	34	1.5	-74	-0.1	-0.1	-4	636	5	1	0.0
Pole	245	10.9	5,143	7.3	4.2	283	2,956	22	305	4.5
Insulators	8	0.4	348	0.5	0.3	19	104	1	20	0.3
Pole Load	2,250	100.0	70,340	100.0	57.0	3,863	7,627	57	3,920	57.7
Pole Reserve Capacity			53,053		43.0	2,937			2,880	42.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 25.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,096	48.7	42,370	60.2	34.3	2,327	2,950	22	2,349	34.5
KU, UTILITY	422	18.8	11,110	15.8	9.0	610	696	5	615	9.1
Unknown, COMMUNICATION	487	21.6	11,716	16.7	9.5	644	1,026	8	651	9.6
Pole	245	10.9	5,143	7.3	4.2	283	2,956	22	305	4.5
Totals:	2,250	100.0	70,340	100.0	57.0	3,863	7,627	57	3,920	57.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.67	15.52	0.5630	0.19	0.291	119.9	137.5	119.9	5,010	-78,289	19	1,434	-76,836
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.67	15.52	0.5630	0.21	0.291	128.4	317.7	128.4	5,010	78,964	20	1,533	80,518
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	11.52	1.1080	1.38	1.093	119.9	137.5	119.9	3,200	-49,605	53	2,152	-47,400
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	19.52	1.1080	1.38	1.093	119.9	137.5	119.9	3,200	-49,605	53	2,152	-47,400
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	11.52	1.1080	1.51	1.093	128.4	317.7	128.4	3,200	50,033	57	2,301	52,390
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	19.52	1.1080	1.51	1.093	128.4	317.7	128.4	3,200	50,033	57	2,301	52,390
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.00	15.52	1.1080	1.38	1.093	119.9	137.5	119.9	3,200	-49,205	53	2,135	-47,017

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.00	15.52	1.1080	1.51	1.093	128.4	317.7	128.4	3,200	49,629	57	2,283	51,969
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.25	15.84	0.5630	0.19	0.291	119.9	137.5	119.9	5,010	-68,112	20	1,248	-66,843
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.25	15.84	0.5630	0.21	0.291	128.4	317.7	128.4	5,010	68,699	22	1,334	70,055
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	11.84	1.1080	1.38	1.093	119.9	137.5	119.9	3,200	-43,104	57	1,870	-41,177
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	19.84	1.1080	1.38	1.093	119.9	137.5	119.9	3,200	-43,104	57	1,870	-41,177
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	11.84	1.1080	1.51	1.093	128.4	317.7	128.4	3,200	43,476	61	2,000	45,537
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	19.84	1.1080	1.51	1.093	128.4	317.7	128.4	3,200	43,476	61	2,000	45,537
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.25	15.84	0.5630	0.19	0.291	119.9	137.5	119.9	5,010	-68,112	-20	1,248	-66,884
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.25	15.84	0.5630	0.21	0.291	128.4	317.7	128.4	5,010	68,699	-22	1,334	70,011
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	11.84	1.1080	1.38	1.093	119.9	137.5	119.9	3,200	-43,104	-57	1,870	-41,291
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	19.84	1.1080	1.38	1.093	119.9	137.5	119.9	3,200	-43,104	-57	1,870	-41,291
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	11.84	1.1080	1.51	1.093	128.4	317.7	128.4	3,200	43,476	-61	2,000	45,414
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	19.84	1.1080	1.51	1.093	128.4	317.7	128.4	3,200	43,476	-61	2,000	45,414
Secondary	TRIPLEX 4 AWG	KU, UTILITY	28.71	7.30	0.6800	1.42	0.164	128.4	317.7	128.4	916	9,948	13	1,173	11,133
Totals:											14,563	381	38,107	53,051	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.55	7.55	1.3300	1.63	0.337	119.9	137.5	119.9	925	-8,517	55	1,455	-7,007
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.55	7.55	1.3300	1.77	0.337	128.4	317.7	128.4	925	8,590	59	1,556	10,205
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.54	7.61	0.6570	1.62	0.190	119.9	137.5	119.9	750	-6,621	32	882	-5,708
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.54	7.61	0.6570	1.76	0.190	128.4	317.7	128.4	750	6,678	34	943	7,655
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.22	7.69	1.5000	1.90	0.900	119.9	137.5	119.9	2,000	-16,669	98	1,439	-15,133
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.22	7.69	1.5000	2.07	0.900	128.4	317.7	128.4	2,000	16,813	105	1,539	18,456
		COMMUNICATION													

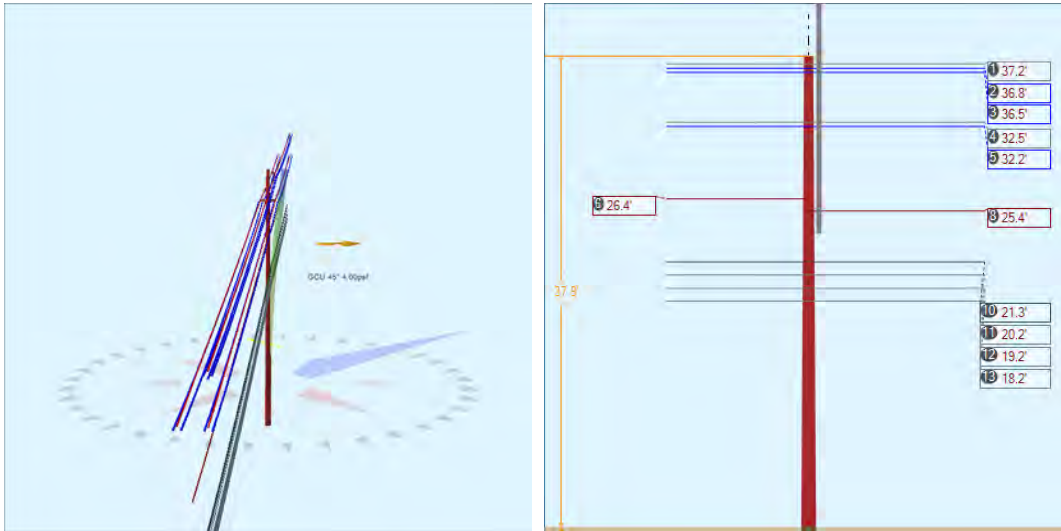
Telco	TELE 1.5	Unknown, COMMUNICATION	21.23	7.74	1.5000	1.90	0.900	119.9	137.5	119.9	2,000	-15,927	98	1,375	-14,453
Telco	TELE 1.5	Unknown, COMMUNICATION	21.23	7.74	1.5000	2.07	0.900	128.4	317.7	128.4	2,000	16,064	105	1,470	17,640
Totals:												412	585	10,658	11,655

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-15KVA	KU, UTILITY	30.33	21.70	220.0	220.0	335.00	34.00	--	22.00	--	-1,114	1,041	-73
Totals:												-1,114	1,041	-73

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	41.67	0.00	50.0	50.0	11.00	4.75	11.50	25	104	129	
Suspension	Suspension 11.50"	Power, UTILITY	36.25	0.00	50.0	50.0	11.00	4.75	11.50	25	91	116	
Suspension	Suspension 11.50"	Power, UTILITY	36.25	0.00	230.0	230.0	11.00	4.75	11.50	-25	91	66	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.71	0.00	317.7	317.7	2.00	3.00	3.19	1	13	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.55	0.00	47.6	317.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.54	0.00	47.6	317.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.22	0.00	47.6	317.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.23	0.00	47.6	317.6	5.00	3.00	0.00	6	0	6	
Totals:											48	299	347

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.99	34.01	11.86	23.85	7.96	13.05	1.60e+6	60.00	57.00	42.30	26,899	268.57	3.52

Pole Num:	479W - 500-57-50	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.19	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.06	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.992556 Deg	Longitude:	-84.436289 Deg	Elevation:	882.395332956043		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	59.4	0.0
Groundline	59.4	0.0
Vertical	24.2	25.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	53,542	27.1
Groundline	53,542	27.1
GL Allowable	91,296	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 27.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,231	63.3	39,289	73.4	43.0	2,910	2,367	22	2,932	43.1
Comms	394	20.3	8,216	15.3	9.0	609	785	7	616	9.1
Pole	201	10.3	3,842	7.2	4.2	285	2,187	20	305	4.5
Risers	111	5.7	1,867	3.5	2.0	138	96	1	139	2.0
Insulators	9	0.4	329	0.6	0.4	24	108	1	25	0.4
Pole Load	1,945	100.0	53,542	100.0	58.7	3,966	5,543	51	4,016	59.1
Pole Reserve Capacity			37,754		41.4	2,834			2,784	40.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 27.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	906	46.6	31,383	58.6	34.4	2,324	2,356	22	2,346	34.5
KU, UTILITY	443	22.8	10,080	18.8	11.0	747	178	2	748	11.0
Unknown, COMMUNICATION	394	20.3	8,237	15.4	9.0	610	823	8	618	9.1
Pole	201	10.3	3,842	7.2	4.2	285	2,187	20	305	4.5
Totals:	1,945	100.0	53,542	100.0	58.7	3,966	5,543	51	4,016	59.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	15.20	0.5630	0.21	0.291	127.4	137.7	127.4	5,010	-65,366	19	1,373	-63,975
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	15.20	0.5630	0.06	0.291	69.8	317.9	69.8	5,010	65,974	10	751	66,736
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	11.20	1.1080	1.49	1.093	127.4	137.7	127.4	3,200	-41,376	52	2,058	-39,266
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	19.20	1.1080	1.49	1.093	127.4	137.7	127.4	3,200	-41,376	52	2,058	-39,266
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	11.20	1.1080	0.71	1.093	69.8	317.9	69.8	3,200	41,761	29	1,126	42,916
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	19.20	1.1080	0.71	1.093	69.8	317.9	69.8	3,200	41,761	29	1,126	42,916
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	15.20	1.1080	1.49	1.093	127.4	137.7	127.4	3,200	-41,002	53	2,039	-38,910

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	15.20	1.1080	0.71	1.093	69.8	317.9	69.8	3,200	41,384	29	1,116	42,528
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	32.50	15.47	0.5630	0.21	0.291	127.4	137.7	127.4	5,010	-57,159	20	1,200	-55,938
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	32.50	15.47	0.5630	0.06	0.291	69.8	317.9	69.8	5,010	57,691	11	657	58,358
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	11.47	1.1080	1.49	1.093	127.4	137.7	127.4	3,200	-36,134	56	1,797	-34,281
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	19.47	1.1080	1.49	1.093	127.4	137.7	127.4	3,200	-36,134	56	1,797	-34,281
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	11.47	1.1080	0.71	1.093	69.8	317.9	69.8	3,200	36,470	31	983	37,484
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	19.47	1.1080	0.71	1.093	69.8	317.9	69.8	3,200	36,470	31	983	37,484
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	32.50	15.47	0.5630	0.21	0.291	127.4	137.7	127.4	5,010	-57,159	-20	1,200	-55,978
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	32.50	15.47	0.5630	0.06	0.291	69.8	317.9	69.8	5,010	57,691	-11	657	58,336
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	11.47	1.1080	1.49	1.093	127.4	137.7	127.4	3,200	-36,134	-56	1,797	-34,393
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	19.47	1.1080	1.49	1.093	127.4	137.7	127.4	3,200	-36,134	-56	1,797	-34,393
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	11.47	1.1080	0.71	1.093	69.8	317.9	69.8	3,200	36,470	-31	983	37,423
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.17	19.47	1.1080	0.71	1.093	69.8	317.9	69.8	3,200	36,470	-31	983	37,423
Secondary	TRIPLEX 4 AWG	KU, UTILITY	26.36	6.84	0.6800	1.41	0.164	127.4	137.7	127.4	916	-8,475	-11	1,081	-7,405
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	25.39	6.90	0.3250	0.08	0.107	69.8	317.9	69.8	1,684	15,147	4	398	15,549
											Totals:	10,841	265	27,962	39,068

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	21.29	7.14	1.3300	1.76	0.337	127.4	137.7	127.4	925	-6,913	56	1,354	-5,504
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	21.29	7.14	1.3300	0.89	0.337	69.8	317.9	69.8	925	6,978	31	741	7,749
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.25	7.20	0.6570	1.75	0.190	127.4	137.7	127.4	750	-5,330	32	814	-4,484
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.25	7.20	0.6570	0.87	0.190	69.8	317.9	69.8	750	5,380	18	445	5,843
	COMMUNICATION														
Telco	TELE 1.5	Unknown,	19.17	7.26	1.5000	2.05	0.900	127.4	137.7	127.4	2,000	-13,456	99	1,332	-12,025
	COMMUNICATION														

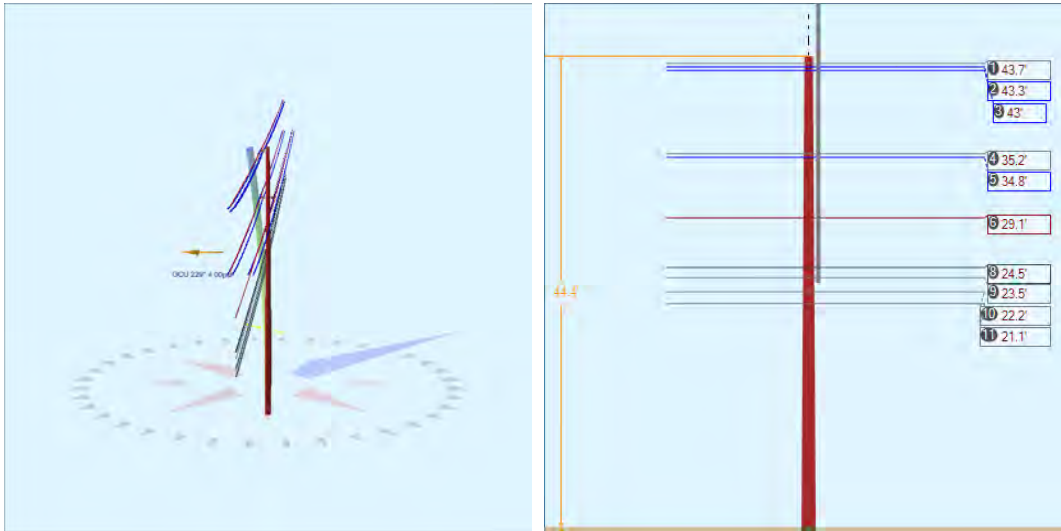
Telco	TELE 1.5	Unknown, COMMUNICATION	19.17	7.26	1.5000	1.01	0.900	69.8	317.9	69.8	2,000	13,581	54	729	14,364
Telco	TELE 1.5	Unknown, COMMUNICATION	18.16	7.32	1.5000	2.05	0.900	127.4	137.7	127.4	2,000	-12,749	100	1,262	-11,387
Telco	TELE 1.5	Unknown, COMMUNICATION	18.16	7.32	1.5000	1.01	0.900	69.8	317.9	69.8	2,000	12,868	55	691	13,613
Totals:											358	444	7,368	8,169	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 130.0°	KU, UTILITY	25.78	6.09	130.0	130.0	25.78	309.30	4.00	4.00	309.30	-6	982	976
Riser 150.0°	KU, UTILITY	25.00	6.09	150.0	150.0	25.00	299.95	4.00	4.00	299.95	-13	894	880
Totals:											-19	1,875	1,856

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Power, UTILITY	37.17	0.00	50.0	50.0	11.00	4.75	11.50	24	94	118	
Suspension	Power, UTILITY	32.50	0.00	50.0	50.0	11.00	4.75	11.50	25	82	107	
Suspension	Power, UTILITY	32.50	0.00	230.0	230.0	11.00	4.75	11.50	-25	82	57	
Spool	KU, UTILITY	26.36	0.00	137.7	137.7	2.00	3.00	3.19	-1	12	11	
Spool	KU, UTILITY	25.39	0.00	317.9	317.9	2.00	3.00	3.19	1	11	12	
Bolt	Unknown, COMMUNICATION	21.29	0.00	47.7	317.8	5.00	3.00	0.00	5	0	5	
Bolt	Unknown, COMMUNICATION	20.25	0.00	47.7	317.8	5.00	3.00	0.00	5	0	5	
Bolt	Unknown, COMMUNICATION	19.17	0.00	47.7	317.8	5.00	3.00	0.00	5	0	5	
Bolt	Unknown, COMMUNICATION	18.16	0.00	47.7	317.8	5.00	3.00	0.00	5	0	5	
Totals:										46	282	327

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.86	33.89	10.76	19.23	7.32	11.80	1.60e+6	60.00	57.00	37.81	22,919	229.05	4.13

Pole Num:	480W - 500-57 & 5797246	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.65	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.14	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.992637 Deg	Longitude:	-84.436492 Deg	Elevation:	885.428121086181		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	53.1	0.0
Groundline	53.1	0.0
Vertical	20.8	28.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	70,296	227.7
Groundline	70,296	227.7
GL Allowable	134,234	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,343	62.0	51,329	73.0	38.2	2,595	2,495	18	2,612	38.4
Comms	487	22.5	11,585	16.5	8.6	586	834	6	591	8.7
Pole	276	12.8	6,063	8.6	4.5	306	3,217	23	329	4.8
Risers	50	2.3	948	1.4	0.7	48	54	0	48	0.7
Insulators	8	0.4	371	0.5	0.3	19	104	1	19	0.3
Pole Load	2,165	100.0	70,296	100.0	52.4	3,553	6,706	47	3,601	53.0
Pole Reserve Capacity			63,938		47.6	3,247			3,199	47.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,283	59.3	49,637	70.6	37.0	2,509	2,501	18	2,527	37.2
KU, UTILITY	119	5.5	2,986	4.3	2.2	151	115	1	152	2.2
Unknown, COMMUNICATION	487	22.5	11,610	16.5	8.7	587	872	6	593	8.7
Pole	276	12.8	6,063	8.6	4.5	306	3,217	23	329	4.8
Totals:	2,165	100.0	70,296	100.0	52.4	3,553	6,706	47	3,601	53.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.67	15.52	0.5630	0.06	0.291	69.8	137.9	69.8	5,010	918	12	945	1,875
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.67	15.52	0.5630	0.25	0.291	139.9	317.3	139.9	5,010	1,373	24	1,894	3,291
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.33	11.52	1.1080	0.71	1.093	69.8	137.9	69.8	3,200	582	34	1,418	2,034
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.33	19.52	1.1080	0.71	1.093	69.8	137.9	69.8	3,200	582	34	1,418	2,034
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.33	11.52	1.1080	1.69	1.093	139.9	317.3	139.9	3,200	870	68	2,842	3,780
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.33	19.52	1.1080	1.69	1.093	139.9	317.3	139.9	3,200	870	68	2,842	3,780
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.00	15.52	1.1080	0.71	1.093	69.8	137.9	69.8	3,200	577	34	1,408	2,019

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.00	15.52	1.1080	1.69	1.093	139.9	317.3	139.9	3,200	863	68	2,821	3,752
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.17	16.04	0.5630	0.06	0.291	69.8	137.9	69.8	5,010	739	-14	761	1,487
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.17	16.04	0.5630	0.25	0.291	139.9	317.3	139.9	5,010	1,106	-27	1,525	2,603
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.84	12.04	1.1080	0.71	1.093	69.8	137.9	69.8	3,200	468	-38	1,140	1,570
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.84	20.04	1.1080	0.71	1.093	69.8	137.9	69.8	3,200	468	-38	1,140	1,570
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.84	12.04	1.1080	1.69	1.093	139.9	317.3	139.9	3,200	700	-77	2,285	2,908
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.84	20.04	1.1080	1.69	1.093	139.9	317.3	139.9	3,200	700	-77	2,285	2,908
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.17	16.04	0.5630	0.06	0.291	69.8	137.9	69.8	5,010	739	14	761	1,514
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.17	16.04	0.5630	0.25	0.291	139.9	317.3	139.9	5,010	1,106	27	1,525	2,658
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.83	12.04	1.1080	0.71	1.093	69.8	137.9	69.8	3,200	468	38	1,140	1,646
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.83	20.04	1.1080	0.71	1.093	69.8	137.9	69.8	3,200	468	38	1,140	1,646
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.83	12.04	1.1080	1.69	1.093	139.9	317.3	139.9	3,200	699	77	2,285	3,061
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.83	20.04	1.1080	1.69	1.093	139.9	317.3	139.9	3,200	699	77	2,285	3,061
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.12	7.42	0.3250	0.08	0.107	69.8	137.9	69.8	1,684	206	12	489	707
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.12	7.42	0.3250	0.33	0.107	139.9	317.3	139.9	1,684	308	23	980	1,311
Totals:											15,509	377	35,330	51,216	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.47	7.70	1.3300	0.89	0.337	69.8	137.9	69.8	925	95	35	912	1,042
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.47	7.70	1.3300	1.97	0.337	139.9	317.3	139.9	925	142	71	1,826	2,039
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.49	7.76	0.6570	0.87	0.190	69.8	137.9	69.8	750	74	20	553	648
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.49	7.76	0.6570	1.95	0.190	139.9	317.3	139.9	750	111	41	1,109	1,260
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.18	7.84	1.5000	1.01	0.900	69.8	137.9	69.8	2,000	186	63	903	1,152
		COMMUNICATION													

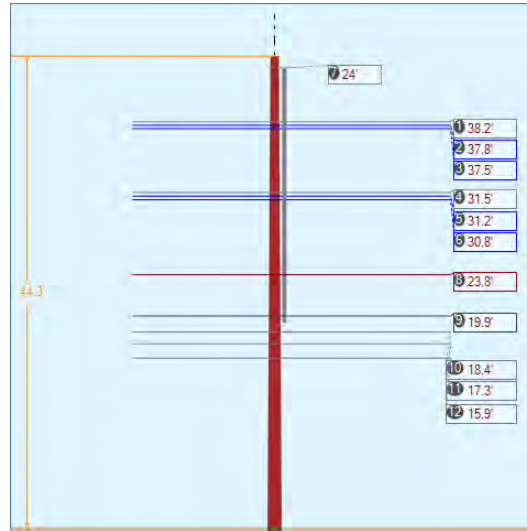
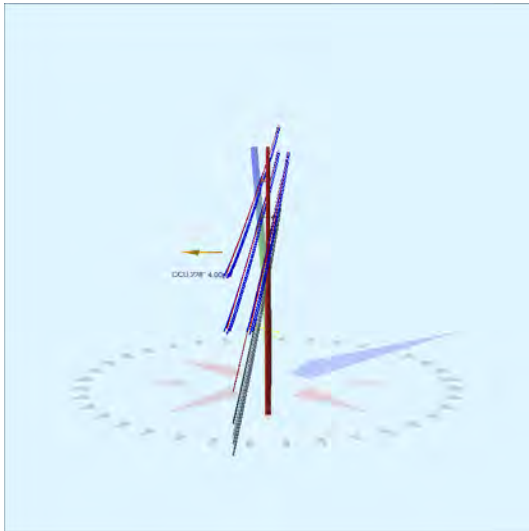
Telco	TELE 1.5	Unknown, COMMUNICATION	22.18	7.84	1.5000	2.31	0.900	139.9	317.3	139.9	2,000	278	125	1,810	2,214
Telco	TELE 1.5	Unknown, COMMUNICATION	21.05	7.91	1.5000	1.01	0.900	69.8	137.9	69.8	2,000	177	63	857	1,097
Telco	TELE 1.5	Unknown, COMMUNICATION	21.05	7.91	1.5000	2.31	0.900	139.9	317.3	139.9	2,000	264	127	1,718	2,108
Totals:											1,327	544	9,688	11,559	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser KU, UTILITY	28.64	6.81	360.0	360.0	28.64	343.72	4.00	4.00	343.72	-11	957	946
Totals:											-11	957	946

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50" Power, UTILITY	43.67	0.00	230.0	230.0	11.00	4.75	11.50	27	116	143	
Suspension	Suspension 11.50" Power, UTILITY	35.17	0.00	50.0	50.0	11.00	4.75	11.50	-28	93	65	
Suspension	Suspension 11.50" Power, UTILITY	35.17	0.00	230.0	230.0	11.00	4.75	11.50	28	93	121	
Spool	Spool Insulator - 25 kV KU, UTILITY	29.12	0.00	227.6	137.6	2.00	3.00	3.19	2	14	16	
Bolt	Three Bolt Unknown, COMMUNICATION	24.47	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	23.49	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	22.18	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt Unknown, COMMUNICATION	21.05	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6	
Totals:										54	316	370

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.20	33.88	12.24	22.25	7.96	13.42	1.60e+6	60.00	57.00	44.35	32,255	322.39	4.81

Pole Num:	481W - 500-56-50	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.66	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.13	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.992811 Deg	Longitude:	-84.436589 Deg	Elevation:	886.834217577595		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.5	0.0
Groundline	45.5	0.0
Vertical	17.9	25.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	60,013	227.2
Groundline	60,013	227.2
GL Allowable	134,173	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,331	63.4	44,501	74.2	33.2	2,243	2,996	21	2,264	33.3
Comms	443	21.1	8,441	14.1	6.3	426	806	6	431	6.3
Pole	276	13.2	6,077	10.1	4.5	306	3,215	23	329	4.8
Risers	42	2.0	657	1.1	0.5	33	46	0	33	0.5
Insulators	8	0.4	337	0.6	0.3	17	104	1	18	0.3
Pole Load	2,100	100.0	60,013	100.0	44.7	3,025	7,167	51	3,076	45.2
Pole Reserve Capacity			74,160		55.3	3,775			3,724	54.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,282	61.0	43,386	72.3	32.3	2,187	3,003	21	2,208	32.5
KU, UTILITY	100	4.7	2,084	3.5	1.6	105	104	1	106	1.6
Unknown, COMMUNICATION	443	21.1	8,466	14.1	6.3	427	844	6	433	6.4
Pole	276	13.2	6,077	10.1	4.5	306	3,215	23	329	4.8
Totals:	2,100	100.0	60,013	100.0	44.7	3,025	7,167	51	3,076	45.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.17	15.86	0.5630	0.10	0.291	85.7	137.3	85.7	5,010	178	16	1,014	1,208
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.17	15.86	0.5630	0.18	0.291	117.0	317.0	117.0	5,010	823	22	1,384	2,229
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.83	11.86	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	113	45	1,521	1,678
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.83	19.86	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	113	45	1,521	1,678
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.83	11.86	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	521	61	2,076	2,658
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.83	19.86	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	521	61	2,076	2,658
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.50	15.86	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	112	45	1,507	1,664

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.50	15.86	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	517	62	2,057	2,636
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	31.50	16.27	0.5630	0.10	0.291	85.7	137.3	85.7	5,010	147	-18	837	966
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	31.50	16.27	0.5630	0.18	0.291	117.0	317.0	117.0	5,010	679	-24	1,143	1,798
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	12.27	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	93	-49	1,253	1,296
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	20.27	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	93	-49	1,253	1,296
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	12.27	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	429	-67	1,710	2,072
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	20.27	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	429	-67	1,710	2,072
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	30.83	16.27	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	92	-49	1,239	1,282
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	30.83	16.27	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	425	-67	1,692	2,049
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	31.50	16.27	0.5630	0.10	0.291	85.7	137.3	85.7	5,010	147	18	837	1,001
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	31.50	16.27	0.5630	0.18	0.291	117.0	317.0	117.0	5,010	679	24	1,143	1,846
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	12.27	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	93	49	1,253	1,395
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	20.27	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	93	49	1,253	1,395
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	12.27	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	429	67	1,710	2,206
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	31.17	20.27	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	429	67	1,710	2,206
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	30.83	16.27	1.1080	0.91	1.093	85.7	137.3	85.7	3,200	92	49	1,239	1,381
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	30.83	16.27	1.1080	1.34	1.093	117.0	317.0	117.0	3,200	425	67	1,692	2,184
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.79	7.74	0.3250	0.12	0.107	85.7	137.3	85.7	1,684	37	15	490	543
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	23.79	7.74	0.3250	0.23	0.107	117.0	317.0	117.0	1,684	172	20	670	862
Totals:											7,882	393	35,987	44,261	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0 COMMUNICATION	19.88	7.98	1.3300	1.11	0.337	85.7	137.3	85.7	925	17	45	909	971
CATV	CATV 1.0 COMMUNICATION	19.88	7.98	1.3300	1.59	0.337	117.0	317.0	117.0	925	79	61	1,241	1,382
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	18.39	8.07	0.6570	1.10	0.190	85.7	137.3	85.7	750	13	26	532	571

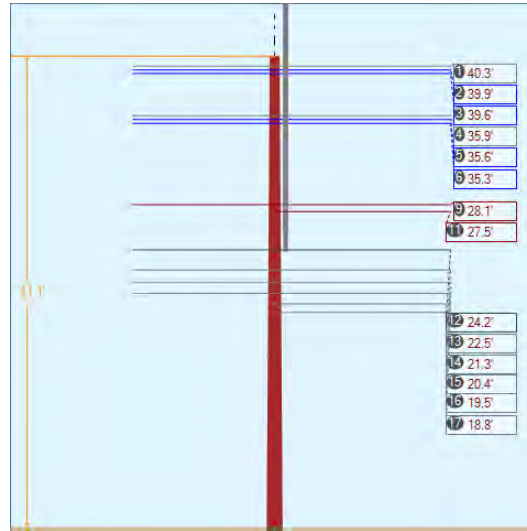
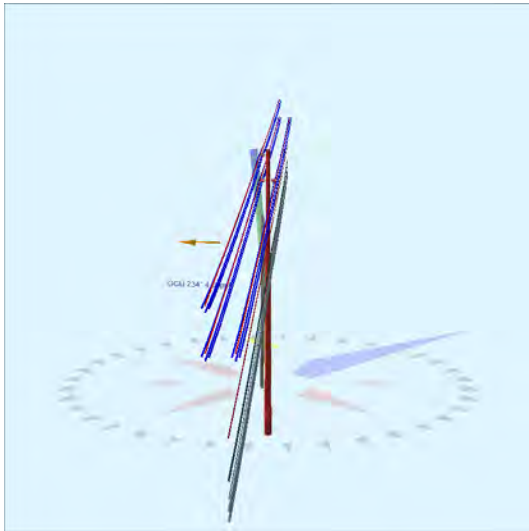
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.39	8.07	0.6570	1.58	0.190	117.0	317.0	117.0	750	59	35	726	821
Telco	TELE 1.5	Unknown, COMMUNICATION	17.27	8.14	1.5000	1.28	0.900	85.7	137.3	85.7	2,000	32	80	863	975
Telco	TELE 1.5	Unknown, COMMUNICATION	17.27	8.14	1.5000	1.85	0.900	117.0	317.0	117.0	2,000	149	109	1,178	1,436
Telco	TELE 1.5	Unknown, COMMUNICATION	15.92	8.23	1.5000	1.28	0.900	85.7	137.3	85.7	2,000	30	81	796	906
Telco	TELE 1.5	Unknown, COMMUNICATION	15.92	8.23	1.5000	1.85	0.900	117.0	317.0	117.0	2,000	137	110	1,087	1,334
Totals:											516	547	7,333	8,395	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	KU, UTILITY	23.97	6.81	360.0	360.0	23.97	287.61	4.00	4.00	287.61	-9	663	654
Totals:											-9	663	654

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Power, UTILITY	38.17	0.00	230.0	230.0	11.00	4.75	11.50	28	101	129	
Suspension	Power, UTILITY	31.50	0.00	50.0	50.0	11.00	4.75	11.50	-28	84	55	
Suspension	Power, UTILITY	31.50	0.00	230.0	230.0	11.00	4.75	11.50	28	84	112	
Spool	KU, UTILITY	23.79	0.00	227.2	137.2	2.00	3.00	3.19	2	11	14	
Bolt	Unknown, COMMUNICATION	19.88	0.00	227.2	137.2	5.00	3.00	0.00	6	0	6	
Bolt	Unknown, COMMUNICATION	18.39	0.00	227.2	137.2	5.00	3.00	0.00	6	0	6	
Bolt	Unknown, COMMUNICATION	17.27	0.00	227.2	137.2	5.00	3.00	0.00	6	0	6	
Bolt	Unknown, COMMUNICATION	15.92	0.00	227.2	137.2	5.00	3.00	0.00	7	0	7	
Totals:										56	280	335

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.79	33.55	12.35	22.07	7.96	13.42	1.60e+6	60.00	57.00	44.34	39,946	400.41	5.59

Pole Num:	482W - 500-56	Pole Length / Class:	50 / 1	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.88	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.992981 Deg	Longitude:	-84.436884 Deg	Elevation:	889.881048941138		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	74.2	0.0
Groundline	74.2	0.0
Vertical	22.6	27.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	110,721	274.7
Groundline	110,721	274.7
GL Allowable	150,987	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 274.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,068	22.3	38,273	34.6	25.4	1,720	3,661	24	1,744	25.6
Comms	3,404	71.2	65,961	59.6	43.7	2,965	1,329	9	2,973	43.7
Pole	205	4.3	4,219	3.8	2.8	190	3,309	22	211	3.1
Risers	99	2.1	2,010	1.8	1.3	90	223	1	92	1.3
Insulators	7	0.1	258	0.2	0.2	12	127	1	12	0.2
Pole Load	4,783	100.0	110,721	100.0	73.3	4,976	8,650	57	5,033	74.0
Pole Reserve Capacity			40,266		26.7	1,824			1,767	26.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 274.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	901	18.8	33,728	30.5	22.3	1,516	3,623	24	1,540	22.6
KU, UTILITY	273	5.7	6,821	6.2	4.5	307	332	2	309	4.5
Unknown, COMMUNICATION	3,404	71.2	65,954	59.6	43.7	2,964	1,386	9	2,973	43.7
Pole	205	4.3	4,219	3.8	2.8	190	3,309	22	211	3.1
Totals:	4,783	100.0	110,721	100.0	73.3	4,976	8,650	57	5,033	74.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.25	15.85	0.5630	0.18	0.291	117.0	137.0	117.0	5,010	-149,159	16	975	-148,168
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.25	15.85	0.5630	0.21	0.291	128.4	316.9	128.4	5,010	149,396	17	1,068	150,481
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	11.85	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-94,482	44	1,463	-92,976
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	19.85	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-94,482	44	1,463	-92,976
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	11.85	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	94,632	48	1,602	96,282
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	19.85	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	94,632	48	1,602	96,282
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.58	15.85	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-93,693	44	1,451	-92,199

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.58	15.85	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	93,842	48	1,589	95,479
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.92	16.14	0.5630	0.18	0.291	117.0	137.0	117.0	5,010	-133,101	-17	870	-132,247
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.92	16.14	0.5630	0.21	0.291	128.4	316.9	128.4	5,010	133,312	-18	953	134,246
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	12.14	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-84,225	-46	1,304	-82,968
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	20.14	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-84,225	-46	1,304	-82,968
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	12.14	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	84,359	-51	1,428	85,736
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	20.14	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	84,359	-51	1,428	85,736
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.25	16.14	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-83,436	-47	1,292	-82,191
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.25	16.14	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	83,569	-51	1,415	84,932
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.92	16.14	0.5630	0.18	0.291	117.0	137.0	117.0	5,010	-133,101	17	870	-132,214
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.92	16.14	0.5630	0.21	0.291	128.4	316.9	128.4	5,010	133,312	18	953	134,283
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	12.14	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-84,225	46	1,304	-82,875
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	20.14	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-84,225	46	1,304	-82,875
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	12.14	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	84,359	51	1,428	85,838
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.58	20.14	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	84,359	51	1,428	85,838
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.25	16.14	1.1080	1.34	1.093	117.0	137.0	117.0	3,200	-83,436	47	1,292	-82,098
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.25	16.14	1.1080	1.51	1.093	128.4	316.9	128.4	3,200	83,569	51	1,415	85,035
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.14	7.64	0.3250	0.23	0.107	117.0	137.0	117.0	1,684	-35,056	-14	529	-34,541
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.14	7.64	0.3250	0.27	0.107	128.4	316.9	128.4	1,684	35,112	-15	580	35,676
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	27.55	7.68	0.3250	0.27	0.107	128.4	316.9	128.5	150	3,061	16	567	3,645
Totals:											5,023	296	32,874	38,194	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.21	7.90	1.3300	1.59	0.337	117.0	137.0	117.0	925	-16,565	-41	1,010	-15,596
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.21	7.90	1.3300	1.77	0.337	128.4	316.9	128.4	925	16,592	-45	1,106	17,653
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.47	8.01	0.6570	1.57	0.190	117.0	137.0	117.0	750	-12,464	-24	592	-11,895
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.47	8.01	0.6570	1.76	0.190	128.4	316.9	128.4	750	12,483	-26	649	13,106
Telco	TELE 1.5	Unknown,	21.35	8.08	1.5000	1.85	0.900	117.0	137.0	117.0	2,000	-31,581	-73	973	-30,681
Telco	TELE 1.5	Unknown,	21.35	8.08	1.5000	2.07	0.900	128.4	316.9	128.4	2,000	31,631	-80	1,066	32,617
Telco	TELE 1.5	Unknown,	20.42	8.14	1.5000	1.85	0.900	117.0	137.0	117.0	2,000	-30,209	-73	931	-29,351
Telco	TELE 1.5	Unknown,	20.42	8.14	1.5000	2.07	0.900	128.4	316.9	128.4	2,000	30,257	-80	1,019	31,196
Telco	TELE 1.5	Unknown,	19.51	8.20	1.5000	2.07	0.900	128.4	316.9	128.4	2,000	28,906	89	974	29,969
Telco	TELE 1.5	Unknown,	18.75	8.25	1.5000	2.07	0.900	128.4	316.9	128.4	2,000	27,782	90	936	28,808
Totals:											56,832	-262	9,255	65,825	

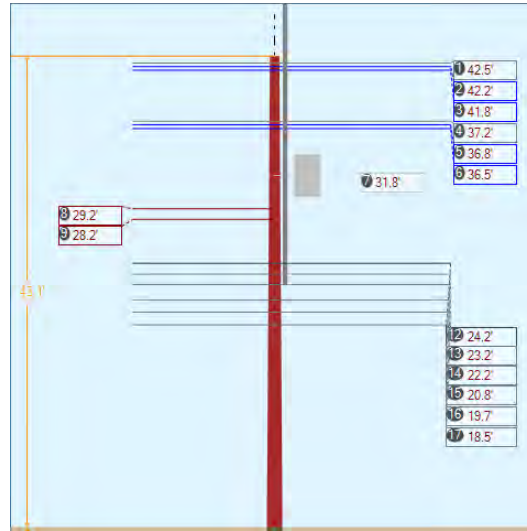
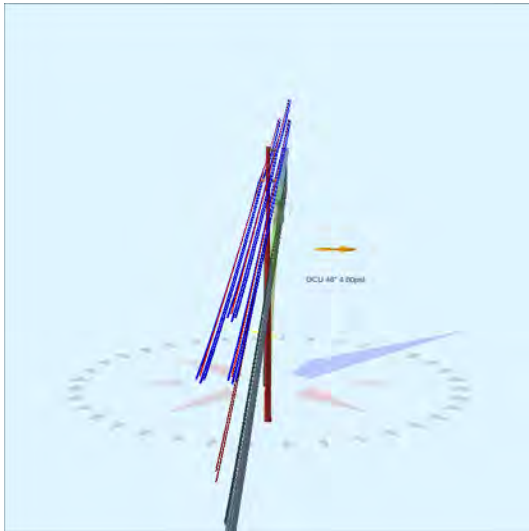
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 240.0°	KU, UTILITY	29.85	7.29	240.0	240.0	29.85	358.17	4.00	4.00	358.17	27	109	135
Riser 200.0°	KU, UTILITY	29.85	7.29	200.0	200.0	29.85	358.17	4.00	4.00	358.17	9	589	597
Riser 180.0°	KU, UTILITY	29.80	7.29	180.0	180.0	29.80	357.60	4.00	4.00	357.60	-3	849	846
Riser 260.0°	KU, UTILITY	27.77	7.29	260.0	260.0	27.77	333.19	4.00	4.00	333.19	29	398	427
Totals:											61	1,944	2,006

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension	Power, UTILITY	40.25	0.00	230.0	230.0	11.00	4.75	11.50	20	81	101
Suspension	Power, UTILITY	35.92	0.00	50.0	50.0	11.00	4.75	11.50	-20	72	52
Suspension	Power, UTILITY	35.92	0.00	230.0	230.0	11.00	4.75	11.50	20	72	92
Spool	KU, UTILITY	28.14	0.00	47.0	137.0	2.00	3.00	3.19	-2	10	8
Spool	KU, UTILITY	27.55	0.00	316.9	316.9	2.00	3.00	3.19	2	10	12

Bolt	Three Bolt	Unknown, COMMUNICATION	24.21	0.00	47.0	137.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	22.47	0.00	47.0	137.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	21.35	0.00	47.0	137.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	20.42	0.00	47.0	137.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	19.51	0.00	316.9	406.9	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	18.75	0.00	316.9	406.9	5.00	3.00	0.00	5	0	5
Totals:										12	245	258

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	27.94	33.91	12.71	24.95	8.60	13.96	1.60e+6	60.00	57.00	41.12	38,299	382.73	4.42

Pole Num:	483W- 500-55	Pole Length / Class:	50 / 1	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.87	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	44.65	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.993289 Deg	Longitude:	-84.437163 Deg	Elevation:	891.406750919406		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.3	0.0
Groundline	56.3	0.0
Vertical	28.2	29.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	88,356	64.1
Groundline	88,356	64.1
GL Allowable	159,665	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 64.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,597	57.5	59,108	66.9	37.0	2,507	3,821	24	2,531	37.2
Comms	792	28.5	18,046	20.4	11.3	765	1,738	11	776	11.4
PowerEquipments	53	1.9	3,953	4.5	2.5	168	1,216	8	175	2.6
Pole	275	9.9	5,902	6.7	3.7	250	3,558	22	273	4.0
Risers	54	1.9	957	1.1	0.6	41	103	1	41	0.6
Insulators	9	0.3	390	0.4	0.2	17	127	1	17	0.3
Pole Load	2,779	100.0	88,356	100.0	55.3	3,747	10,563	67	3,813	56.1
Pole Reserve Capacity			71,309		44.7	3,053			2,987	43.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 64.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,280	46.1	50,070	56.7	31.4	2,123	3,814	24	2,147	31.6
KU, UTILITY	432	15.6	14,300	16.2	9.0	606	1,396	9	615	9.0
Unknown, COMMUNICATION	792	28.5	18,084	20.5	11.3	767	1,795	11	778	11.4
Pole	275	9.9	5,902	6.7	3.7	250	3,558	22	273	4.0
Totals:	2,779	100.0	88,356	100.0	55.3	3,747	10,563	67	3,813	56.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.50	15.84	0.5630	0.21	0.291	127.4	136.9	127.4	5,010	62,959	23	1,603	64,586
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.50	15.84	0.5630	0.22	0.291	131.2	316.9	131.2	5,010	-62,959	24	1,651	-61,284
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.17	11.84	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	39,898	65	2,407	42,369
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.17	19.84	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	39,898	65	2,407	42,369
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.17	11.84	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-39,898	67	2,478	-37,353
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.17	19.84	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-39,898	67	2,478	-37,353

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.83	15.84	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	39,583	65	2,388	42,035
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.83	15.84	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-39,583	67	2,459	-37,057
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	16.19	0.5630	0.21	0.291	127.4	136.9	127.4	5,010	55,059	25	1,402	56,486
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	16.19	0.5630	0.22	0.291	131.2	316.9	131.2	5,010	-55,059	26	1,444	-53,589
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	12.19	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	34,852	70	2,102	37,024
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	20.19	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	34,852	70	2,102	37,024
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	12.19	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-34,852	72	2,165	-32,615
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	20.19	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-34,852	72	2,165	-32,615
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	16.19	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	34,536	70	2,083	36,690
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	16.19	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-34,536	72	2,145	-32,319
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	16.19	0.5630	0.21	0.291	127.4	136.9	127.4	5,010	55,059	-25	1,402	56,436
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	16.19	0.5630	0.22	0.291	131.2	316.9	131.2	5,010	-55,059	-26	1,444	-53,640
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	12.19	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	34,852	-70	2,102	36,884
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	20.19	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	34,852	-70	2,102	36,884
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	12.19	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-34,852	-72	2,165	-32,759
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	20.19	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-34,852	-72	2,165	-32,759
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	16.19	1.1080	1.49	1.093	127.4	136.9	127.4	3,200	34,536	-70	2,083	36,549
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	16.19	1.1080	1.55	1.093	131.2	316.9	131.2	3,200	-34,536	-72	2,145	-32,463
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.16	7.71	0.3250	1.30	0.107	127.4	136.9	127.4	450	3,879	7	854	4,740
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.19	7.77	0.3250	1.30	0.107	127.4	136.9	127.4	450	3,751	7	826	4,583
Totals:											7,630	454	50,768	58,853	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.16	8.03	1.3300	1.76	0.337	127.4	136.9	127.4	925	6,608	64	1,569	8,242
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.16	8.03	1.3300	1.82	0.337	131.2	316.9	131.2	925	-6,608	66	1,616	-4,926
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.18	8.10	0.6570	1.75	0.190	127.4	136.9	127.4	750	5,141	37	952	6,130
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.18	8.10	0.6570	1.81	0.190	131.2	316.9	131.2	750	-5,141	38	980	-4,123
Telco	TELE 1.5	Unknown, COMMUNICATION	22.22	8.16	1.5000	2.05	0.900	127.4	136.9	127.4	2,000	13,139	114	1,577	14,830
Telco	TELE 1.5	Unknown, COMMUNICATION	22.22	8.16	1.5000	2.13	0.900	131.2	316.9	131.2	2,000	-13,139	117	1,624	-11,399
Telco	TELE 1.5	Unknown, COMMUNICATION	20.81	8.25	1.5000	2.05	0.900	127.4	136.9	127.4	2,000	12,309	115	1,478	13,901
Telco	TELE 1.5	Unknown, COMMUNICATION	20.81	8.25	1.5000	2.13	0.900	131.2	316.9	131.2	2,000	-12,309	118	1,521	-10,670
Telco	TELE 1.5	Unknown, COMMUNICATION	19.71	8.32	1.5000	2.05	0.900	127.4	136.9	127.4	2,000	11,657	116	1,399	13,172
Telco	TELE 1.5	Unknown, COMMUNICATION	19.71	8.32	1.5000	2.13	0.900	131.2	316.9	131.2	2,000	-11,657	119	1,441	-10,097
Telco	TELE 1.5	Unknown, COMMUNICATION	18.54	8.40	1.5000	2.05	0.900	127.4	136.9	127.4	2,000	10,962	117	1,316	12,395
Telco	TELE 1.5	Unknown, COMMUNICATION	18.54	8.40	1.5000	2.13	0.900	131.2	316.9	131.2	2,000	-10,962	120	1,355	-9,487
Totals:											0	1,140	16,828	17,969	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-50KVA	KU, UTILITY	31.77	23.04	50.0	50.0	640.00	47.00	--	24.00	--	2,264	1,671	3,935
Totals:											2,264	1,671	3,935

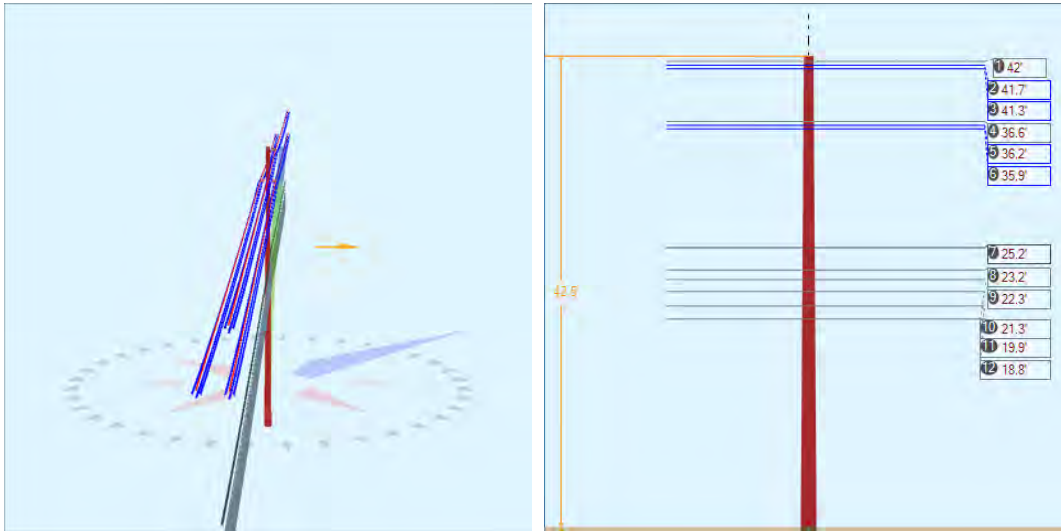
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 240.0°	KU, UTILITY	26.81	7.29	240.0	240.0	26.81	321.74	4.00	4.00	321.74	-16	228	212
Riser 270.0°	KU, UTILITY	27.44	7.29	270.0	270.0	27.44	329.24	4.00	4.00	329.24	-15	756	741
Totals:											-30	984	953

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension Suspension 11.50"	Power, UTILITY	42.50	0.00	50.0	50.0	11.00	4.75	11.50	27	108	135

Suspension	Suspension 11.50"	Power, UTILITY	37.17	0.00	50.0	50.0	11.00	4.75	11.50	27	95	122
Suspension	Suspension 11.50"	Power, UTILITY	37.17	0.00	230.0	230.0	11.00	4.75	11.50	-27	95	67
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.16	0.00	136.9	136.9	2.00	3.00	3.19	1	13	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.19	0.00	136.9	136.9	2.00	3.00	3.19	1	13	13
Bolt	Three Bolt	Unknown, COMMUNICATION	24.16	0.00	46.9	136.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.18	0.00	46.9	136.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.22	0.00	46.9	136.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.81	0.00	46.9	136.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.71	0.00	46.9	136.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.54	0.00	46.9	136.9	5.00	3.00	0.00	6	0	6
Totals:										65	323	389

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.16	34.01	12.92	28.09	8.60	14.22	1.60e+6	60.00	57.00	43.13	37,498	374.57	3.55

Pole Num:	484W - 800500-54	Pole Length / Class:	50 / 1	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.51	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	44.38	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.993449 Deg	Longitude:	-84.437497 Deg	Elevation:	896.139552387444		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	48.8	0.0
Groundline	48.8	0.0
Vertical	20.5	28.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	75,312	47.0
Groundline	75,312	47.0
GL Allowable	156,847	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 47.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,346	56.5	51,818	68.8	33.0	2,237	3,145	20	2,257	33.2
Comms	745	31.3	17,168	22.8	11.0	741	1,457	9	750	11.0
Pole	282	11.8	5,952	7.9	3.8	257	3,477	22	279	4.1
Insulators	8	0.3	374	0.5	0.2	16	120	1	17	0.2
Pole Load	2,381	100.0	75,312	100.0	48.0	3,251	8,199	52	3,303	48.6
Pole Reserve Capacity			81,535		52.0	3,549			3,497	51.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 47.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,354	56.9	52,153	69.3	33.3	2,251	3,208	20	2,271	33.4
Unknown, COMMUNICATION	745	31.3	17,206	22.9	11.0	743	1,514	10	752	11.1
Pole	282	11.8	5,952	7.9	3.8	257	3,477	22	279	4.1
Totals:	2,381	100.0	75,312	100.0	48.0	3,251	8,199	52	3,303	48.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.00	15.83	0.5630	0.22	0.291	130.2	136.9	130.2	5,010	518	24	1,695	2,238
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.00	15.83	0.5630	0.10	0.291	86.6	317.2	86.6	5,010	584	16	1,128	1,727
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	11.83	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	328	68	2,544	2,941
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	19.83	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	328	68	2,544	2,941
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	11.83	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	370	45	1,692	2,107
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	19.83	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	370	45	1,692	2,107
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	15.83	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	326	68	2,524	2,918
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	15.83	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	367	45	1,679	2,091
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.58	16.18	0.5630	0.22	0.291	130.2	136.9	130.2	5,010	451	26	1,477	1,954
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.58	16.18	0.5630	0.10	0.291	86.6	317.2	86.6	5,010	508	17	982	1,508
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	12.18	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	286	73	2,214	2,573
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	20.18	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	286	73	2,214	2,573
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	12.18	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	322	49	1,472	1,843
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	20.18	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	322	49	1,472	1,843
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	16.18	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	283	74	2,193	2,550
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	16.18	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	319	49	1,459	1,827

Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.58	16.18	0.5630	0.22	0.291	130.2	136.9	130.2	5,010	451	-26	1,477	1,902
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.58	16.18	0.5630	0.10	0.291	86.6	317.2	86.6	5,010	508	-17	982	1,473
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	12.18	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	286	-73	2,214	2,426
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	20.18	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	286	-73	2,214	2,426
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	12.18	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	322	-49	1,472	1,745
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.25	20.18	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	322	-49	1,472	1,745
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	16.18	1.1080	1.54	1.093	130.2	136.9	130.2	3,200	283	-74	2,193	2,403
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.92	16.18	1.1080	0.92	1.093	86.6	317.2	86.6	3,200	319	-49	1,459	1,728
Totals:											8,743	380	42,464	51,587	

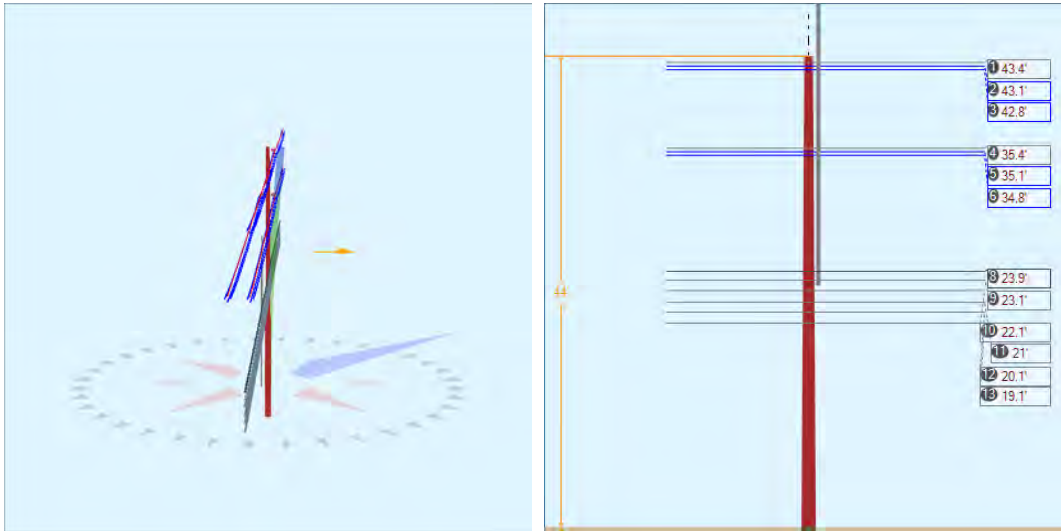
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.21	7.92	1.3300	1.80	0.337	130.2	136.9	130.2	925	57	68	1,752	1,877
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.21	7.92	1.3300	1.12	0.337	86.6	317.2	86.6	925	65	45	1,165	1,275
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.20	8.05	0.6570	1.79	0.190	130.2	136.9	130.2	750	43	39	1,019	1,101
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.20	8.05	0.6570	1.11	0.190	86.6	317.2	86.6	750	48	26	678	752
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.32	8.11	1.5000	2.11	0.900	130.2	136.9	130.2	2,000	110	121	1,695	1,926
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.32	8.11	1.5000	1.29	0.900	86.6	317.2	86.6	2,000	124	80	1,127	1,332
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.28	8.18	1.5000	2.11	0.900	130.2	136.9	130.2	2,000	105	122	1,616	1,842
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.28	8.18	1.5000	1.29	0.900	86.6	317.2	86.6	2,000	118	81	1,075	1,274
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	8.27	1.5000	2.11	0.900	130.2	136.9	130.2	2,000	98	123	1,514	1,736
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	19.94	8.27	1.5000	1.29	0.900	86.6	317.2	86.6	2,000	111	82	1,007	1,200
		COMMUNICATION													

Telco	TELE 1.5	Unknown, COMMUNICATION	18.78	8.34	1.5000	2.11	0.900	130.2	136.9	130.2	2,000	93	124	1,426	1,643
Telco	TELE 1.5	Unknown, COMMUNICATION	18.78	8.34	1.5000	1.29	0.900	86.6	317.2	86.6	2,000	104	83	949	1,135
Totals:											1,075	993	15,023	17,091	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	42.00	0.00	50.0	50.0	11.00	4.75	11.50	28	112	139
Suspension	Suspension 11.50"	Power, UTILITY	36.58	0.00	50.0	50.0	11.00	4.75	11.50	28	97	125
Suspension	Suspension 11.50"	Power, UTILITY	36.58	0.00	230.0	230.0	11.00	4.75	11.50	-28	97	69
Bolt	Three Bolt	Unknown, COMMUNICATION	25.21	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.20	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.32	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.28	0.00	47.0	317.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.94	0.00	47.0	317.0	5.00	3.00	0.00	7	0	7
Bolt	Three Bolt	Unknown, COMMUNICATION	18.78	0.00	47.0	317.0	5.00	3.00	0.00	7	0	7
Totals:										66	306	372

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.06	33.88	12.89	24.42	8.60	14.13	1.60e+6	60.00	57.00	42.49	40,089	399.95	4.88

Pole Num:	485W - 500-53	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.98	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.01	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.993713 Deg	Longitude:	-84.437704 Deg	Elevation:	889.936131011358		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.1	45.6
Groundline	39.1	45.6
Vertical	16.5	45.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,120	47.1
Groundline	51,120	47.1
GL Allowable	133,007	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 47.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	896	54.4	34,162	66.8	25.7	1,740	1,879	13	1,753	25.8
Comms	465	28.2	10,555	20.7	7.9	538	870	6	544	8.0
Pole	274	16.6	5,971	11.7	4.5	304	3,180	23	327	4.8
Risers	5	0.3	63	0.1	0.1	3	53	0	4	0.1
Insulators	8	0.5	369	0.7	0.3	19	120	1	20	0.3
Pole Load	1,648	100.0	51,120	100.0	38.4	2,604	6,101	43	2,647	38.9
Pole Reserve Capacity			81,887		61.6	4,196			4,153	61.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 47.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	904	54.9	34,493	67.5	25.9	1,757	1,941	14	1,771	26.0
Unknown, COMMUNICATION	465	28.2	10,593	20.7	8.0	540	927	7	546	8.0
Pole	274	16.6	5,971	11.7	4.5	304	3,180	23	327	4.8
KU, UTILITY	5	0.3	63	0.1	0.1	3	53	0	4	0.1
Totals:	1,648	100.0	51,120	100.0	38.4	2,604	6,101	43	2,647	38.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.42	15.52	0.5630	0.10	0.291	86.6	137.2	86.6	5,010	-325	15	1,165	855
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.42	15.52	0.5630	0.02	0.291	42.9	317.5	42.9	5,010	1,464	7	577	2,049
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.08	11.52	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-206	42	1,749	1,585
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.08	19.52	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-206	42	1,749	1,585
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.08	11.52	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	928	21	866	1,815
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.08	19.52	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	928	21	866	1,815
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	15.52	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-205	42	1,736	1,573

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	15.52	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	921	21	860	1,801
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.42	16.01	0.5630	0.10	0.291	86.6	137.2	86.6	5,010	-265	17	951	702
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.42	16.01	0.5630	0.02	0.291	42.9	317.5	42.9	5,010	1,194	8	471	1,674
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	12.01	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-168	47	1,424	1,303
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	20.01	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-168	47	1,424	1,303
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	12.01	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	756	23	705	1,485
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	20.01	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	756	23	705	1,485
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.75	16.01	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-166	47	1,411	1,292
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.75	16.01	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	749	23	699	1,471
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.42	16.01	0.5630	0.10	0.291	86.6	137.2	86.6	5,010	-265	-17	951	668
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	35.42	16.01	0.5630	0.02	0.291	42.9	317.5	42.9	5,010	1,194	-8	471	1,657
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	12.01	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-168	-47	1,424	1,209
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	20.01	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-168	-47	1,424	1,209
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	12.01	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	756	-23	705	1,438
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.08	20.01	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	756	-23	705	1,438
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.75	16.01	1.1080	0.92	1.093	86.6	137.2	86.6	3,200	-166	-47	1,411	1,197
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.75	16.01	1.1080	0.41	1.093	42.9	317.5	43.0	3,200	749	-23	699	1,424
											Totals:	8,673	211	25,150	34,034

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	23.91	7.72	1.3300	1.12	0.337	86.6	137.2	86.6	925	-33	44	1,104	1,115
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.91	7.72	1.3300	0.53	0.337	42.9	317.5	42.9	925	149	22	546	717
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.10	7.77	0.6570	1.11	0.190	86.6	137.2	86.6	750	-26	25	675	674
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.10	7.77	0.6570	0.51	0.190	42.9	317.5	42.9	750	117	12	334	463
		COMMUNICATION													

Telco	TELE 1.5	Unknown, COMMUNICATION	22.12	7.83	1.5000	1.29	0.900	86.6	137.2	86.6	2,000	-66	77	1,117	1,128
Telco	TELE 1.5	Unknown, COMMUNICATION	22.12	7.83	1.5000	0.60	0.900	42.9	317.5	42.9	2,000	298	38	553	889
Telco	TELE 1.5	Unknown, COMMUNICATION	21.04	7.89	1.5000	1.29	0.900	86.6	137.2	86.6	2,000	-63	78	1,062	1,078
Telco	TELE 1.5	Unknown, COMMUNICATION	21.04	7.89	1.5000	0.60	0.900	42.9	317.5	42.9	2,000	283	39	526	848
Telco	TELE 1.5	Unknown, COMMUNICATION	20.12	7.95	1.5000	1.29	0.900	86.6	137.2	86.6	2,000	-60	79	1,016	1,034
Telco	TELE 1.5	Unknown, COMMUNICATION	20.12	7.95	1.5000	0.60	0.900	42.9	317.5	42.9	2,000	271	39	503	812
Telco	TELE 1.5	Unknown, COMMUNICATION	19.08	8.01	1.5000	1.29	0.900	86.6	137.2	86.6	2,000	-57	79	963	986
Telco	TELE 1.5	Unknown, COMMUNICATION	19.08	8.01	1.5000	0.60	0.900	42.9	317.5	42.9	2,000	257	39	477	773
Totals:											1,069	572	8,875	10,516	

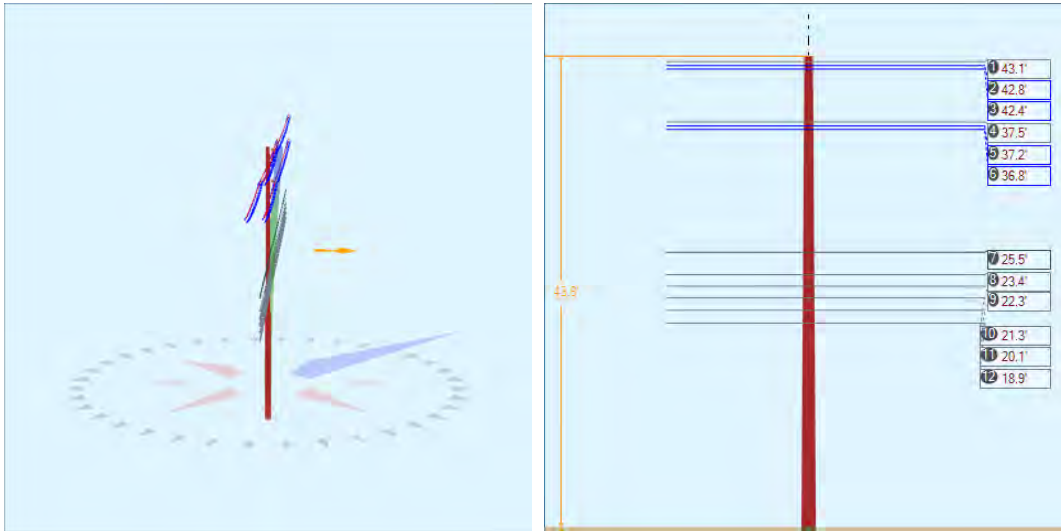
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 230.0°	Riser KU, UTILITY	27.89	6.81	230.0	230.0	27.89	334.67	4.00	4.00	334.67	-29	92	63
Totals:											-29	92	63

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	43.42	0.00	50.0	50.0	11.00	4.75	11.50	27	115	142
Suspension	Suspension 11.50"	Power, UTILITY	35.42	0.00	50.0	50.0	11.00	4.75	11.50	28	94	122
Suspension	Suspension 11.50"	Power, UTILITY	35.42	0.00	230.0	230.0	11.00	4.75	11.50	-28	94	66
Bolt	Three Bolt	Unknown, COMMUNICATION	23.91	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.10	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.12	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.04	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.12	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	19.08	0.00	47.3	317.3	5.00	3.00	0.00	6	0	6
Totals:										64	303	368

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	26.53	33.66	12.27	20.71	7.96	13.38	1.60e+6	60.00	57.00	44.02	36,867	369.78	6.06

Pole Num:	486W - 800500-53	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.38	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.85	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.993837 Deg	Longitude:	-84.437775 Deg	Elevation:	891.50071093668		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.4	0.0
Groundline	33.4	0.0
Vertical	16.6	26.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	43,138	47.6
Groundline	43,138	47.6
GL Allowable	131,527	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 47.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	699	50.6	27,571	63.9	21.0	1,420	1,754	13	1,433	21.1
Comms	404	29.2	9,336	21.6	7.1	481	812	6	487	7.2
Pole	271	19.6	5,853	13.6	4.5	302	3,135	22	324	4.8
Insulators	8	0.6	379	0.9	0.3	20	120	1	20	0.3
Pole Load	1,382	100.0	43,138	100.0	32.8	2,222	5,821	42	2,264	33.3
Pole Reserve Capacity			88,389		67.2	4,578			4,536	66.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 47.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	707	51.2	27,912	64.7	21.2	1,438	1,817	13	1,451	21.3
Unknown, COMMUNICATION	404	29.2	9,373	21.7	7.1	483	869	6	489	7.2
Pole	271	19.6	5,853	13.6	4.5	302	3,135	22	324	4.8
Totals:	1,382	100.0	43,138	100.0	32.8	2,222	5,821	42	2,264	33.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.08	15.51	0.5630	0.02	0.291	42.9	137.5	42.9	5,010	375	7	573	956
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.08	15.51	0.5630	0.08	0.291	78.0	317.6	78.0	5,010	1	13	1,042	1,057
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	11.51	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	238	21	860	1,119
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	19.51	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	238	21	860	1,119
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	11.51	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	38	1,564	1,602
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	19.51	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	38	1,564	1,602
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.42	15.51	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	236	21	853	1,110
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.42	15.51	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	38	1,552	1,590
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.50	15.85	0.5630	0.02	0.291	42.9	137.5	42.9	5,010	327	8	499	834
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.50	15.85	0.5630	0.08	0.291	78.0	317.6	78.0	5,010	1	15	907	923
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	11.85	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	207	23	748	977
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	19.85	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	207	23	748	977
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	11.85	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	41	1,360	1,401
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	19.85	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	41	1,360	1,401
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	15.85	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	205	23	741	969
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	15.85	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	41	1,347	1,389

Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.50	15.85	0.5630	0.02	0.291	42.9	137.5	42.9	5,010	327	-8	499	818
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.50	15.85	0.5630	0.08	0.291	78.0	317.6	78.0	5,010	1	-15	907	893
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	11.85	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	207	-23	748	932
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	19.85	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	207	-23	748	932
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	11.85	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	-41	1,360	1,319
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	19.85	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	-41	1,360	1,319
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	15.85	1.1080	0.41	1.093	42.9	137.5	43.0	3,200	205	-23	741	924
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	15.85	1.1080	0.81	1.093	78.0	317.6	78.0	3,200	1	-41	1,347	1,307
Totals:											2,989	196	24,286	27,471	

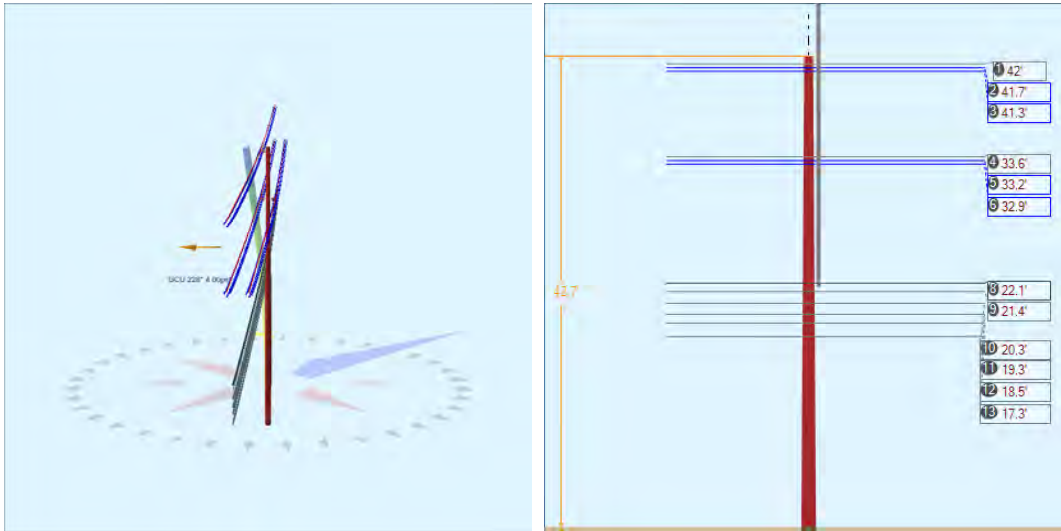
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.46	7.60	1.3300	0.53	0.337	42.9	137.5	42.9	925	41	21	582	645
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.46	7.60	1.3300	1.00	0.337	78.0	317.6	78.0	925	0	39	1,059	1,098
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.38	7.72	0.6570	0.51	0.190	42.9	137.5	42.9	750	31	12	338	381
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.38	7.72	0.6570	0.98	0.190	78.0	317.6	78.0	750	0	22	615	638
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.31	7.79	1.5000	0.60	0.900	42.9	137.5	42.9	2,000	78	38	558	673
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.31	7.79	1.5000	1.15	0.900	78.0	317.6	78.0	2,000	0	69	1,014	1,084
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.26	7.85	1.5000	0.60	0.900	42.9	137.5	42.9	2,000	74	38	531	644
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.26	7.85	1.5000	1.15	0.900	78.0	317.6	78.0	2,000	0	70	967	1,037
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.09	7.93	1.5000	0.60	0.900	42.9	137.5	42.9	2,000	70	39	502	611
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.09	7.93	1.5000	1.15	0.900	78.0	317.6	78.0	2,000	0	71	914	984
		COMMUNICATION													

Telco	TELE 1.5	Unknown, COMMUNICATION	18.89	8.00	1.5000	0.60	0.900	42.9	137.5	42.9	2,000	66	39	472	577
Telco	TELE 1.5	Unknown, COMMUNICATION	18.89	8.00	1.5000	1.15	0.900	78.0	317.6	78.0	2,000	0	71	859	930
Totals:											360	531	8,411	9,302	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	43.08	0.00	50.0	50.0	11.00	4.75	11.50	27	114	141
Suspension	Suspension 11.50"	Power, UTILITY	37.50	0.00	50.0	50.0	11.00	4.75	11.50	28	100	127
Suspension	Suspension 11.50"	Power, UTILITY	37.50	0.00	230.0	230.0	11.00	4.75	11.50	-28	100	72
Bolt	Three Bolt	Unknown, COMMUNICATION	25.46	0.00	47.5	317.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.38	0.00	47.5	317.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.31	0.00	47.5	317.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.26	0.00	47.5	317.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.09	0.00	47.5	317.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.89	0.00	47.5	317.5	5.00	3.00	0.00	6	0	6
Totals:										64	314	378

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	26.91	33.73	12.21	20.36	7.96	13.33	1.60e+6	60.00	57.00	43.62	35,055	350.65	6.02

Pole Num:	487W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.29	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.50	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.993902 Deg	Longitude:	-84.437997 Deg	Elevation:	901.758446576742		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	66.8	0.0
Groundline	66.8	0.0
Vertical	20.6	26.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	84,655	227.1
Groundline	84,655	227.1
GL Allowable	128,272	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,712	61.4	62,216	73.5	48.5	3,288	2,666	19	3,307	48.6
Comms	758	27.2	15,717	18.6	12.3	831	1,236	9	839	12.3
Pole	264	9.5	5,589	6.6	4.4	295	3,036	22	317	4.7
Risers	45	1.6	777	0.9	0.6	41	50	0	41	0.6
Insulators	8	0.3	355	0.4	0.3	19	120	1	20	0.3
Pole Load	2,786	100.0	84,655	100.0	66.0	4,473	7,108	52	4,525	66.5
Pole Reserve Capacity			43,617		34.0	2,327			2,275	33.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,720	61.7	62,534	73.9	48.8	3,304	2,729	20	3,324	48.9
Unknown, COMMUNICATION	758	27.2	15,754	18.6	12.3	833	1,293	9	842	12.4
Pole	264	9.5	5,589	6.6	4.4	295	3,036	22	317	4.7
KU, UTILITY	45	1.6	777	0.9	0.6	41	50	0	41	0.6
Totals:	2,786	100.0	84,655	100.0	66.0	4,473	7,108	52	4,525	66.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.00	15.52	0.5630	0.08	0.291	78.0	137.6	78.0	5,010	1,739	13	1,016	2,768
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.00	15.52	0.5630	0.14	0.291	105.8	316.6	105.8	5,010	1,934	18	1,377	3,329
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	11.52	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	1,102	38	1,524	2,664
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	19.52	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	1,102	38	1,524	2,664
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	11.52	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	1,225	51	2,067	3,344
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	19.52	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	1,225	51	2,067	3,344
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	15.52	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	1,093	38	1,512	2,643

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	15.52	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	1,215	52	2,050	3,317
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.58	16.04	0.5630	0.08	0.291	78.0	137.6	78.0	5,010	1,390	-15	812	2,187
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.58	16.04	0.5630	0.14	0.291	105.8	316.6	105.8	5,010	1,546	-21	1,101	2,627
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	12.04	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	879	-43	1,216	2,053
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	20.04	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	879	-43	1,216	2,053
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	12.04	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	978	-58	1,649	2,569
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	20.04	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	978	-58	1,649	2,569
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.92	16.04	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	870	-43	1,204	2,032
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.92	16.04	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	968	-58	1,633	2,543
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.58	16.04	0.5630	0.08	0.291	78.0	137.6	78.0	5,010	1,390	15	812	2,218
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	33.58	16.04	0.5630	0.14	0.291	105.8	316.6	105.8	5,010	1,546	21	1,101	2,668
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	12.04	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	879	43	1,216	2,138
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	20.04	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	879	43	1,216	2,138
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	12.04	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	978	58	1,649	2,685
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.25	20.04	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	978	58	1,649	2,685
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.92	16.04	1.1080	0.81	1.093	78.0	137.6	78.0	3,200	870	43	1,204	2,117
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	32.92	16.04	1.1080	1.18	1.093	105.8	316.6	105.8	3,200	968	58	1,633	2,659
											Totals:	27,613	299	34,102	62,014

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.12	7.75	1.3300	1.00	0.337	78.0	137.6	78.0	925	169	40	920	1,129
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	22.12	7.75	1.3300	1.41	0.337	105.8	316.6	105.8	925	188	54	1,249	1,491
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.37	7.79	0.6570	0.98	0.190	78.0	137.6	78.0	750	132	23	562	717
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.37	7.79	0.6570	1.40	0.190	105.8	316.6	105.8	750	147	31	763	941
	COMMUNICATION														

Telco	TELE 1.5	Unknown, COMMUNICATION	20.32	7.86	1.5000	1.15	0.900	78.0	137.6	78.0	2,000	336	70	924	1,330
Telco	TELE 1.5	Unknown, COMMUNICATION	20.32	7.86	1.5000	1.64	0.900	105.8	316.6	105.9	2,000	373	95	1,254	1,723
Telco	TELE 1.5	Unknown, COMMUNICATION	19.32	7.92	1.5000	1.15	0.900	78.0	137.6	78.0	2,000	319	71	878	1,268
Telco	TELE 1.5	Unknown, COMMUNICATION	19.32	7.92	1.5000	1.64	0.900	105.8	316.6	105.9	2,000	355	96	1,192	1,643
Telco	TELE 1.5	Unknown, COMMUNICATION	18.51	7.97	1.5000	1.15	0.900	78.0	137.6	78.0	2,000	306	71	842	1,219
Telco	TELE 1.5	Unknown, COMMUNICATION	18.51	7.97	1.5000	1.64	0.900	105.8	316.6	105.9	2,000	340	96	1,143	1,579
Telco	TELE 1.5	Unknown, COMMUNICATION	17.29	8.04	1.5000	1.15	0.900	78.0	137.6	78.0	2,000	286	72	786	1,144
Telco	TELE 1.5	Unknown, COMMUNICATION	17.29	8.04	1.5000	1.64	0.900	105.8	316.6	105.9	2,000	318	97	1,067	1,482
Totals:											3,270	815	11,581	15,666	

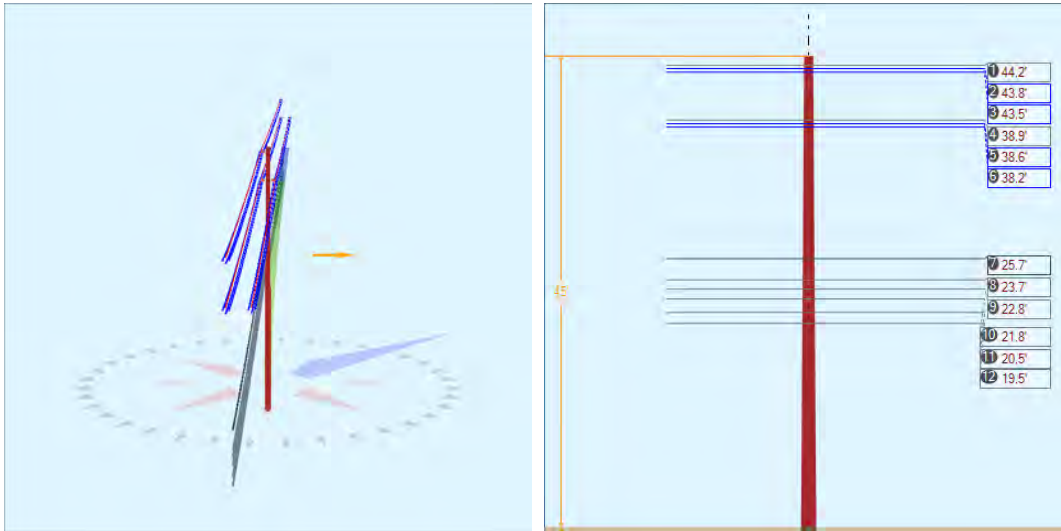
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser KU, UTILITY	26.11	6.81	360.0	360.0	26.11	313.31	4.00	4.00	313.31	-10	785	775
Totals:											-10	785	775

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	42.00	0.00	230.0	230.0	11.00	4.75	11.50	27	112	139
Suspension	Suspension 11.50"	Power, UTILITY	33.58	0.00	50.0	50.0	11.00	4.75	11.50	-28	89	61
Suspension	Suspension 11.50"	Power, UTILITY	33.58	0.00	230.0	230.0	11.00	4.75	11.50	28	89	117
Bolt	Three Bolt	Unknown, COMMUNICATION	22.12	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.37	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.32	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.32	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.51	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	17.29	0.00	227.1	137.1	5.00	3.00	0.00	6	0	6
Totals:										64	290	354

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	26.68	33.73	12.10	22.23	7.96	13.22	1.60e+6	60.00	57.00	42.72	34,505	345.04	4.85

Pole Num:	488W - 800500-523	Pole Length / Class:	50 / 1	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	4.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	45.43	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.994066 Deg	Longitude:	-84.438207 Deg	Elevation:	900.902785340167		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	53.9	0.0
Groundline	53.9	0.0
Vertical	25.0	30.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	89,179	46.8
Groundline	89,179	46.8
GL Allowable	168,184	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 46.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,580	56.8	63,567	71.3	37.8	2,557	3,804	23	2,580	37.9
Comms	891	32.0	18,620	20.9	11.1	749	1,763	11	760	11.2
Pole	303	10.9	6,734	7.6	4.0	271	3,801	23	294	4.3
Insulators	8	0.3	259	0.3	0.2	10	120	1	11	0.2
Pole Load	2,782	100.0	89,179	100.0	53.0	3,587	9,488	58	3,645	53.6
Pole Reserve Capacity			79,005		47.0	3,213			3,155	46.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 46.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,588	57.1	63,865	71.6	38.0	2,569	3,867	24	2,592	38.1
Unknown, COMMUNICATION	891	32.0	18,580	20.8	11.1	747	1,820	11	758	11.2
Pole	303	10.9	6,734	7.6	4.0	271	3,801	23	294	4.3
Totals:	2,782	100.0	89,179	100.0	53.0	3,587	9,488	58	3,645	53.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.17	15.85	0.5630	0.14	0.291	105.8	136.6	105.8	5,010	944	-20	1,449	2,373
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.17	15.85	0.5630	0.31	0.291	156.4	316.9	156.4	5,010	215	-29	2,142	2,328
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.83	11.85	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	598	-55	2,175	2,718
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.83	19.85	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	598	-55	2,175	2,718
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.83	11.85	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	136	-82	3,215	3,270
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.83	19.85	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	136	-82	3,215	3,270
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.50	15.85	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	594	-55	2,158	2,697
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.50	15.85	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	135	-82	3,191	3,244
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.92	16.20	0.5630	0.14	0.291	105.8	136.6	105.8	5,010	831	21	1,277	2,129
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.92	16.20	0.5630	0.31	0.291	156.4	316.9	156.4	5,010	189	31	1,887	2,108
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	12.20	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	527	59	1,914	2,500
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	20.20	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	527	59	1,914	2,500
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	12.20	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	120	88	2,830	3,038
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	20.20	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	120	88	2,830	3,038
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	16.20	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	522	60	1,898	2,480
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	16.20	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	119	88	2,806	3,013

Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.92	16.20	0.5630	0.14	0.291	105.8	136.6	105.8	5,010	831	-21	1,277	2,087
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.92	16.20	0.5630	0.31	0.291	156.4	316.9	156.4	5,010	189	-31	1,887	2,045
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	12.20	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	527	-59	1,914	2,381
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	20.20	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	527	-59	1,914	2,381
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	12.20	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	120	-88	2,830	2,862
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.58	20.20	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	120	-88	2,830	2,862
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	16.20	1.1080	1.18	1.093	105.8	136.6	105.8	3,200	522	-60	1,898	2,360
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	16.20	1.1080	1.96	1.093	156.4	316.9	156.4	3,200	119	-88	2,806	2,836
Totals:											9,266	-459	54,433	63,239	

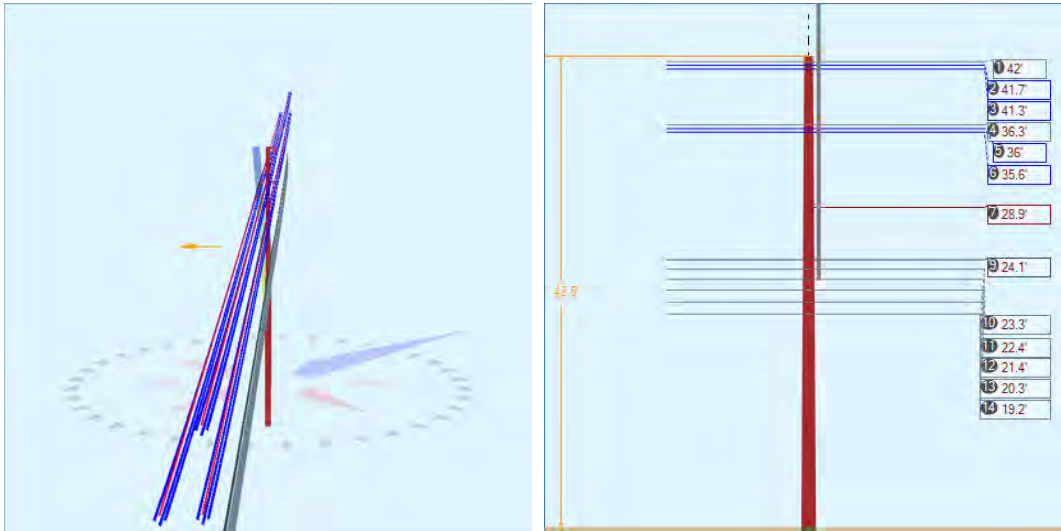
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	25.68	8.06	1.3300	1.41	0.337	105.8	136.6	105.8	925	101	-56	1,451	1,496
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	25.68	8.06	1.3300	2.26	0.337	156.4	316.9	156.5	925	23	-83	2,144	2,085
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.66	8.19	0.6570	1.40	0.190	105.8	136.6	105.8	750	76	-32	845	888
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.66	8.19	0.6570	2.24	0.190	156.4	316.9	156.4	750	17	-48	1,249	1,218
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.79	8.25	1.5000	1.64	0.900	105.8	136.6	105.9	2,000	194	-100	1,407	1,502
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.79	8.25	1.5000	2.67	0.900	156.4	316.9	156.5	2,000	44	-147	2,080	1,976
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.83	8.31	1.5000	1.64	0.900	105.8	136.6	105.9	2,000	186	-101	1,348	1,433
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.83	8.31	1.5000	2.67	0.900	156.4	316.9	156.5	2,000	42	-149	1,992	1,886
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.55	8.39	1.5000	1.64	0.900	105.8	136.6	105.9	2,000	175	-102	1,268	1,342
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.55	8.39	1.5000	2.67	0.900	156.4	316.9	156.5	2,000	40	-150	1,875	1,765
		COMMUNICATION													

Telco	TELE 1.5	Unknown, COMMUNICATION	19.50	8.46	1.5000	1.64	0.900	105.8	136.6	105.9	2,000	166	-102	1,204	1,267
Telco	TELE 1.5	Unknown, COMMUNICATION	19.50	8.46	1.5000	2.67	0.900	156.4	316.9	156.5	2,000	38	-151	1,779	1,666
Totals:											1,104	-1,220	18,640	18,524	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	44.17	0.00	220.0	220.0	11.00	4.75	11.50	-27	117	90
Suspension	Suspension 11.50"	Power, UTILITY	38.92	0.00	40.0	40.0	11.00	4.75	11.50	28	103	131
Suspension	Suspension 11.50"	Power, UTILITY	38.92	0.00	220.0	220.0	11.00	4.75	11.50	-28	103	75
Bolt	Three Bolt	Unknown, COMMUNICATION	25.68	0.00	225.9	135.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.66	0.00	225.9	135.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.79	0.00	225.9	135.9	5.00	3.00	0.00	-7	0	-7
Bolt	Three Bolt	Unknown, COMMUNICATION	21.83	0.00	225.9	135.9	5.00	3.00	0.00	-7	0	-7
Bolt	Three Bolt	Unknown, COMMUNICATION	20.55	0.00	225.9	135.9	5.00	3.00	0.00	-7	0	-7
Bolt	Three Bolt	Unknown, COMMUNICATION	19.50	0.00	225.9	135.9	5.00	3.00	0.00	-7	0	-7
Totals:										-67	324	257

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.96	34.05	13.13	27.08	8.60	14.47	1.60e+6	60.00	57.00	45.04	37,901	379.52	4.00

Pole Num:	489W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.50	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.42	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.994406 Deg	Longitude:	-84.438539 Deg	Elevation:	891.924627832762		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	73.2	0.0
Groundline	73.2	0.0
Vertical	36.9	29.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	92,029	229.7
Groundline	92,029	229.7
GL Allowable	127,513	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,723	56.4	64,705	70.3	50.7	3,431	4,559	33	3,464	50.9
Comms	1,015	33.2	20,722	22.5	16.3	1,099	2,097	15	1,114	16.4
Pole	262	8.6	5,540	6.0	4.3	294	3,013	22	316	4.6
Risers	46	1.5	807	0.9	0.6	43	50	0	43	0.6
Insulators	8	0.3	256	0.3	0.2	14	124	1	14	0.2
Pole Load	3,055	100.0	92,029	100.0	72.2	4,879	9,844	72	4,951	72.8
Pole Reserve Capacity			35,484		27.8	1,921			1,849	27.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,689	55.3	63,771	69.3	50.0	3,381	4,589	34	3,415	50.2
KU, UTILITY	88	2.9	2,033	2.2	1.6	108	87	1	108	1.6
Unknown, COMMUNICATION	1,015	33.2	20,685	22.5	16.2	1,097	2,154	16	1,112	16.4
Pole	262	8.6	5,540	6.0	4.3	294	3,013	22	316	4.6
Totals:	3,055	100.0	92,029	100.0	72.2	4,879	9,844	72	4,951	72.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.00	15.51	0.5630	0.31	0.291	156.4	136.9	156.4	5,010	-10,129	-27	2,034	-8,122
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.00	15.51	0.5630	0.31	0.291	155.6	316.8	155.6	5,010	10,496	-26	2,023	12,493
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	11.51	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-6,418	-75	3,052	-3,441
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	19.51	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-6,418	-75	3,052	-3,441
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	11.51	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	6,651	-74	3,036	9,613
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.67	19.51	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	6,651	-74	3,036	9,613
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	15.51	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-6,367	-75	3,028	-3,414

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.33	15.51	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	6,598	-75	3,012	9,535
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.30	15.86	0.5630	0.31	0.291	156.4	136.9	156.4	5,010	-8,755	-29	1,758	-7,026
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.30	15.86	0.5630	0.31	0.291	155.6	316.8	155.6	5,010	9,072	-29	1,749	10,792
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	11.86	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-5,540	-81	2,635	-2,987
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	19.86	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-5,540	-81	2,635	-2,987
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	11.86	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	5,741	-81	2,621	8,282
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	19.86	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	5,741	-81	2,621	8,282
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.63	15.86	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-5,489	-81	2,610	-2,960
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.63	15.86	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	5,688	-81	2,597	8,204
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.30	15.86	0.5630	0.31	0.291	156.4	136.9	156.4	5,010	-8,755	29	1,758	-6,968
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.30	15.86	0.5630	0.31	0.291	155.6	316.8	155.6	5,010	9,072	29	1,749	10,849
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	11.86	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-5,540	81	2,635	-2,824
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	19.86	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-5,540	81	2,635	-2,824
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	11.86	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	5,741	81	2,621	8,443
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.97	19.86	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	5,741	81	2,621	8,443
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.63	15.86	1.1080	1.96	1.093	156.4	136.9	156.4	3,200	-5,489	81	2,610	-2,797
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.63	15.86	1.1080	1.95	1.093	155.6	316.8	155.6	3,200	5,688	81	2,597	8,366
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	28.86	7.32	0.2570	0.37	0.067	155.6	316.8	155.6	150	216	0	990	1,206
											Totals:	3,112	-500	61,717	64,330

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.12	7.61	1.3300	2.26	0.337	156.4	136.9	156.5	925	-1,074	-78	2,011	859
	COMMUNICATION														
CATV	CATV 1.0	Unknown,	24.12	7.61	1.3300	2.25	0.337	155.6	316.8	155.6	925	1,113	-78	2,000	3,035
	COMMUNICATION														
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.28	7.66	0.6570	2.24	0.190	156.4	136.9	156.4	750	-841	-45	1,227	342
	COMMUNICATION														

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.28	7.66	0.6570	2.23	0.190	155.6	316.8	155.6	750	871	-44	1,220	2,047
Telco	TELE 1.5	Unknown, COMMUNICATION	22.37	7.72	1.5000	2.67	0.900	156.4	136.9	156.5	2,000	-2,154	-138	2,039	-253
Telco	TELE 1.5	Unknown, COMMUNICATION	22.37	7.72	1.5000	2.65	0.900	155.6	316.8	155.6	2,000	2,232	-137	2,027	4,121
Telco	TELE 1.5	Unknown, COMMUNICATION	21.40	7.78	1.5000	2.67	0.900	156.4	136.9	156.5	2,000	-2,060	-139	1,950	-249
Telco	TELE 1.5	Unknown, COMMUNICATION	21.40	7.78	1.5000	2.65	0.900	155.6	316.8	155.6	2,000	2,135	-138	1,939	3,936
Telco	TELE 1.5	Unknown, COMMUNICATION	20.31	7.84	1.5000	2.67	0.900	156.4	136.9	156.5	2,000	-1,956	-140	1,851	-245
Telco	TELE 1.5	Unknown, COMMUNICATION	20.31	7.84	1.5000	2.65	0.900	155.6	316.8	155.6	2,000	2,026	-139	1,841	3,728
Telco	TELE 1.5	Unknown, COMMUNICATION	19.23	7.91	1.5000	2.67	0.900	156.4	136.9	156.5	2,000	-1,851	-141	1,752	-240
Telco	TELE 1.5	Unknown, COMMUNICATION	19.23	7.91	1.5000	2.65	0.900	155.6	316.8	155.6	2,000	1,918	-141	1,742	3,520
Totals:											360	-1,358	21,600	20,602	

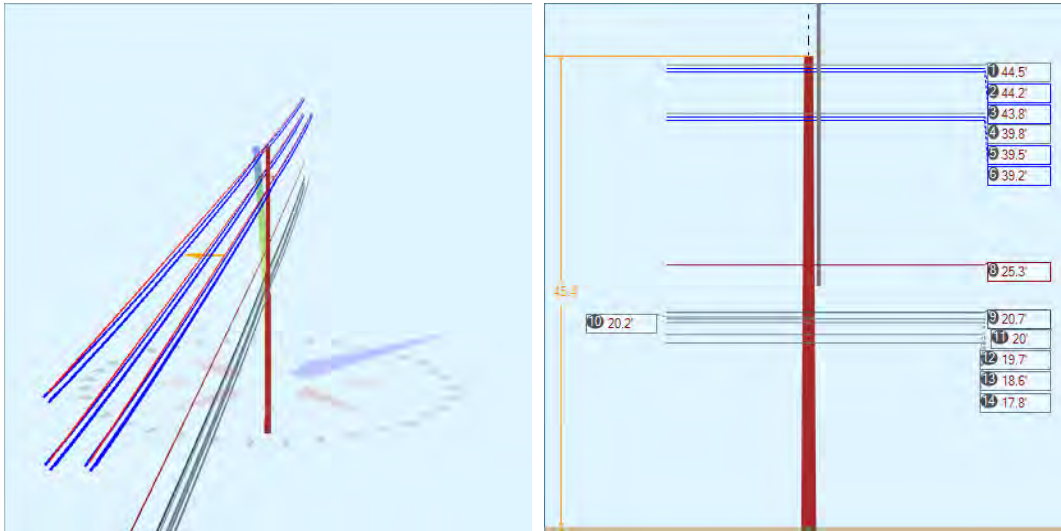
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	26.56	6.81	360.0	360.0	26.56	318.73	4.00	4.00	318.73	-9	812	802
Totals:											-9	812	802	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	42.00	0.00	40.0	40.0	11.00	4.75	11.50	-27	111	85
Suspension	Suspension 11.50"	Power, UTILITY	36.30	0.00	40.0	40.0	11.00	4.75	11.50	-27	96	69
Suspension	Suspension 11.50"	Power, UTILITY	36.30	0.00	220.0	220.0	11.00	4.75	11.50	27	96	124
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.86	0.00	319.8	319.8	2.00	3.00	3.19	0	13	13
Bolt	Three Bolt	Unknown, COMMUNICATION	24.12	0.00	47.6	317.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.28	0.00	47.6	317.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.37	0.00	47.6	317.6	5.00	3.00	0.00	-6	0	-6

Bolt	Three Bolt	Unknown, COMMUNICATION	21.40	0.00	47.6	317.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.31	0.00	47.6	317.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.23	0.00	47.6	317.6	5.00	3.00	0.00	-6	0	-6
Totals:										-63	318	254

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.54	34.13	11.95	27.22	7.96	13.19	1.60e+6	60.00	57.00	42.50	26,696	266.78	2.71

Pole Num:	490W - 800500-503	Pole Length / Class:	55 / 1	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.64	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	45.05	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.994731 Deg	Longitude:	-84.438985 Deg	Elevation:	889.68055821498		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	74.3	0.0
Groundline	74.3	0.0
Vertical	30.3	30.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	120,348	209.7
Groundline	120,348	209.7
GL Allowable	164,071	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 209.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,952	49.8	79,797	66.3	48.6	3,294	4,611	29	3,322	48.9
Comms	1,607	41.0	32,469	27.0	19.8	1,340	1,889	12	1,352	19.9
Pole	288	7.4	6,457	5.4	3.9	267	3,787	23	290	4.3
Risers	64	1.6	1,249	1.0	0.8	52	56	0	52	0.8
Insulators	8	0.2	375	0.3	0.2	16	124	1	16	0.2
Pole Load	3,919	100.0	120,348	100.0	73.4	4,967	10,466	65	5,032	74.0
Pole Reserve Capacity			43,723		26.6	1,833			1,768	26.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 209.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,884	48.1	78,192	65.0	47.7	3,227	4,606	29	3,256	47.9
KU, UTILITY	140	3.6	3,208	2.7	2.0	132	127	1	133	2.0
Unknown, COMMUNICATION	1,607	41.0	32,491	27.0	19.8	1,341	1,946	12	1,353	19.9
Pole	288	7.4	6,457	5.4	3.9	267	3,787	23	290	4.3
Totals:	3,919	100.0	120,348	100.0	73.4	4,967	10,466	65	5,032	74.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.50	15.85	0.5630	0.31	0.291	155.5	139.8	155.5	5,010	76,601	27	2,014	78,642
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.50	15.85	0.5630	0.32	0.291	157.7	319.3	157.7	5,010	-74,771	28	2,049	-72,694
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.17	11.85	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	48,560	77	3,023	51,660
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.17	19.85	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	48,560	77	3,023	51,660
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.17	11.85	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-47,400	78	3,077	-44,246
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.17	19.85	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-47,400	78	3,077	-44,246
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.83	15.85	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	48,194	77	3,000	51,271

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.83	15.85	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-47,042	78	3,053	-43,911
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	39.83	16.15	0.5630	0.31	0.291	155.5	139.8	155.5	5,010	68,568	-29	1,803	70,341
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	39.83	16.15	0.5630	0.32	0.291	157.7	319.3	157.7	5,010	-66,930	-30	1,834	-65,125
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	12.15	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	43,429	-82	2,704	46,051
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	20.15	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	43,429	-82	2,704	46,051
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	12.15	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-42,392	-83	2,751	-39,723
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	20.15	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-42,392	-83	2,751	-39,723
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.17	16.15	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	43,063	-82	2,681	45,662
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.17	16.15	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-42,034	-83	2,728	-39,389
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	39.83	16.15	0.5630	0.31	0.291	155.5	139.8	155.5	5,010	68,568	29	1,803	70,399
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	39.83	16.15	0.5630	0.32	0.291	157.7	319.3	157.7	5,010	-66,930	30	1,834	-65,066
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	12.15	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	43,429	82	2,704	46,215
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	20.15	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	43,429	82	2,704	46,215
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	12.15	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-42,392	83	2,751	-39,557
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	20.15	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-42,392	83	2,751	-39,557
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.17	16.15	1.1080	1.95	1.093	155.5	139.8	155.5	3,200	43,063	82	2,681	45,826
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.17	16.15	1.1080	1.99	1.093	157.7	319.3	157.7	3,200	-42,034	83	2,728	-39,223
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	25.26	8.07	0.2570	0.37	0.067	155.5	139.8	155.5	1,216	10,553	21	814	11,388
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	25.26	8.07	0.2570	0.38	0.067	157.7	319.3	157.7	1,216	-10,300	21	828	-9,451
											Totals:	15,038	560	63,872	79,470

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	20.68	8.36	1.3300	2.25	0.337	155.5	139.8	155.6	925	6,574	80	1,612	8,265
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	20.68	8.36	1.3300	2.29	0.337	157.7	319.3	157.7	925	-6,416	81	1,640	-4,695
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.72	8.42	0.6570	2.23	0.190	155.5	139.8	155.6	750	5,082	46	972	6,099
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.72	8.42	0.6570	2.26	0.190	157.7	319.3	157.7	750	-4,960	47	988	-3,925
Telco	TELE 1.5	Unknown, COMMUNICATION	20.05	8.40	1.5000	2.65	0.900	155.5	139.8	155.6	2,000	13,776	-141	1,707	15,342
Telco	TELE 1.5	Unknown, COMMUNICATION	20.05	8.40	1.5000	2.70	0.900	157.7	319.3	157.8	2,000	-13,446	-142	1,737	-11,852
Telco	TELE 1.5	Unknown, COMMUNICATION	20.25	8.39	1.5000	2.65	0.900	155.5	139.8	155.6	2,000	13,915	51	1,725	15,691
Telco	TELE 1.5	Unknown, COMMUNICATION	18.57	8.49	1.5000	2.65	0.900	155.5	139.8	155.6	2,000	12,761	142	1,582	14,485
Telco	TELE 1.5	Unknown, COMMUNICATION	18.57	8.49	1.5000	2.70	0.900	157.7	319.3	157.8	2,000	-12,456	144	1,609	-10,703
Telco	TELE 1.5	Unknown, COMMUNICATION	17.75	8.55	1.5000	2.65	0.900	155.5	139.8	155.6	2,000	12,200	143	1,512	13,854
Telco	TELE 1.5	Unknown, COMMUNICATION	17.75	8.55	1.5000	2.70	0.900	157.7	319.3	157.8	2,000	-11,908	145	1,538	-10,225
Totals:											15,119	597	16,621	32,336	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 330.0°	Riser KU, UTILITY	29.54	7.53	330.0	330.0	29.54	354.42	4.00	4.00	354.42	-16	1,260	1,244
Totals:											-16	1,260	1,244

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	44.50	0.00	230.0	230.0	11.00	4.75	11.50	26	112	138
Suspension	Suspension 11.50"	Power, UTILITY	39.83	0.00	50.0	50.0	11.00	4.75	11.50	-26	100	74
Suspension	Suspension 11.50"	Power, UTILITY	39.83	0.00	230.0	230.0	11.00	4.75	11.50	26	100	127
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.26	0.00	229.5	139.5	2.00	3.00	3.19	2	11	14
Bolt	Three Bolt	Unknown, COMMUNICATION	20.68	0.00	229.5	139.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.72	0.00	229.5	139.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.05	0.00	49.5	139.5	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	20.25	0.00	139.8	229.8	5.00	3.00	0.00	2	0	2

Bolt	Three Bolt	Unknown, COMMUNICATION	18.57	0.00	229.5	139.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.75	0.00	229.5	139.5	5.00	3.00	0.00	6	0	6
Totals:										50	324	374

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	30.79	34.08	13.01	28.75	8.60	14.35	1.60e+6	60.00	57.00	45.36	34,593	345.42	3.30

Pole Num:	491W - NT	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.58	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.90	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.995059 Deg	Longitude:	-84.439355 Deg	Elevation:	886.729255090371		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	67.4	0.0
Groundline	67.4	0.0
Vertical	4.3	313.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	94,153	82.2
Groundline	94,153	82.2
GL Allowable	141,692	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	40.8	134.2		0.0	56.3	0.0	0.0
? EHS 7/16 (Down)			27.3	0.0	56.3	0.0	0.0
? Single Helix Anchor	27.0	133.7		0.0	56.3	0.0	0.0
? EHS 1/4 (Down)			20.0	0.0	56.3	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 82.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,580	81.8	78,080	82.9	55.1	3,736	3,752	26	3,762	55.3
Comms	157	5.0	4,588	4.9	3.2	220	1,175	8	228	3.3
GuyBraces	17	0.5	424	0.5	0.3	20	26	0	20	0.3
Pole	269	8.5	6,262	6.7	4.4	300	3,523	24	324	4.8
Crossarms	114	3.6	4,113	4.4	2.9	197	380	3	199	2.9
Insulators	19	0.6	687	0.7	0.5	33	179	1	34	0.5
Pole Load	3,156	100.0	94,153	100.0	66.5	4,505	9,035	62	4,567	67.2
Pole Reserve Capacity			47,539		33.6	2,295			2,233	32.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 82.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	-56	-1.8	-2,822	-3.0	-2.0	-135	3,511	24	-111	-1.6
KU, UTILITY	2,666	84.5	81,899	87.0	57.8	3,919	364	2	3,922	57.7
Unknown, COMMUNICATION	164	5.2	4,702	5.0	3.3	225	1,257	9	234	3.4
Pole	269	8.5	6,262	6.7	4.4	300	3,523	24	324	4.8
<Undefined>	114	3.6	4,113	4.4	2.9	197	380	3	199	2.9
Totals:	3,156	100.0	94,153	100.0	66.5	4,505	9,035	62	4,567	67.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.83	15.57	0.5630	0.32	0.291	157.7	139.3	157.7	5,010	162,234	-23	1,867	164,078
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.83	15.57	0.5630	0.08	0.291	80.0	318.0	80.0	5,010	-167,877	-12	930	-166,959
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.50	11.57	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	102,869	-66	2,804	105,607
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.50	19.57	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	102,869	-66	2,804	105,607
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.50	11.57	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-106,447	-33	1,397	-105,084

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.50	19.57	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-106,447	-33	1,397	-105,084
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.17	15.57	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	102,115	-66	2,783	104,833
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.17	15.57	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-105,667	-33	1,386	-104,314
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.42	15.84	0.5630	0.32	0.291	157.7	139.3	157.7	5,010	146,601	25	1,687	148,313
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.42	15.84	0.5630	0.08	0.291	80.0	318.0	80.0	5,010	-151,700	13	840	-150,847
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	11.84	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	92,883	70	2,531	95,485
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	19.84	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	92,883	70	2,531	95,485
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	11.84	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-96,114	35	1,261	-94,818
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	19.84	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-96,114	35	1,261	-94,818
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	15.84	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	92,130	70	2,511	94,711
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	15.84	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-95,335	36	1,251	-94,048
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.42	15.84	0.5630	0.32	0.291	157.7	139.3	157.7	5,010	146,601	-25	1,687	148,263
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.42	15.84	0.5630	0.08	0.291	80.0	318.0	80.0	5,010	-151,700	-13	840	-150,872
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	11.84	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	92,883	-70	2,531	95,345
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	19.84	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	92,883	-70	2,531	95,345
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	11.84	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-96,114	-35	1,261	-94,889
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	19.84	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-96,114	-35	1,261	-94,889
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	15.84	1.1080	1.99	1.093	157.7	139.3	157.7	3,200	92,130	-70	2,511	94,571
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	15.84	1.1080	0.84	1.093	80.0	318.0	80.0	3,200	-95,335	-36	1,251	-94,119
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.11	48.91	0.3980	0.37	0.145	162.4	50.6	162.4	2,128	85,064	17	80	85,162
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.11	48.91	0.3980	0.37	0.145	162.4	50.6	162.4	2,128	85,064	-3	80	85,142
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.11	19.16	0.7200	0.14	0.462	40.4	229.8	40.4	1,250	-49,533	-10	32	-49,511
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.11	48.91	0.7200	0.14	0.462	40.4	229.8	40.4	1,250	-49,533	-9	32	-49,511
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.11	48.91	0.7200	0.14	0.462	40.4	229.8	40.4	1,250	-49,533	2	32	-49,499
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.32	7.57	0.3980	0.37	0.145	162.4	50.6	162.4	2,128	69,063	18	65	69,146
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.32	7.57	0.3980	0.02	0.145	40.4	229.8	40.4	650	-20,912	4	19	-20,889

Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	28.27	7.63	0.2570	0.02	0.067	40.4	229.8	40.4	450	-13,962	-5	15	-13,951
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	27.98	7.65	0.2570	0.38	0.067	157.7	139.3	157.7	1,216	24,040	12	812	24,864
Totals:											33,876	-306	44,284	77,854	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	23.45	7.92	0.6570	2.26	0.190	157.7	139.3	157.7	750	12,427	-39	1,040	13,428
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	23.45	7.92	0.6570	0.46	0.190	40.4	229.8	40.4	450	-11,581	-10	19	-11,572
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	23.45	7.92	0.6570	1.01	0.190	80.0	318.0	80.0	750	-12,859	-20	518	-12,361
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	23.45	7.92	0.6570	2.23	0.190	162.4	50.6	162.4	750	19,471	41	67	19,579
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	22.39	7.98	0.6570	2.26	0.190	157.7	139.3	157.7	750	11,862	-39	993	12,816
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	22.39	7.98	0.6570	1.01	0.190	80.0	318.0	80.0	750	-12,275	-20	495	-11,800
Telco	TELE 1.5 COMMUNICATION	Unknown,	21.73	8.02	1.5000	2.70	0.900	157.7	139.3	157.8	2,000	30,706	120	1,666	32,492
Telco	TELE 1.5 COMMUNICATION	Unknown,	21.73	8.02	1.5000	1.18	0.900	80.0	318.0	80.0	2,000	-31,775	61	830	-30,883
CATV	CATV 1.0 COMMUNICATION	Unknown,	20.02	8.13	1.3300	2.29	0.337	157.7	139.3	157.7	925	13,085	46	1,404	14,535
CATV	CATV 1.0 COMMUNICATION	Unknown,	20.02	8.13	1.3300	1.03	0.337	80.0	318.0	80.0	925	-13,540	-24	700	-12,864
CATV	CATV 1.0 COMMUNICATION	Unknown,	20.02	8.13	1.3300	0.49	0.337	40.4	229.8	40.4	450	-9,886	-18	26	-9,878
Telco	TELE 1.5 COMMUNICATION	Unknown,	19.30	8.17	1.5000	2.70	0.900	157.7	139.3	157.8	2,000	27,272	-123	1,479	28,628
Telco	TELE 1.5 COMMUNICATION	Unknown,	19.30	8.17	1.5000	1.18	0.900	80.0	318.0	80.0	2,000	-28,220	-62	737	-27,545
Totals:											-5,313	-87	9,974	4,574	

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm		36.11	6.41	50.6	50.6	50.00	4.50	3.50	96.00	0	2,060	2,060
Normal	Crossarm		36.11	6.41	229.8	229.8	50.00	4.50	3.50	96.00	0	2,041	2,041
Totals:											0	4,101	4,101

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	45.83	0.00	230.0	230.0	11.00	4.75	11.50	-23	109	87	
Suspension	Suspension 11.50"	Power, UTILITY	41.42	0.00	50.0	50.0	11.00	4.75	11.50	23	99	122	
Suspension	Suspension 11.50"	Power, UTILITY	41.42	0.00	230.0	230.0	11.00	4.75	11.50	-23	99	76	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.11	45.00	132.5	0.0	3.00	3.80	12.75	19	77	95	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.11	-45.00	328.7	0.0	3.00	3.80	12.75	-3	77	73	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.11	0.00	229.8	0.0	3.00	3.80	12.75	-8	77	69	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.11	45.00	311.7	0.0	3.00	3.80	12.75	-19	77	57	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.11	-45.00	147.9	0.0	3.00	3.80	12.75	4	77	80	
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.32	0.00	140.2	50.2	2.00	3.00	3.19	1	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.27	0.00	229.8	229.8	2.00	3.00	3.19	-2	12	10	
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.98	0.00	139.3	139.3	2.00	3.00	3.19	1	12	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.45	0.00	228.6	138.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Single Bolt	Unknown, COMMUNICATION	23.45	0.00	50.2	140.2	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.39	0.00	228.6	138.6	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.73	0.00	48.6	138.6	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.02	0.00	139.3	139.3	5.00	3.00	0.00	3	0	3	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.02	0.00	318.0	318.0	5.00	3.00	0.00	-4	0	-4	
Bolt	Single Bolt	Unknown, COMMUNICATION	20.02	0.00	229.8	229.8	5.00	3.00	0.00	-5	0	-5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.30	0.00	228.6	138.6	5.00	3.00	0.00	-5	0	-5	
Totals:											-41	726	685

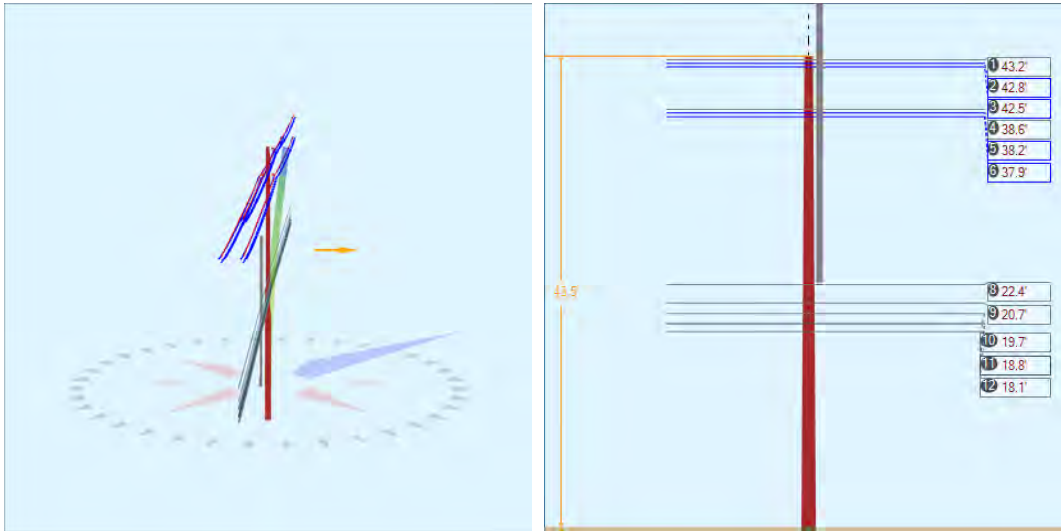
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 7/16	Down	KU, UTILITY	27.26	0.00	40.75	0.438	75.00	134.2	33.7	0.399	47.17	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	20.02	0.00	27.01	0.25	75.00	133.7	36.5	0.121	31.75	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	0	0	0	0	0	0	298
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	125
Totals:										0	0	0	423

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	40.75	134.2	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor			18.00	27.01	133.7	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.87	34.21	12.35	16.19	7.96	13.66	1.60e+6	60.00	57.00	47.42	209,287	2101.25	23.26

Pole Num:	492W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.49	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.995221 Deg	Longitude:	-84.439527 Deg	Elevation:	889.505708518409		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	50.4	0.0
Groundline	50.4	0.0
Vertical	19.9	28.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	65,224	48.1
Groundline	65,224	48.1
GL Allowable	131,153	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 48.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,247	63.6	50,014	76.7	38.1	2,584	2,220	16	2,600	38.2
Comms	431	22.0	8,925	13.7	6.8	461	677	5	466	6.9
Pole	270	13.8	5,820	8.9	4.4	301	3,124	22	323	4.8
Risers	6	0.3	85	0.1	0.1	4	52	0	5	0.1
Insulators	8	0.4	379	0.6	0.3	20	110	1	20	0.3
Pole Load	1,961	100.0	65,224	100.0	49.7	3,369	6,183	44	3,414	50.2
Pole Reserve Capacity			65,929		50.3	3,431			3,386	49.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 48.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,255	64.0	50,362	77.2	38.4	2,602	2,282	16	2,618	38.5
Unknown, COMMUNICATION	431	22.0	8,957	13.7	6.8	463	725	5	468	6.9
Pole	270	13.8	5,820	8.9	4.4	301	3,124	22	323	4.8
KU, UTILITY	6	0.3	85	0.1	0.1	4	52	0	5	0.1
Totals:	1,961	100.0	65,224	100.0	49.7	3,369	6,183	44	3,414	50.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.17	15.50	0.5630	0.08	0.291	80.0	138.0	80.0	5,010	341	14	1,070	1,425
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.17	15.50	0.5630	0.07	0.291	73.0	318.6	73.0	5,010	1,923	13	976	2,912
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	11.50	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	216	39	1,606	1,861
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	19.50	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	216	39	1,606	1,861
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	11.50	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,219	35	1,465	2,719
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	19.50	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,219	35	1,465	2,719
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	15.50	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	215	39	1,594	1,847

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	15.50	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,210	35	1,454	2,699
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.58	15.78	0.5630	0.08	0.291	80.0	138.0	80.0	5,010	305	15	957	1,276
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.58	15.78	0.5630	0.07	0.291	73.0	318.6	73.0	5,010	1,719	13	873	2,605
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	11.78	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	193	41	1,435	1,669
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	19.78	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	193	41	1,435	1,669
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	11.78	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,089	38	1,308	2,435
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	19.78	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,089	38	1,308	2,435
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.92	15.78	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	191	41	1,422	1,655
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.92	15.78	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,079	38	1,297	2,414
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.58	15.78	0.5630	0.08	0.291	80.0	138.0	80.0	5,010	305	-15	957	1,247
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	38.58	15.78	0.5630	0.07	0.291	73.0	318.6	73.0	5,010	1,719	-13	873	2,578
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	11.78	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	193	-41	1,435	1,586
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	19.78	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	193	-41	1,435	1,586
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	11.78	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,089	-38	1,308	2,359
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	38.25	19.78	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,089	-38	1,308	2,359
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.92	15.78	1.1080	0.84	1.093	80.0	138.0	80.0	3,200	191	-41	1,422	1,572
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.92	15.78	1.1080	0.75	1.093	73.0	318.6	73.0	3,200	1,079	-38	1,297	2,338
											Totals:	18,276	248	31,306	49,830

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	22.42	7.78	0.6570	1.01	0.190	80.0	138.0	80.0	750	27	23	605	655
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	22.42	7.78	0.6570	0.91	0.190	73.0	318.6	73.0	750	150	21	552	722
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	20.72	7.88	0.6570	1.01	0.190	80.0	138.0	80.0	750	25	24	559	607
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	20.72	7.88	0.6570	0.91	0.190	73.0	318.6	73.0	750	138	21	510	669

Telco	TELE 1.5	Unknown, COMMUNICATION	19.74	7.94	1.5000	1.18	0.900	80.0	138.0	80.0	2,000	62	73	921	1,056
Telco	TELE 1.5	Unknown, COMMUNICATION	19.74	7.94	1.5000	1.07	0.900	73.0	318.6	73.0	2,000	351	66	839	1,257
CATV	CATV 1.0	Unknown, COMMUNICATION	18.81	8.00	1.3300	1.03	0.337	80.0	138.0	80.0	925	27	42	803	872
CATV	CATV 1.0	Unknown, COMMUNICATION	18.81	8.00	1.3300	0.93	0.337	73.0	318.6	73.0	925	155	38	732	925
Telco	TELE 1.5	Unknown, COMMUNICATION	18.06	8.04	1.5000	1.18	0.900	80.0	138.0	80.0	2,000	57	74	842	973
Telco	TELE 1.5	Unknown, COMMUNICATION	18.06	8.04	1.5000	1.07	0.900	73.0	318.6	73.0	2,000	321	67	768	1,156
Totals:											1,312	449	7,131	8,893	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 230.0°	Riser KU, UTILITY	27.62	6.81	230.0	230.0	27.62	331.45	6.00	6.00	331.45	-29	114	85
Totals:											-29	114	85

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	43.17	0.00	45.0	45.0	11.00	4.75	11.50	27	115	142
Suspension	Suspension 11.50"	Power, UTILITY	38.58	0.00	45.0	45.0	11.00	4.75	11.50	27	102	130
Suspension	Suspension 11.50"	Power, UTILITY	38.58	0.00	225.0	225.0	11.00	4.75	11.50	-27	102	75
Bolt	Three Bolt	Unknown, COMMUNICATION	22.42	0.00	48.3	318.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.72	0.00	48.3	318.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.74	0.00	48.3	318.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.81	0.00	48.6	318.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.06	0.00	48.3	318.3	5.00	3.00	0.00	6	0	6
Totals:										58	319	378

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.26	33.92	12.13	21.40	7.96	13.32	1.60e+6	60.00	57.00	43.51	31,010	310.72	5.03

37' 11" - 408W - 21661-24

29' 7" - Lowest Power
26' 1" - Proposed Metronet
25' 9" - Proposed Metronet
24' 5" - Highest Tel Cable

4' - Base offset

Base

WIN6876

37' 5" - 409W - 21661-23

31' 1" - Lowest Power

24' 6" - Proposed Metronet

21' 11" - Highest Tel Cable

4' - Base offset

Base

35' 3" - 410W - 21661-22

26' 11" - Lowest Power

22' 6" - Proposed Metronet

19' 11" - Highest Tel Cable

4' - Base offset

Base

40' 4" - 411W - 21661-21

33' 1" - Lowest Power

27' 11" - Proposed Metronet

27' 7" - Proposed Metronet

24' 9" - Highest Tel Cable

4' - Base offset

Base

38' 5" - 412W - 21661-20

29' 10" - Lowest Power

21' 8" - Proposed Metronet

19' 5" - Highest Tel Cable

4' - Base offset

Base

WIN6880

55' 2" - 473W - 500-62

40' 4" - Lowest Power

31' 5" - Proposed Metronet

31' 1" - Proposed Metronet

26' 6" - Highest Tel Cable

4' - Base offset

Base



43' - 474W - NT

36' 4" - Lowest Power

27' 10" - Proposed Metronet

22' 10" - Highest Tel Cable

21' 9" - Base offset

Base

WIN6882

42' 4" - 475W- NT

36' - Lowest Power

28' 1" - Proposed Metronet

22' 10" - Highest Tel Cable

21' 9" - Base offset

Base

42' 4" - 476W - NT

34' 6" - Lowest Power

20' 3" - Proposed Metronet

15' 5" - Highest Tel Cable

42' 4" - Base offset

Base

42' 4" - 477W - NT

27' 2" - Lowest Power

20' - Proposed Metronet

14' 9" - Highest Tel Cable

42' 4" - Base offset

Base

42' 4" - 478W - NT

27' 3" - Lowest Power

23' 11" - Proposed Metronet

22' 4" - Highest Tel Cable

42' 4" - Base offset

Base

WIN6886

37' 10" - 479W - 500-57-50

25' - Lowest Power

21' 8" - Proposed Metronet

19' 2" - Highest Tel Cable

4' - Base offset

Base



44' 4" - 480W - 500-57

27' 11" - Lowest Power

24' 6" - Proposed Metronet

22' 2" - Highest Tel Cable

NO
THROUGH
TRUCKS

4' - Base offset

Base

WIN6888

44' 4" - 481W - 500-56-50

23' 9" - Lowest Power

19' 11" - Proposed Metronet

17' 3" - Highest Tel Cable

4' - Base offset

Base

41' 1" - 482W - 500-56

27' 9" - Lowest Power

24' 3" - Proposed Metronet

22' 4" - Highest Tel Cable

4' - Base offset

Base

43' 2" - 483W- 500-55

26' 10" - Lowest Power

23' 6" - Proposed Metronet

21' 11" - Highest Tel Cable

4' - Base offset

Base

WIN6891

42' 6" - 484W - 800500-54

35' 7" - Lowest Power

27' 3" - Proposed Metronet

22' 3" - Highest Tel Cable

4' - Base offset

Base

WIN6892



27' 11" - Lowest Power

23' 11" - Proposed Metronet

22' - Highest Tel Cable

4' - Base offset
Base

43' 7" - 486W - 800500-53

36' 7" - Lowest Power

27' 5" - Proposed Metronet

22' 4" - Highest Tel Cable

4' - Base offset
Base

WIN6894

42' 9" - 487W - NT

26' 1" - Lowest Power

22' 1" - Proposed Metronet

20' 1" - Highest Tel Cable

4' - Base offset

Base

WIN6895

45' - 488W - 800500-523

37' 2" - Lowest Power

27' 8" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

Base

WIN6896

42' 6" - 489W - NT

26' 7" - Lowest Power

26' 1" - Proposed Metronet

22' 4" - Highest Tel Cable

4' - Base offset

Base

45' 4" - 490W - 800500-503

25' 2" - Lowest Power

21' 8" - Proposed Metronet

20' - Highest Tel Cable

4' - Base offset

WIN6898

47' 5" - 491W - NT

28' - Lowest Power

25' 5" - Proposed Metronet

21' 9" - Highest Tel Cable

4' - Base offset

Base

WIN6899

43' 6" - 492W - NT

27' 7" - Lowest Power

23' 7" - Proposed Metronet

20' 9" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 3:23 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX-FR02-02W
Attachments: Map Key.pdf; LX-FR02-02W - METRONET POLE INVENTORY REPORT.XLSX; LX-FR02-02W - Windstream Inventory Report.pdf; LX-FR02-02W MAP.PDF; O-Calcs.pdf; Pole Photos.pdf

Good Morning,
Please see attached for proposal titled LX-FR02-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



LX-FR02-02W Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole c	Make Ready
		413W 21661-19	45/ 3	WS	1=None		
KU	0	413W 21661-19		WS			
Windstream	25	413W 21661-19		WS			
Total Pole Count	25	413W 21661-19		WS			
Total Needing Make Ready	11	413W 21661-19		WS			
		414W 21661-18	50/ 3	WS	1=None		
		414W 21661-18		WS			
		414W 21661-18		WS			
		414W 21661-18		WS			
		414W 21661-18		WS			
		414W 21661-18		WS			
		414W 21661-18		WS			
		414W 21661-18		WS			
		414W 21661-18		WS			
		414W 21661-18		WS			
		415W 21661-17	45/ 3	WS	1=None		
		415W 21661-17		WS			
		415W 21661-17		WS			
		415W 21661-17		WS			
		415W 21661-17		WS			
		416W 21661-16	45/ 3	WS	1=None		
		416W 21661-16		WS			
		416W 21661-16		WS			
		416W 21661-16		WS			
		416W 21661-16		WS			
		417W 21661-15	45/ 3	WS	1=None		
		417W 21661-15		WS			
		417W 21661-15		WS			
		417W 21661-15		WS			
		417W 21661-15		WS			
		418W 21661-14	45/ 3	WS	2=Comms		

418W	21661-14		WS	
418W	21661-14		WS	
418W	21661-14		WS	
418W	21661-14		WS	
418W	21661-14		WS	
418W	21661-14		WS	
419W	21661-13	45/ 3	WS	2=Comms
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
419W	21661-13		WS	
421W	21661-11	45/ 3	WS	2=Comms
421W	21661-11		WS	
421W	21661-11		WS	
421W	21661-11		WS	
421W	21661-11		WS	
421W	21661-11		WS	
421W	21661-11		WS	
421W	21661-11		WS	
422W	21661-10	45/ 3	WS	3=Elec
422W	21661-10		WS	
422W	21661-10		WS	
422W	21661-10		WS	
422W	21661-10		WS	
422W	21661-10		WS	
422W	21661-10		WS	
422W	21661-10		WS	
422W	21661-10		WS	
423W	NT	45/ 3	WS	1=None
423W	NT		WS	
423W	NT		WS	
423W	NT		WS	
423W	NT		WS	
424W	NT	45/ 3	WS	1=None
424W	NT		WS	
424W	NT		WS	
424W	NT		WS	
424W	NT		WS	

425W	21661-7	45/ 3	WS	1=None
425W	21661-7		WS	
425W	21661-7		WS	
425W	21661-7		WS	
425W	21661-7		WS	
426W	21661-6	45/ 3	WS	1=None
426W	21661-6		WS	
426W	21661-6		WS	
426W	21661-6		WS	
426W	21661-6		WS	
427W	21661-5	45/ 3	WS	1=None
427W	21661-5		WS	
427W	21661-5		WS	
427W	21661-5		WS	
427W	21661-5		WS	
428W	21661-4	45/ 3	WS	1=None
428W	21661-4		WS	
428W	21661-4		WS	
428W	21661-4		WS	
428W	21661-4		WS	
429W	21661-3	45/ 3	WS	1=None
429W	21661-3		WS	
429W	21661-3		WS	
429W	21661-3		WS	
429W	21661-3		WS	
429W	21661-3		WS	
430W	21661-2	45/ 3	WS	2=Comms
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
430W	21661-2		WS	
431W	21661-1	45/ 3	WS	2=Comms
431W	21661-1		WS	
431W	21661-1		WS	

Owner	Category	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
35.50	391 CHILESBURG RD	37.98500	-84.41225	KU			
		37.98500	-84.41225	KU			
		37.98500	-84.41225	Metronet			
		37.98500	-84.41225	Charter			
		37.98500	-84.41225	Windstream			
	391 CHILESBURG RD	37.98502	-84.41225	KU			
		37.98502	-84.41225	KU			
		37.98502	-84.41225	KU			
		37.98502	-84.41225	KU			
		37.98502	-84.41225	Metronet			
		37.98502	-84.41225	Metronet			
		37.98502	-84.41225	Charter			
		37.98502	-84.41225	Charter			
		37.98502	-84.41225	Windstream			
		37.98502	-84.41225	Windstream			
	394 CHILESBURG RD	37.98477	-84.41261	KU			
		37.98477	-84.41261	KU			
		37.98477	-84.41261	Metronet			
		37.98477	-84.41261	Charter			
		37.98477	-84.41261	Windstream			
	394 CHILESBURG RD	37.98442	-84.41307	KU			
		37.98442	-84.41307	KU			
		37.98442	-84.41307	Metronet			
		37.98442	-84.41307	Charter			
		37.98442	-84.41307	Windstream			
	295 CHILESBURG RD	37.98413	-84.41358	KU			
		37.98413	-84.41358	KU			
		37.98413	-84.41358	Metronet			
		37.98413	-84.41358	Charter			
		37.98413	-84.41358	Windstream			
25.70	295 CHILESBURG RD	37.98390	-84.41377	KU			

			37.98390	-84.41377	KU
			37.98390	-84.41377	KU
			37.98390	-84.41377	Metronet
Lower Charter			37.98390	-84.41377	Charter
			37.98390	-84.41377	Charter
			37.98390	-84.41377	Windstream
	295 CHILESBURG RD		37.98354	-84.41445	KU
			37.98354	-84.41445	KU
			37.98354	-84.41445	KU
			37.98354	-84.41445	KU
			37.98354	-84.41445	KU
			37.98354	-84.41445	KU
			37.98354	-84.41445	KU
			37.98354	-84.41445	Metronet
Lower Charter			37.98354	-84.41445	Charter
Lower Windstream			37.98354	-84.41445	Windstream
Trees Blocking Midspan	39.70	290 HAYS BLVD	37.98287	-84.41531	KU
			37.98287	-84.41531	KU
			37.98287	-84.41531	KU
			37.98287	-84.41531	KU
			37.98287	-84.41531	KU
			37.98287	-84.41531	Metronet
Lower Charter			37.98287	-84.41531	Charter
Lower Windstream			37.98287	-84.41531	Windstream
Trees Blocking Midspan		290 HAYS BLVD	37.98266	-84.41574	KU
			37.98266	-84.41574	KU
			37.98266	-84.41574	KU
			37.98266	-84.41574	KU
			37.98266	-84.41574	KU
Raise secondary drip loop			37.98266	-84.41574	KU
			37.98266	-84.41574	Metronet
			37.98266	-84.41574	Charter
			37.98266	-84.41574	Windstream
		290 HAYS BLVD	37.98238	-84.41601	KU
			37.98238	-84.41601	KU
			37.98238	-84.41601	Metronet
			37.98238	-84.41601	Charter
			37.98238	-84.41601	Windstream
Trees Blocking Midspan		288 HANNAH TODD PI	37.98217	-84.41638	KU
			37.98217	-84.41638	KU
			37.98217	-84.41638	Metronet
			37.98217	-84.41638	Charter
			37.98217	-84.41638	Windstream

	292 HANNAH TODD PI	37.98180	-84.41683	KU
		37.98180	-84.41683	KU
		37.98180	-84.41683	Metronet
		37.98180	-84.41683	Charter
		37.98180	-84.41683	Windstream
	300 HANNAH TODD PI	37.98163	-84.41727	KU
		37.98163	-84.41727	KU
		37.98163	-84.41727	Metronet
		37.98163	-84.41727	Charter
		37.98163	-84.41727	Windstream
	300 HANNAH TODD PI	37.98136	-84.41765	KU
		37.98136	-84.41765	KU
		37.98136	-84.41765	Metronet
		37.98136	-84.41765	Charter
		37.98136	-84.41765	Windstream
	300 HANNAH TODD PI	37.98107	-84.41794	KU
		37.98107	-84.41794	KU
		37.98107	-84.41794	Metronet
		37.98107	-84.41794	Charter
		37.98107	-84.41794	Windstream
Trees Blocking Midspan	100 CHILESBURG RD	37.98085	-84.41834	KU
		37.98085	-84.41834	KU
		37.98085	-84.41834	KU
		37.98085	-84.41834	Metronet
		37.98085	-84.41834	Charter
		37.98085	-84.41834	Windstream
	100 CHILESBURG RD	37.98065	-84.41863	KU
		37.98065	-84.41863	KU
		37.98065	-84.41863	KU
		37.98065	-84.41863	KU
		37.98065	-84.41863	KU
		37.98065	-84.41863	KU
		37.98065	-84.41863	KU
		37.98065	-84.41863	Metronet
Lower Charter		37.98065	-84.41863	Charter
Lower Charter		37.98065	-84.41863	Charter
Lower Windstream		37.98065	-84.41863	Windstream
Lower Windstream		37.98065	-84.41863	Windstream
	45.20 100 CHILESBURG RD	37.98033	-84.41913	KU
		37.98033	-84.41913	KU
		37.98033	-84.41913	KU

	37.98033	-84.41913	KU	
	37.98033	-84.41913	Metronet	
	37.98033	-84.41913	Metronet	
Lower Charter	37.98033	-84.41913	Charter	
Lower Charter	37.98033	-84.41913	Charter	
Lower Charter	37.98033	-84.41913	Charter	
Lower Charter	37.98033	-84.41913	Charter	
Lower Windstream	37.98033	-84.41913	Windstream	
Lower Windstream	37.98033	-84.41913	Windstream	
Lower Windstream	37.98033	-84.41913	Windstream	
Lower Windstream	37.98033	-84.41913	Windstream	
	44.30 3490 RICHMOND RD	37.99538	-84.43969	KU
		37.99538	-84.43969	KU
		37.99538	-84.43969	KU
		37.99538	-84.43969	KU
		37.99538	-84.43969	KU
		37.99538	-84.43969	KU
		37.99538	-84.43969	KU
		37.99538	-84.43969	Metronet
Lower Level 3		37.99538	-84.43969	Level 3
Lower Level 3		37.99538	-84.43969	Level 3
Lower Level 3		37.99538	-84.43969	Level 3
Lower Level 3		37.99538	-84.43969	Level 3
		37.99538	-84.43969	Charter
Attach Charter to new pole		37.99538	-84.43969	Charter
		37.99538	-84.43969	Windstream
		37.99538	-84.43969	Windstream
		37.99538	-84.43969	Windstream
	3454 RICHMOND RD	37.99580	-84.44026	KU
		37.99580	-84.44026	KU
		37.99580	-84.44026	KU
		37.99580	-84.44026	KU
		37.99580	-84.44026	KU
		37.99580	-84.44026	KU
		37.99580	-84.44026	Metronet
Lower Level 3		37.99580	-84.44026	Level 3
Lower Level 3		37.99580	-84.44026	Level 3
Lower Charter		37.99580	-84.44026	Charter
Attach Charter to new pole		37.99580	-84.44026	Charter
Attach Windstream to new pole		37.99580	-84.44026	Windstream
Attach Windstream to new pole		37.99580	-84.44026	Windstream
		37.99580	-84.44026	Windstream
	55.50 3454 RICHMOND RD	37.99611	-84.44063	KU
		37.99611	-84.44063	KU

	37.99611	-84.44063	KU	
	37.99611	-84.44063	KU	
	37.99611	-84.44063	KU	
	37.99611	-84.44063	Metronet	
	37.99611	-84.44063	Level 3	
	37.99611	-84.44063	Level 3	
	37.99611	-84.44063	Charter	
	37.99611	-84.44063	Charter	
	37.99611	-84.44063	Windstream	
	37.99611	-84.44063	Windstream	
	37.99611	-84.44063	Windstream	
	3370 RICHMOND RD	37.99648	-84.44104	KU
		37.99648	-84.44104	KU
		37.99648	-84.44104	KU
		37.99648	-84.44104	KU
		37.99648	-84.44104	KU
		37.99648	-84.44104	KU
		37.99648	-84.44104	Metronet
Lower Level 3		37.99648	-84.44104	Level 3
Lower Level 3		37.99648	-84.44104	Level 3
Lower Level 3		37.99648	-84.44104	Level 3
Lower Charter		37.99648	-84.44104	Charter
		37.99648	-84.44104	Charter
		37.99648	-84.44104	Windstream
		37.99648	-84.44104	Windstream
		37.99648	-84.44104	Windstream
		37.99648	-84.44104	Windstream
		37.99648	-84.44104	Windstream
	3370 RICHMOND RD	37.99679	-84.44136	KU
		37.99679	-84.44136	KU
		37.99679	-84.44136	KU
		37.99679	-84.44136	KU
		37.99679	-84.44136	KU
		37.99679	-84.44136	KU
Raise streetlight		37.99679	-84.44136	KU
		37.99679	-84.44136	Metronet
		37.99679	-84.44136	Level 3
		37.99679	-84.44136	Level 3
		37.99679	-84.44136	Charter
		37.99679	-84.44136	Charter
		37.99679	-84.44136	Windstream
		37.99679	-84.44136	Windstream
		37.99679	-84.44136	Windstream
	3350 RICHMOND RD	37.99716	-84.44185	KU

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Ped
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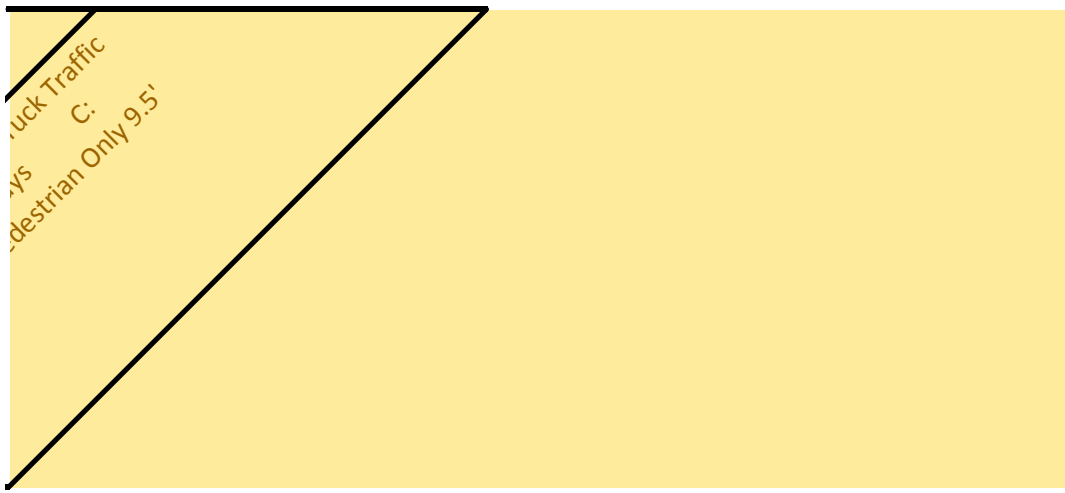
Primary	38'11"			N	N			D: Pedestrian Only 9.5'		
Neutral	30'10"			N	N					
Communication		23'9"		N	N					
Communication	22'9"		61	N	N					
Communication	21'2"	17'2"		N	N					
Primary	39'6"			N	N			D: Pedestrian Only 9.5'		
Neutral	38'7"			N	N					
Primary	34'11"			N	N					
Neutral	30'9"			N	N					
Communication		24'10"		N	N					
Communication		24'6"		N	N					
Communication	23'6"		191	N	N					
Communication	22'9"			N	N					
Communication	21'4"	14'7"		N	N					
Communication	20'10"			N	N					
Primary	37'4"			N	N			D: Pedestrian Only 9.5'		
Neutral	35'5"			N	N					
Communication		23'4"		N	N					
Communication	22'4"		182	N	N					
Communication	21'2"	17'5"		N	N					
Primary	37'3"			N	N			D: Pedestrian Only 9.5'		
Neutral	35'6"			N	N					
Communication		25'4"		N	N					
Communication	24'4"		157	N	N					
Communication	22'10"	19'6"		N	N					
Primary	37'2"			N	N			D: Pedestrian Only 9.5'		
Neutral	35'10"			N	N					
Communication		24'2"		N	N					
Communication	23'2"		124	N	N					
Communication	21'8"	14'3"		N	N					
Primary	35'5"			N	N			D: Pedestrian Only 9.5'		

Primary	33'4"			N	N	
Neutral	29'4"			N	N	
Communication		25'11"		N	N	
Communication	25'11"	24'11"		N	N	
Communication	24'6"		122	N	N	
Communication	17'3"	14'2"		N	N	
Neutral	36'11'			Y	Y	B:Residential/Over Driveways
Primary	35'11'			Y	Y	
Primary Riser	29'11"			Y	Y	
Secondary Riser	29'0"			Y	Y	
Transformer	28'1"			Y	Y	
Secondary	27'6"			Y	Y	
Secondary Drip Loop	26'2"			Y	Y	
Communication		22'9"		Y	Y	
Communication	24'7"	21'9"	20	Y	Y	
Communication	23'1"	20'9"	23'4"	Y	Y	
Neutral	36'5"			Y	Y	D: Pedestrian Only 9.5'
Primary	32'4"			Y	Y	
Neutral/Secondary	28'5"			Y	Y	
Secondary Riser X 2	28'5"			Y	Y	
Secondary Drip Loop	25'9"			Y	Y	
Communication		22'5"		Y	Y	
Communication	24'8"	21'5"	UNK	Y	Y	
Communication	23'1"	20'5"	UNK	Y	Y	
Neutral	36'3"			Y	N	D: Pedestrian Only 9.5'
Primary	35'7"			Y	N	
Primary Riser	29'3"			Y	N	
Transformer	28'4"			Y	N	
Secondary	28'0"			Y	N	
Secondary Drip Loop	26'10"	28'0"		Y	N	
Communication		24'8"		Y	N	
Communication	23'8"		UNK	Y	N	
Communication	22'1"		UNK	Y	N	
Neutral	37'11"			N	N	D: Pedestrian Only 9.5'
Primary	37'3"			N	N	
Communication		25'1"		N	N	
Communication	24'1"		76	N	N	
Communication	22'1"	13'5"		N	N	
Neutral	37'8"			N	N	D: Pedestrian Only 9.5'
Primary	37'0"			N	N	
Communication		24'10"		N	N	
Communication	23'10"		UNK	N	N	
Communication	21'11"		UNK	N	N	

Neutral	36'3"			N	N	D: Pedestrian Only 9.5'
Primary	33'10"			N	N	
Communication		23'6"		N	N	
Communication	22'6"		137	N	N	
Communication	20'7"		19'2"	N	N	
Neutral	36'6"			N	N	D: Pedestrian Only 9.5'
Primary	34'2"			N	N	
Communication		24'4"		N	N	
Communication	23'4"		134	N	N	
Communication	21'4"		19'0"	N	N	
Neutral	36'9"			N	N	D: Pedestrian Only 9.5'
Primary	35'10"			N	N	
Communication		24'9"		N	N	
Communication	23'9"		134	N	N	
Communication	21'9"		17'6"	N	N	
Neutral	37'1"			N	N	D: Pedestrian Only 9.5'
Primary	35'3"			N	N	
Communication		23'10"		N	N	
Communication	22'10"		135	N	N	
Communication	20'11"		17'6"	N	N	
Neutral	37'4"			N	N	D: Pedestrian Only 9.5'
Primary	35'4"			N	N	
Primary Riser	28'4"			N	N	
Communication		24'4"		N	N	
Communication	23'4"		UNK	N	N	
Communication	21'4"		UNK	N	N	
Neutral	37'0"			Y	N	B:Residential/Over Driveways
Primary	35'8"			Y	N	
Transformer	28'7"			Y	N	
Secondary Riser	27'7"			Y	N	
Secondary Drip Loop	27'1"			Y	N	
Streetlight	26'8"			Y	N	
Streetlight Drip Loop	26'6"			Y	N	
Communication		23'9"		Y	N	
Communication	24'3"	22'9"	168	Y	N	
Communication	23'1"	21'9"		Y	N	
Communication	22'0"	20'8"		Y	N	
Communication	20'8"	19'8"	15'10"	Y	N	
Primary	36'9"			N	N	D: Pedestrian Only 9.5'
Primary	32'7"			N	N	
OH Guy	32'1"			N	N	

Neutral	28'5"			N	N	
Communication		25'1"		N	N	
Communication		24'9"		N	N	
Communication	24'4"	24'1"	44	N	N	
Communication	24'1"	23'9"		N	N	
Communication	23'4"	23'1"		N	N	
Communication	23'0"	22'9"		N	N	
Communication	22'6"	22'0"		N	N	
Communication	22'3"	21'8"		N	N	
Communication	21'3"	21'0"	17'3"	N	N	
Communication	21'0"	20'8"		N	N	
OH Guy	52'5"			N	N	B:Residential/Over Driveways
Primary	50'6"			N	N	
Neutral	46'6"			N	N	
Primary	44'9"			N	N	
Primary	41'0"			N	N	
Neutral	34'9"			N	N	
Secondary	34'2"			N	N	
Communication		30'10"		N	N	
Communication	29'10"	28'10"	45	N	N	
Communication	29'7"	28'5"		N	N	
Communication	28'10"	27'5"		N	N	
Communication	28'8"	27'1"		N	N	
Communication	25'8"			N	N	
Communication		22'11"		N	N	
Communication	21'11"			N	N	
Communication	20'9"			N	N	
Communication	20'6"		17'9"	N	N	
Primary	45'10"			N	N	D: Pedestrian Only 9.5'
Primary	40'3"			N	N	
Primary	36'2"			N	N	
Neutral	32'1"			N	N	
Secondary	31'10"			N	N	
Secondary	31'1"			N	N	
Communication		27'8"		N	N	
Communication	27'0"	25'8"	67	N	N	
Communication	26'0"	24'7"		N	N	
Communication	24'7"	23'7"		N	N	
Communication		22'7"		N	N	
Communication		21'7"		N	N	
Communication		20'7"		N	N	
Communication	19'4"		17'3"	N	N	
Primary	45'8"			Y	N	B:Residential/Over Driveways
Primary	43'6"			Y	N	

Primary	39'3"			Y	N	
Neutral	35'11"			Y	N	
Secondary	34'3"			Y	N	
Communication		26'10"		Y	N	
Communication	24'10"		35	Y	N	
Communication	23'8"			Y	N	
Communication	22'9"			Y	N	
Communication	21'11"			Y	N	
Communication	21'3"			Y	N	
Communication	20'3"			Y	N	
Communication	19'0"	20'0"		Y	N	
Primary	45'3"			Y	N	D: Pedestrian Only 9.5'
Primary	40'8"			Y	N	
Streetlight	35'9"			Y	N	
Neutral	34'8"			Y	N	
Secondary	33'10"			Y	N	
OH Guy	32'6"			Y	N	
Communication		30'6"		Y	N	
Communication	29'11"	28'6"	54	Y	N	
Communication	29'7"	28'2"		Y	N	
Communication	29'2"	28'6"		Y	N	
Communication	28'6"	27'6"		Y	N	
Communication	27'3"			Y	N	
Communication	26'7"			Y	N	
Communication	26'0"			Y	N	
Communication	23'3"			Y	N	
Communication	22'0"			Y	N	
Communication	20'5"	18'4"		Y	N	
Primary	47'0"			N	N	D: Pedestrian Only 9.5'
Primary	42'1"			N	N	
Neutral	35'0"			N	N	
Secondary	34'8"			N	N	
Streetlight	33'8"			N	N	
Streetlight	30'11"			N	N	
Streetlight	28'3"	29'9"		N	N	
Communication		28'9"		N	N	
Communication	26'9"		57	N	N	
Communication	25'11"			N	N	
Communication	24'10"			N	N	
Communication	22'11"			N	N	
Communication	22'0"			N	N	
Communication	21'6"			N	N	
Communication	20'10"	15'7"		N	N	
Primary	48'1"			Y	N	D: Pedestrian Only 9.5'



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #:

LX-FR02-02W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, LAUREN SANDEFUR
 City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Phono # 812-213-1328
 EMAIL ADDRESS LAUREN.SANDEFUR@METRONETINC.COM
 Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: LSANDEFUR 3/18/18

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licensors Work Description	Bill for Rent Y or N
1	21661-19	413W	391 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	21'2"	N/A	30'10"	(1)Fiber/Strand			
2	21661-18	414W	391 CHILESBERG RD, Lexington, KY 4050	50, 3, WXM	21'4"	N/A	30'9"	(2)Fiber/Strand			
3	21661-17	415W	394 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	21'2"	N/A	35'5"	(1)Fiber/Strand			
4	21661-16	416W	394 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	22'10"	N/A	35'6"	(1)Fiber/Strand			
5	21661-15	417W	295 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	21'8"	N/A	35'10"	(1)Fiber/Strand			
6	21661-14	418W	295 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	17'3"	19'5"	29'4"	(1)Fiber/Strand			
7	21661-13	419W	295 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	22'9"	N/A	26'2"	(1)Fiber/Strand			
8	21661-11	421W	290 HAYS BLVD, Lexington, KY 40509	45, 3, WXM	22'5"	N/A	25'9"	(1)Fiber/Strand			
9	21661-10	422W	290 HAYS BLVD, Lexington, KY 40509	45, 3, WXM	21'1"	N/A	26'10"	(1)Fiber/Strand			
10	NT	423W	290 HAYS BLVD, Lexington, KY 40509	45, 3, WXM	22'1"	N/A	37'3"	(1)Fiber/Strand			
11	NT	424W	288 HANNAH TODD PL, Lexington, KY 405	45, 3, WXM	21'11"	N/A	37'0"	(1)Fiber/Strand			
12	21661-7	425W	292 HANNAH TODD PL, Lexington, KY 405	45, 3, WXM	20'7"	N/A	33'10"	(1)Fiber/Strand			
13	21661-6	426W	300 HANNAH TODD PL, Lexington, KY 405	45, 3, WXM	21'4"	N/A	34'2"	(1)Fiber/Strand			
14	21661-5	427W	300 HANNAH TODD PL, Lexington, KY 405	45, 3, WXM	21'9"	N/A	35'10"	(1)Fiber/Strand			
15	21661-4	428W	300 HANNAH TODD PL, Lexington, KY 405	45, 3, WXM	20'11"	N/A	35'3"	(1)Fiber/Strand			
16	21661-3	429W	100 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	21'4"	N/A	28'3"	(1)Fiber/Strand			
17	21661-2	430W	100 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	22'0"	N/A	26'6"	(1)Fiber/Strand			
18	21661-1	431W	100 CHILESBERG RD, Lexington, KY 4050	45, 3, WXM	22'6"	N/A	28'5"	(2)Fiber/Strand			
19	NT	493W	3490 RICHMOND RD, Lexington, KY 40509	60, 1, WXM	21'11"	N/A	34'2"	(1)Fiber/Strand			

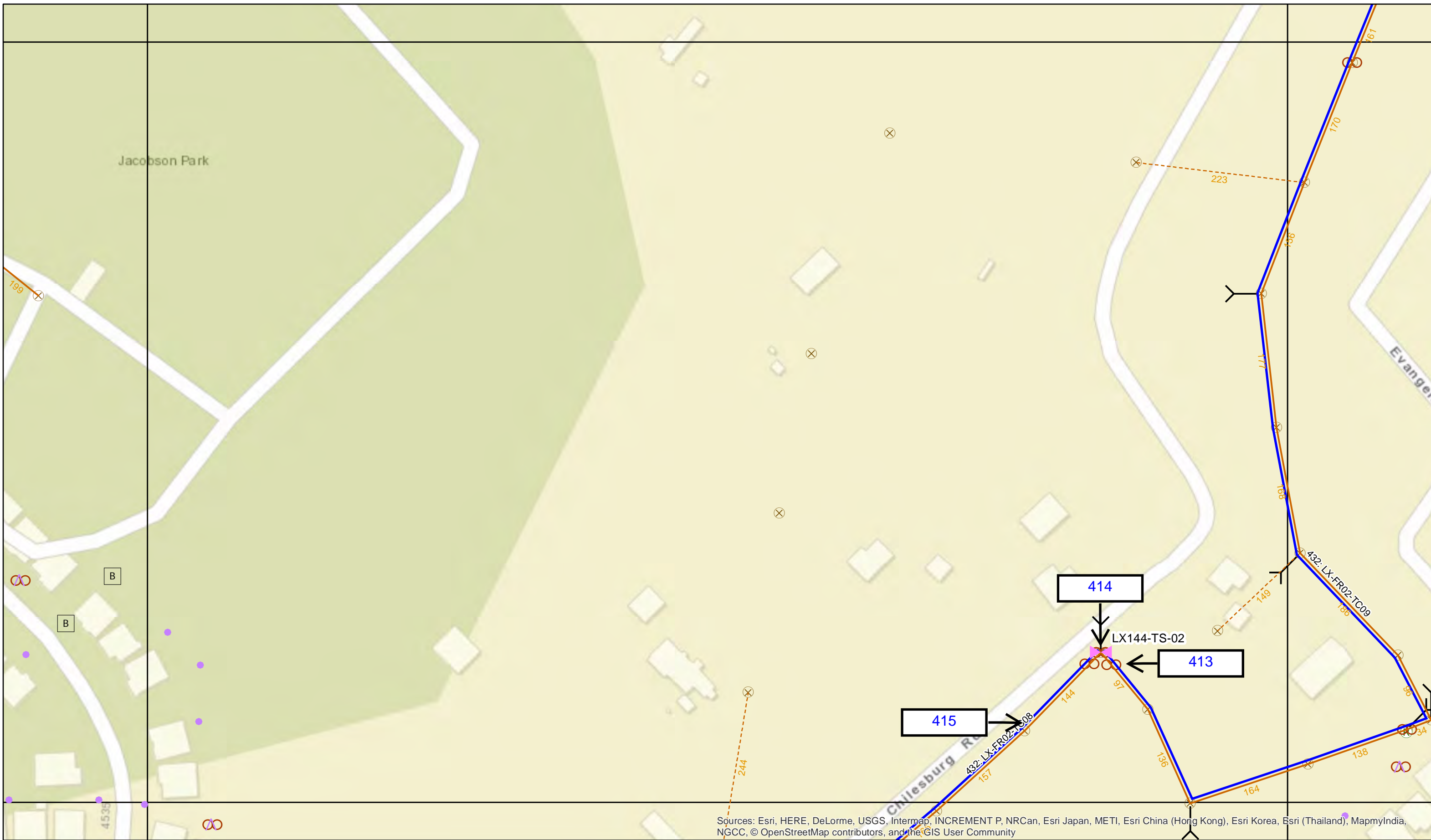
20	NT	494W	3454 RICHMOND RD, Lexington, KY 40504	55, 2, WXM	N/A	N/A	31'1"		(1)Fiber/Strand		
21	500-46	495W	3454 RICHMOND RD, Lexington, KY 40504	55, 2, WXM	21'3"	N/A	34'3"		(1)Fiber/Strand		
22	500-44-50	496W	3370 RICHMOND RD, Lexington, KY 40504	55, 2, WXM	26'7"	N/A	33'10"		(1)Fiber/Strand		
23	500-44	497W	3370 RICHMOND RD, Lexington, KY 40504	55, 2, WXM	22'10"	N/A	28'9"		(1)Fiber/Strand		
24	500-43	498W	3350 RICHMOND RD, Lexington, KY 40504	55, 2, WXM	22'8"	N/A	34'1"		(1)Fiber/Strand		
25	500-42	499W	3350 RICHMOND RD, Lexington, KY 40504	55, 2, WXM	24'10"	N/A	33'8"		(1)Fiber/Strand		

ESTIMATED TOTAL COSTS

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXA143
 PROJECT NUMBER:
 LXTNXY00497.CB
 DATE: 1/16/2018
 USER NAME: argjis
 DESIGN ENG

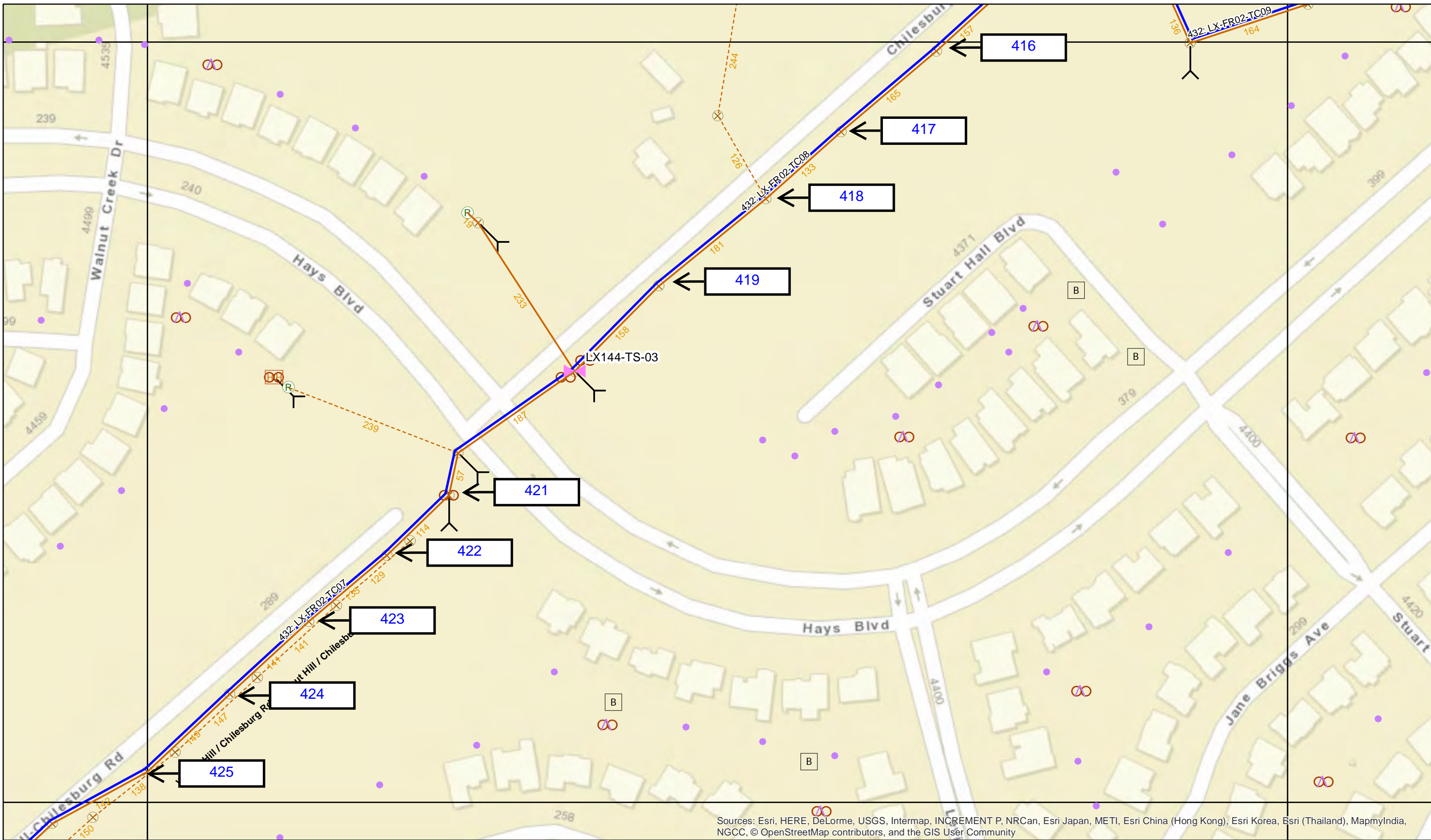
STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAH43
 PROJECT NUMBER:
 LXTNXY00497.CB

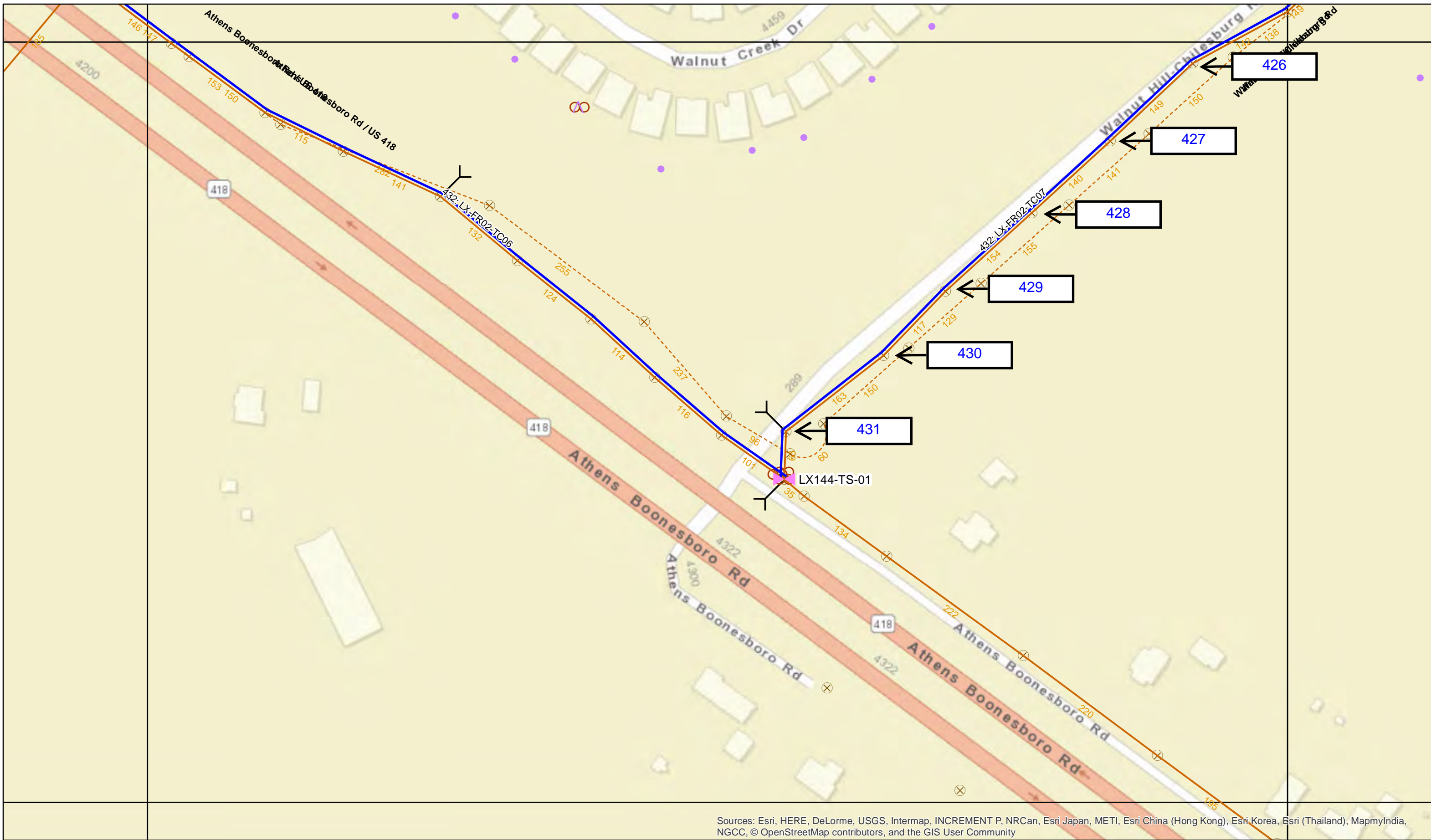
STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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 Evansville, In 47715

WIN6924



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LXAG42
 PROJECT NUMBER:
 LXTNXY00497.CB
 DATE: 1/16/2018
 USER NAME: arcgis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715

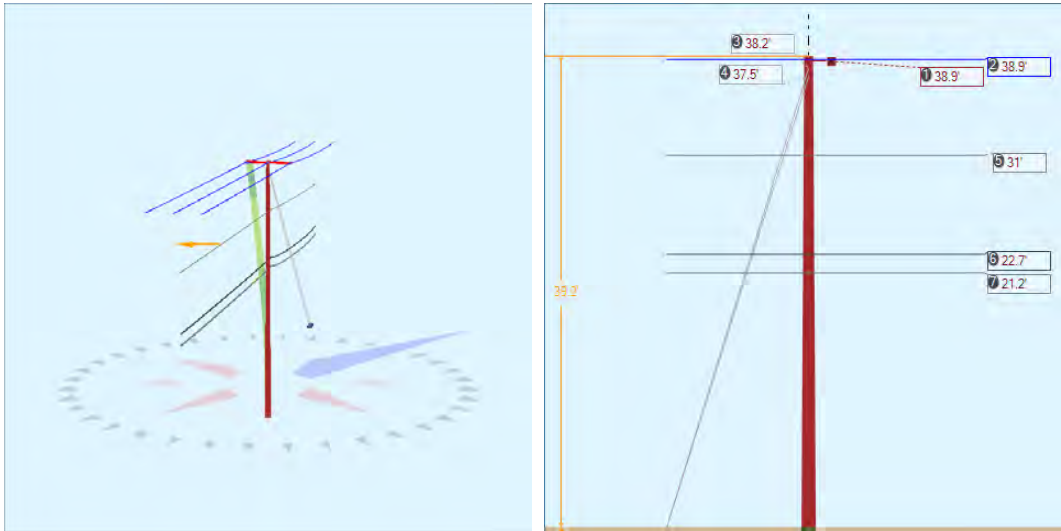


WIN6925

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

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Pole Num:	413W - 21661-19	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.79	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.58	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984998 Deg	Longitude:	-84.412245 Deg	Elevation:	902.013652343045		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.9	0.0 225.6
Groundline	56.9	0.0 225.6
Vertical	25.9	36.1 146.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,464	175.5 225.6
Groundline	51,464	175.5 225.6
GL Allowable	95,222	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	46.1	326.0		47.2	225.6	47.5	140.0
? EHS 3/8 (Down)			38.2	68.1	225.6	75.4	140.0
? Single Helix Anchor	44.4	326.0		50.2	225.6	50.6	140.0
? EHS 3/8 (Down)			37.5	72.4	225.6	80.3	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 175.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	12,917	395.3	382,869	744.0	402.1	34,558	229	2	34,560	508.2
Comms	3,153	96.5	54,003	104.9	56.7	4,874	197	2	4,876	71.7
GuyBraces	-12,960	-396.6	-388,054	-754.0	-407.5	-35,026	18,868	168	-34,858	-512.6
Pole	141	4.3	2,185	4.3	2.3	197	2,310	21	218	3.2
Crossarms	7	0.2	191	0.4	0.2	17	95	1	18	0.3
Insulators	9	0.3	270	0.5	0.3	24	57	1	25	0.4
Pole Load	3,268	100.0	51,464	100.0	54.1	4,645	21,756	194	4,839	71.2
Pole Reserve Capacity			43,758		46.0	2,155			1,961	28.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 175.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-33	-1.0	-4,911	-9.5	-5.2	-443	19,135	170	-273	-4.0
Unknown, COMMUNICATION	3,153	96.5	53,999	104.9	56.7	4,874	216	2	4,876	71.7
Pole	141	4.3	2,185	4.3	2.3	197	2,310	21	218	3.2
<Undefined>	7	0.2	191	0.4	0.2	17	95	1	18	0.3
Totals:	3,268	100.0	51,464	100.0	54.1	4,645	21,756	194	4,839	71.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.92	7.32	0.7200	0.26	0.462	57.1	147.3	57.1	3,210	143,190	11	365	143,566
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.92	45.83	0.7200	0.26	0.462	57.1	147.3	57.1	3,210	143,190	-4	365	143,551
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.92	45.35	0.7200	0.26	0.462	57.1	147.3	57.1	3,210	143,190	8	365	143,562
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.92	18.18	0.7200	0.02	0.462	34.3	329.5	34.3	150	-6,824	-7	202	-6,629
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.92	48.76	0.7200	0.02	0.462	34.3	329.5	34.3	150	-6,824	-6	202	-6,628
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.92	48.31	0.7200	0.02	0.462	34.3	329.5	34.3	150	-6,824	1	202	-6,621

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.96	6.65	0.3980	0.06	0.145	57.1	147.3	57.1	2,128	75,512	-5	214	75,721
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.96	6.65	0.3980	0.02	0.145	34.3	329.5	34.3	75	-2,714	-3	118	-2,599
Totals:											481,896	-5	2,033	483,924	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	22.73	7.14	1.3300	0.71	0.337	57.1	147.3	57.1	925	24,095	-12	320	24,403
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	22.73	7.14	1.3300	0.42	0.337	34.3	329.5	34.4	60	-1,594	-7	177	-1,424
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.17	7.23	1.5000	0.81	0.900	57.1	147.3	57.1	2,000	48,518	-21	326	48,822
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.17	7.23	1.5000	0.47	0.900	34.3	329.5	34.4	150	-3,711	-13	180	-3,544
		COMMUNICATION													
Totals:											67,308	-54	1,002	68,256	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.92	5.43	328.4	328.4	50.00	4.50	3.50	96.00	-38	279	241	
Totals:											-38	279	241

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.92	0.00	328.4	-181.1	3.00	3.80	12.75	3	59	62
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.92	45.00	51.6	-181.1	3.00	3.80	12.75	-7	59	52
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.92	-45.00	245.3	-181.1	3.00	3.80	12.75	13	59	71
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.92	0.00	328.4	1.1	3.00	3.80	12.75	-8	59	51
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.92	45.00	51.6	1.1	3.00	3.80	12.75	-17	59	41
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.92	-45.00	245.3	1.1	3.00	3.80	12.75	2	59	61
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.96	0.00	58.4	328.4	2.00	3.00	3.19	-1	9	8
Bolt	Single Bolt	Unknown, COMMUNICATION	22.73	0.00	58.4	418.4	5.00	3.00	0.00	-3	0	-3

Bolt	Single Bolt	Unknown, COMMUNICATION	21.17	0.00	58.4	418.4	5.00	3.00	0.00	-3	0	-3
Totals:										-20	362	341

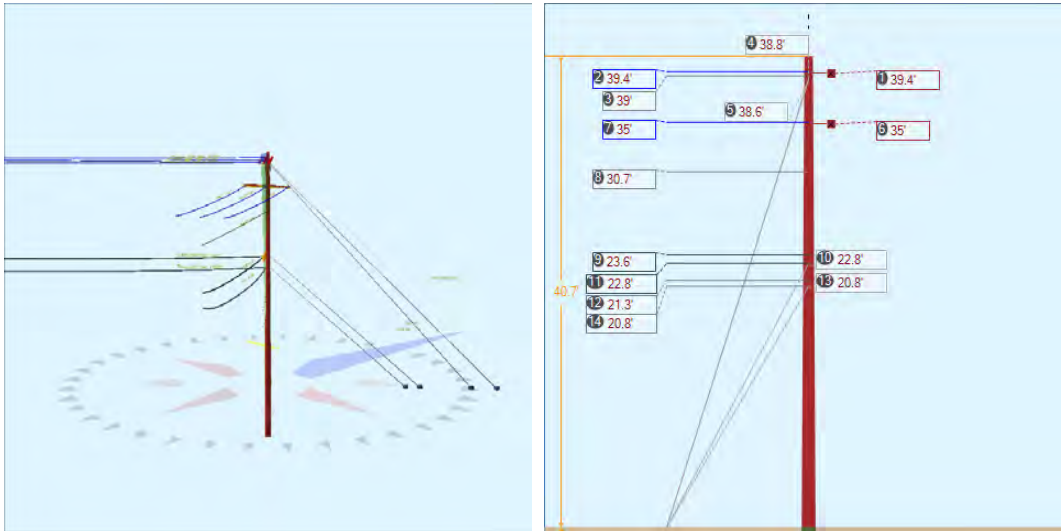
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	38.19	0.00	46.07	0.375	75.00	326.0	39.5	0.273	58.11	3.46
EHS 3/8	Down	KU, UTILITY	37.52	0.00	44.44	0.375	75.00	326.0	40.1	0.273	56.42	3.57

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	10,452	9,502	9,443	6,012	7,281	-6,340	-240,832
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	11,129	10,118	10,040	6,461	7,685	-6,691	-249,646
Totals:										12,473	14,966	-13,031	-490,478

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	46.07	326.0	20,000	1.00	20,000	9,502	9,443	47.5
Single Helix Anchor		18.00	44.44	326.0	20,000	1.00	20,000	10,118	10,040	50.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	36.06	35.35	10.45	26.23	7.32	11.97	1.60e+6	60.00	57.00	39.21	84,048	840.01	3.86

Pole Num:	414W - 21661-18	Pole Length / Class:	50 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.27	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.985016 Deg	Longitude:	-84.412251 Deg	Elevation:	906.738867352198		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	48.4	137.7
Groundline	48.4	137.7
Vertical	34.3	228.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	42,963	137.7
Groundline	42,963	137.7
GL Allowable	96,986	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	39.7	48.0	38.8	54.7	137.7	55.3	230.0
? Single Helix Anchor ? EHS 3/8 (Down)	35.3	48.0	38.6	54.4	137.7	55.0	230.0
? Single Helix Anchor ? EHS 1/4 (Down)	26.4	48.0	22.8	11.8	137.7	12.3	230.0
? Single Helix Anchor ? EHS 1/4 (Down)	23.9	48.0	20.8	11.0	137.7	11.5	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 146.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,987	194.9	104,998	244.4	108.3	7,942	475	4	7,946	116.9
Comms	846	55.2	17,090	39.8	17.6	1,293	409	4	1,296	19.1
GuyBraces	-2,579	-168.3	-85,208	-198.3	-87.9	-6,445	28,188	248	-6,198	-91.1
Pole	228	14.8	4,277	10.0	4.4	324	2,419	21	345	5.1
Crossarms	35	2.3	1,183	2.8	1.2	90	285	3	92	1.4
Insulators	17	1.1	622	1.5	0.6	47	82	1	48	0.7
Pole Load	1,533	100.0	42,963	100.0	44.3	3,250	31,858	280	3,530	51.9
Pole Reserve Capacity			54,023		55.7	3,550			3,270	48.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 146.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	894	58.3	29,924	69.7	30.9	2,264	24,173	212	2,476	36.4
Unknown, COMMUNICATION	376	24.5	7,578	17.6	7.8	573	4,981	44	617	9.1
Pole	228	14.8	4,277	10.0	4.4	324	2,419	21	345	5.1
<Undefined>	35	2.3	1,183	2.8	1.2	90	285	3	92	1.4
Totals:	1,533	100.0	42,963	100.0	44.3	3,250	31,858	280	3,530	51.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.38	18.24	0.7200	1.15	0.462	155.3	228.6	155.3	3,210	21,549	5	2,157	23,710
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.38	48.56	0.7200	1.15	0.462	155.3	228.6	155.3	3,210	21,549	-31	2,157	23,675
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.38	48.56	0.7200	1.15	0.462	155.3	228.6	155.3	3,210	21,549	34	2,157	23,740
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.01	16.51	0.3980	0.45	0.145	155.3	228.6	155.3	2,128	14,151	2	1,572	15,725
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.02	18.49	0.7200	0.02	0.462	34.3	151.1	34.3	150	6,802	8	9	6,819
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.02	48.65	0.7200	0.02	0.462	34.3	151.1	34.3	150	6,802	2	9	6,813
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.02	48.65	0.7200	0.02	0.462	34.3	151.1	34.3	150	6,802	4	9	6,815
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.72	6.74	0.3980	0.02	0.145	34.3	151.1	34.3	150	5,968	6	6	5,980
Totals:											105,174	31	8,073	113,278	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.56	7.15	1.3300	0.42	0.337	34.3	151.1	34.4	60	1,831	16	9	1,856
CATV	CATV 1.0	Unknown, COMMUNICATION	22.82	7.20	1.3300	2.24	0.337	155.3	228.6	155.3	925	3,598	10	1,874	5,482
Telco	TELE 1.5	Unknown, COMMUNICATION	21.35	7.28	1.5000	0.47	0.900	34.3	151.1	34.6	75	2,074	28	9	2,111

Telco	TELE 1.5	Unknown,	20.83	7.31	1.5000	2.64	0.900	155.3	228.6	155.3	2,000	7,102	17	1,870	8,989		
COMMUNICATION													Totals:	14,605	71	3,762	18,437

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	39.38	5.49	228.6	228.6	50.00	4.50	3.50	96.00	0	90	90
Normal	Crossarm	35.02	5.74	151.1	151.1	50.00	4.50	3.50	96.00	45	1,141	1,186
Totals:										45	1,231	1,277

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	39.38	0.00	228.6	0.0	3.00	3.80	12.75	1	92	93	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	39.38	45.00	311.6	0.0	3.00	3.80	12.75	-20	92	72	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	39.38	-45.00	145.6	0.0	3.00	3.80	12.75	22	92	114	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	39.01	0.00	228.6	228.6	3.00	3.80	12.75	1	91	92	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.02	0.00	151.1	0.0	3.00	3.80	12.75	9	82	90	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.02	45.00	233.9	0.0	3.00	3.80	12.75	7	82	88	
Deadend	Deadend Insulator - 15 kV KU, UTILITY	35.02	-45.00	68.4	0.0	3.00	3.80	12.75	11	82	92	
Spool	Spool Insulator - 25 kV KU, UTILITY	30.72	0.00	151.1	151.1	2.00	3.00	3.19	2	14	16	
Bolt	Single Bolt Unknown, COMMUNICATION	23.56	0.00	151.1	241.1	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt Unknown, COMMUNICATION	22.82	0.00	228.6	318.6	5.00	3.00	0.00	1	0	1	
Bolt	Single Bolt Unknown, COMMUNICATION	21.35	0.00	151.1	241.1	5.00	3.00	0.00	6	0	6	
Bolt	Single Bolt Unknown, COMMUNICATION	20.83	0.00	228.6	318.6	5.00	3.00	0.00	1	0	1	
Totals:										46	625	671

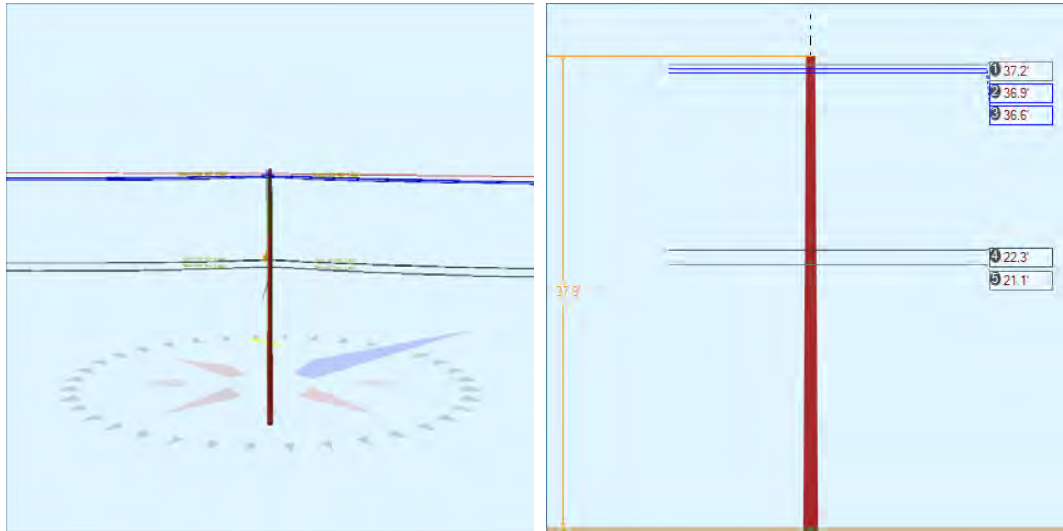
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	38.78	0.00	39.67	0.375	75.00	48.0	44.2	0.273	53.75	3.70
EHS 3/8	Down	KU, UTILITY	38.64	0.00	35.29	0.375	75.00	48.0	47.4	0.273	50.62	3.47
EHS 1/4	Down	Unknown, COMMUNICATION	22.82	0.00	26.42	0.25	75.00	48.0	40.7	0.121	33.11	1.11
EHS 1/4	Down	Unknown, COMMUNICATION	20.83	0.00	23.91	0.25	75.00	48.0	41.0	0.121	29.91	0.93

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,159	11,053	10,939	7,628	7,840	-1,109	-42,217
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,102	11,002	10,886	8,018	7,363	-1,042	-39,436
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,705	2,459	2,358	1,538	1,788	-253	-5,557
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,530	2,300	2,201	1,442	1,663	-235	-4,717
Totals:										18,626	18,653	-2,639	-91,927

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	39.67	48.0	20,000	1.00	20,000	11,053	10,939	55.3
Single Helix Anchor			18.00	35.29	48.0	20,000	1.00	20,000	11,002	10,886	55.0
Single Helix Anchor			18.00	26.42	48.0	20,000	1.00	20,000	2,459	2,358	12.3
Single Helix Anchor			18.00	23.91	48.0	20,000	1.00	20,000	2,300	2,201	11.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	35.30	35.09	10.60	31.39	7.32	12.04	1.60e+6	60.00	57.00	40.73	92,761	928.79	2.92

Pole Num:	415W - 21661-17	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.06	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984769 Deg	Longitude:	-84.412609 Deg	Elevation:	906.275325342287		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.9	0.0
Groundline	41.9	0.0
Vertical	19.3	25.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,895	138.4
Groundline	37,895	138.4
GL Allowable	91,666	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 138.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	665	53.0	25,120	66.3	27.4	1,855	1,514	14	1,869	27.5
Comms	375	29.9	8,580	22.6	9.4	634	676	6	640	9.4
Pole	212	16.9	4,057	10.7	4.4	300	2,198	20	320	4.7
Insulators	3	0.2	137	0.4	0.2	10	40	0	11	0.2
Pole Load	1,254	100.0	37,895	100.0	41.3	2,798	4,428	40	2,839	41.7
Pole Reserve Capacity			53,771		58.7	4,002			3,961	58.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 138.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	668	53.2	25,246	66.6	27.5	1,864	1,535	14	1,878	27.6
Unknown, COMMUNICATION	375	29.9	8,592	22.7	9.4	634	695	6	641	9.4
Pole	212	16.9	4,057	10.7	4.4	300	2,198	20	320	4.7
Totals:	1,254	100.0	37,895	100.0	41.3	2,798	4,428	40	2,839	41.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.25	15.20	0.5630	0.31	0.291	155.3	48.6	155.3	5,010	662	25	1,794	2,480
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.25	15.20	0.5630	0.32	0.291	157.7	228.1	157.7	5,010	967	25	1,821	2,813
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.92	11.20	1.1080	1.95	1.093	155.3	48.6	155.3	3,200	419	69	2,689	3,177
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.92	19.20	1.1080	1.95	1.093	155.3	48.6	155.3	3,200	419	69	2,689	3,177
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.92	11.20	1.1080	1.99	1.093	157.7	228.1	157.7	3,200	612	70	2,730	3,413
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.92	19.20	1.1080	1.99	1.093	157.7	228.1	157.7	3,200	612	70	2,730	3,413
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.58	15.20	1.1080	1.95	1.093	155.3	48.6	155.3	3,200	415	70	2,665	3,149
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.58	15.20	1.1080	1.99	1.093	157.7	228.1	157.7	3,200	607	71	2,706	3,383
Totals:											4,712	470	19,823	25,005	

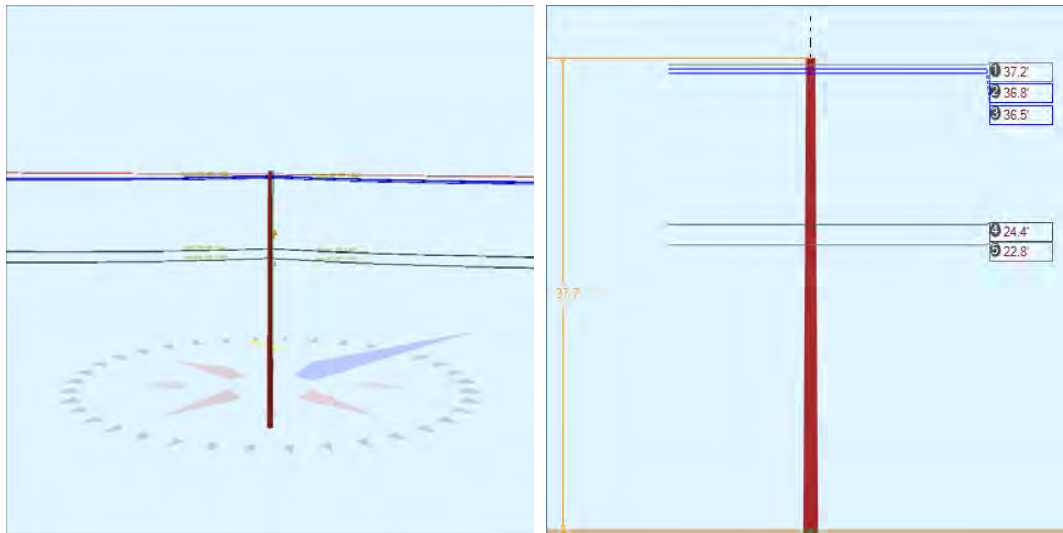
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.33	7.08	1.3300	2.24	0.337	155.3	48.6	155.3	925	73	72	1,850	1,995
CATV	CATV 1.0	Unknown, COMMUNICATION	22.33	7.08	1.3300	2.29	0.337	157.7	228.1	157.8	925	107	73	1,880	2,060
Telco	TELE 1.5	Unknown, COMMUNICATION	21.15	7.15	1.5000	2.64	0.900	155.3	48.6	155.3	2,000	150	127	1,915	2,192

Telco	TELE 1.5	Unknown,	21.15	7.15	1.5000	2.70	0.900	157.7	228.1	157.8	2,000	219	129	1,946	2,294
COMMUNICATION												Totals:			
												549	401	7,590	8,541

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	37.25	0.00	140.0	140.0	11.00	4.75	11.50	26	99	125
Bolt	Three Bolt	Unknown, COMMUNICATION	22.33	0.00	138.4	48.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.15	0.00	138.4	48.4	5.00	3.00	0.00	6	0	6
Totals:										38	99	137

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.92	33.90	10.77	17.31	7.32	11.82	1.60e+6	60.00	57.00	37.94	22,914	229.41	5.18

Pole Num:	416W - 21661-16	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.29	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.02	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984420 Deg	Longitude:	-84.413071 Deg	Elevation:	895.803648884114		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.1	0.0
Groundline	43.1	0.0
Vertical	20.0	26.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	38,715	318.4
Groundline	38,715	318.4
GL Allowable	91,040	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 318.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	670	53.1	25,236	65.2	27.7	1,877	1,527	14	1,890	27.8
Comms	378	30.0	9,338	24.1	10.3	694	682	6	701	10.3
Pole	210	16.7	4,004	10.3	4.4	298	2,179	20	318	4.7
Insulators	3	0.2	137	0.4	0.2	10	40	0	11	0.2
Pole Load	1,261	100.0	38,715	100.0	42.5	2,879	4,427	41	2,919	42.9
Pole Reserve Capacity			52,325		57.5	3,921			3,881	57.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 318.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	672	53.3	25,362	65.5	27.9	1,886	1,548	14	1,900	27.9
Unknown, COMMUNICATION	378	30.0	9,349	24.2	10.3	695	701	6	702	10.3
Pole	210	16.7	4,004	10.3	4.4	298	2,179	20	318	4.7
Totals:	1,261	100.0	38,715	100.0	42.5	2,879	4,427	41	2,919	42.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	15.19	0.5630	0.32	0.291	157.7	48.1	157.7	5,010	966	25	1,817	2,808
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	15.19	0.5630	0.32	0.291	158.0	228.6	158.0	5,010	659	25	1,821	2,505
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	11.19	1.1080	1.99	1.093	157.7	48.1	157.7	3,200	612	70	2,724	3,406
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	19.19	1.1080	1.99	1.093	157.7	48.1	157.7	3,200	612	70	2,724	3,406
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	11.19	1.1080	1.99	1.093	158.0	228.6	158.0	3,200	417	70	2,729	3,217
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	19.19	1.1080	1.99	1.093	158.0	228.6	158.0	3,200	417	70	2,729	3,217
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	15.19	1.1080	1.99	1.093	157.7	48.1	157.7	3,200	606	71	2,699	3,376
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	15.19	1.1080	1.99	1.093	158.0	228.6	158.0	3,200	413	71	2,705	3,189
Totals:											4,701	473	19,949	25,123	

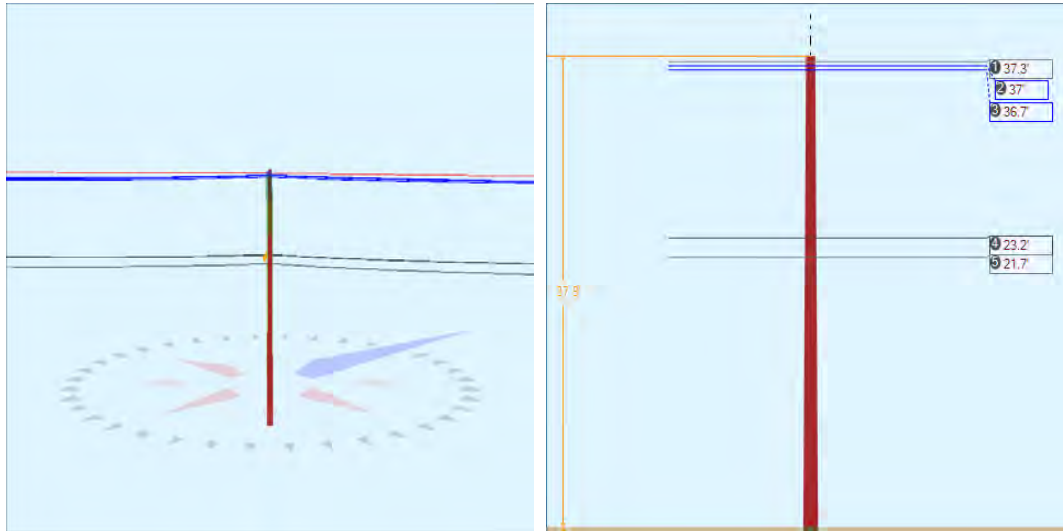
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	24.40	6.95	1.3300	2.29	0.337	157.7	48.1	157.8	925	117	72	2,054	2,243
CATV	CATV 1.0	Unknown, COMMUNICATION	24.40	6.95	1.3300	2.29	0.337	158.0	228.6	158.1	925	80	72	2,058	2,210
Telco	TELE 1.5	Unknown, COMMUNICATION	22.76	7.05	1.5000	2.70	0.900	157.7	48.1	157.8	2,000	236	127	2,094	2,457

Telco	TELE 1.5	Unknown,	22.76	7.05	1.5000	2.70	0.900	158.0	228.6	158.1	2,000	161	127	2,098	2,386	
		COMMUNICATION														
												Totals:	594	398	8,304	9,296

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	37.17	0.00	320.0	320.0	11.00	4.75	11.50	26	99	125	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.40	0.00	318.4	228.4	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.76	0.00	318.4	228.4	5.00	3.00	0.00	6	0	6	
										Totals:	38	99	136

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	26.17	33.94	10.73	17.37	7.32	11.79	1.60e+6	60.00	57.00	37.71	22,167	221.35	5.00

Pole Num:	417W - 21661-15	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.21	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.05	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.984130 Deg	Longitude:	-84.413577 Deg	Elevation:	910.624535115		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.7	0.0
Groundline	41.7	0.0
Vertical	18.6	25.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,498	138.4
Groundline	37,498	138.4
GL Allowable	91,255	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 138.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	658	53.5	24,890	66.4	27.3	1,847	1,423	13	1,860	27.3
Comms	359	29.2	8,449	22.5	9.3	627	635	6	633	9.3
Pole	211	17.1	4,022	10.7	4.4	298	2,185	20	318	4.7
Insulators	3	0.2	137	0.4	0.2	10	40	0	11	0.2
Pole Load	1,231	100.0	37,498	100.0	41.1	2,782	4,283	39	2,821	41.5
Pole Reserve Capacity			53,757		58.9	4,018			3,979	58.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 138.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	661	53.7	25,016	66.7	27.4	1,856	1,444	13	1,869	27.5
Unknown, COMMUNICATION	359	29.2	8,460	22.6	9.3	628	654	6	634	9.3
Pole	211	17.1	4,022	10.7	4.4	298	2,185	20	318	4.7
Totals:	1,231	100.0	37,498	100.0	41.1	2,782	4,283	39	2,821	41.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.33	15.19	0.5630	0.32	0.291	158.0	48.6	158.0	5,010	755	25	1,829	2,609
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.33	15.19	0.5630	0.24	0.291	136.2	228.0	136.2	5,010	1,203	22	1,576	2,801
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	11.19	1.1080	1.99	1.093	158.0	48.6	158.0	3,200	478	70	2,742	3,290
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	19.19	1.1080	1.99	1.093	158.0	48.6	158.0	3,200	478	70	2,742	3,290
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	11.19	1.1080	1.63	1.093	136.2	228.0	136.2	3,200	762	61	2,363	3,186
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	19.19	1.1080	1.63	1.093	136.2	228.0	136.2	3,200	762	61	2,363	3,186
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	15.19	1.1080	1.99	1.093	158.0	48.6	158.0	3,200	474	71	2,717	3,261
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	15.19	1.1080	1.63	1.093	136.2	228.0	136.2	3,200	755	61	2,342	3,158
Totals:											5,667	440	18,674	24,781	

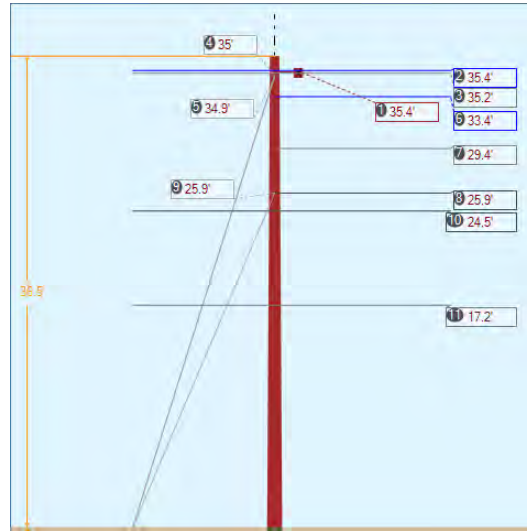
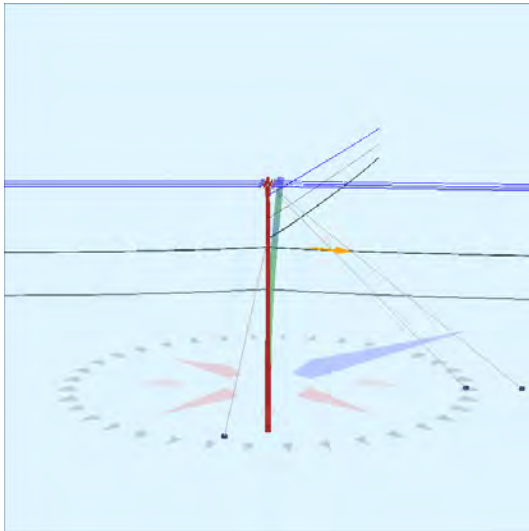
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.19	7.02	1.3300	2.29	0.337	158.0	48.6	158.1	925	87	73	1,956	2,116
CATV	CATV 1.0	Unknown, COMMUNICATION	23.19	7.02	1.3300	1.91	0.337	136.2	228.0	136.2	925	138	63	1,686	1,887
Telco	TELE 1.5	Unknown, COMMUNICATION	21.65	7.12	1.5000	2.70	0.900	158.0	48.6	158.1	2,000	175	129	1,996	2,299

Telco	TELE 1.5	Unknown,	21.65	7.12	1.5000	2.23	0.900	136.2	228.0	136.2	2,000	279	111	1,720	2,110
		COMMUNICATION													
											Totals:	678	375	7,359	8,412

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	37.33	0.00	140.0	140.0	11.00	4.75	11.50	26	99	126	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.19	0.00	138.3	48.3	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.65	0.00	138.3	48.3	5.00	3.00	0.00	6	0	6	
										Totals:	38	99	137

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.81	33.88	10.76	17.00	7.32	11.80	1.60e+6	60.00	57.00	37.79	23,008	230.28	5.38

Pole Num:	418W - 21661-14	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.48	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.58	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.983904 Deg	Longitude:	-84.413769 Deg	Elevation:	916.048153548307		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	22.8	73.4
Groundline	22.8	73.4
Vertical	3.3	256.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,203	73.4
Groundline	19,203	73.4
GL Allowable	87,799	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	44.0	48.0		0.0	73.4	0.2	250.0
? EHS 3/8 (Down)			35.0	0.0	73.4	0.4	250.0
? Single Helix Anchor	34.4	48.0		0.0	73.4	0.2	250.0
? EHS 3/8 (Down)			34.9	0.0	73.4	0.4	250.0
? Single Helix Anchor	29.9	148.0		11.8	73.4	20.7	320.0
? EHS 1/4 (Down)			25.9	39.3	73.4	76.0	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 46.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	469	67.8	14,050	73.2	16.0	1,124	853	8	1,132	16.6
Comms	291	42.0	7,340	38.2	8.4	587	774	7	594	8.7
GuyBraces	-337	-48.8	-8,439	-44.0	-9.6	-675	2,367	22	-653	-9.6
Pole	181	26.1	3,216	16.8	3.7	257	2,077	20	277	4.1
Crossarms	61	8.8	2,089	10.9	2.4	167	190	2	169	2.5
Insulators	28	4.0	948	4.9	1.1	76	116	1	77	1.1
Pole Load	691	100.0	19,203	100.0	21.9	1,536	6,376	60	1,596	23.5
Pole Reserve Capacity			68,596		78.1	5,264			5,204	76.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 46.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	498	72.1	15,063	78.4	17.2	1,205	973	9	1,214	17.9
Unknown, COMMUNICATION	-49	-7.0	-1,165	-6.1	-1.3	-93	3,137	29	-64	-0.9
Pole	181	26.1	3,216	16.8	3.7	257	2,077	20	277	4.1
<Undefined>	61	8.8	2,089	10.9	2.4	167	190	2	169	2.5
Totals:	691	100.0	19,203	100.0	21.9	1,536	6,376	60	1,596	23.5

Detailed Load Components:

Power		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.39	18.23	0.7200	0.30	0.462	135.8	49.8	135.8	6,210	285,277	31	-37	285,271
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.39	48.78	0.7200	0.30	0.462	135.8	49.8	135.8	6,210	285,277	10	-37	285,251
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.39	48.32	0.7200	0.30	0.462	135.8	49.8	135.8	6,210	285,277	13	-37	285,253
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.39	18.23	0.7200	0.51	0.462	177.8	227.5	177.8	6,210	-285,669	-40	-14	-285,722
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.39	48.78	0.7200	0.51	0.462	177.8	227.5	177.8	6,210	-285,669	-16	-14	-285,698
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	35.39	48.32	0.7200	0.51	0.462	177.8	227.5	177.8	6,210	-285,669	-14	-14	-285,696
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.19	6.24	0.3980	0.26	0.145	135.8	49.8	135.8	2,128	97,204	-1	-27	97,177
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.19	6.24	0.3980	0.44	0.145	177.8	227.5	177.8	2,128	-97,338	-1	-10	-97,349
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.37	16.60	0.3250	0.67	0.107	123.8	328.1	123.8	884	7,583	2	940	8,526
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	29.35	6.58	0.3250	0.67	0.107	123.8	328.1	123.8	884	6,670	4	827	7,501
Totals:											12,947	-13	1,578	14,512	

Comm		Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
CATV	CATV 1.0	Unknown, COMMUNICATION	25.90	6.79	1.3300	1.70	0.337	123.8	328.1	123.8	925	6,159	11	1,619	7,789
CATV	CATV 1.0	Unknown, COMMUNICATION	24.50	6.87	1.3300	1.87	0.337	135.8	49.8	135.8	925	29,421	-2	-38	29,380
CATV	CATV 1.0	Unknown, COMMUNICATION	24.50	6.87	1.3300	2.63	0.337	177.8	227.5	177.8	925	-29,461	-3	-14	-29,478
Telco	TELE 1.5	Unknown, COMMUNICATION	17.22	7.30	1.5000	2.21	0.900	135.8	49.8	135.8	2,000	44,708	-4	-30	44,675
Telco	TELE 1.5	Unknown, COMMUNICATION	17.22	7.30	1.5000	3.14	0.900	177.8	227.5	177.9	2,000	-44,770	-5	-11	-44,786
Totals:											6,058	-3	1,526	7,581	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Normal	Crossarm	35.39	5.48	48.7	48.7	50.00	4.50	3.50	96.00	0	2,158	2,158
Totals:										0	2,158	2,158

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.39	0.00	48.7	1.1	3.00	3.80	12.75	17	149	166
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.39	45.00	131.7	1.1	3.00	3.80	12.75	16	149	165
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.39	-45.00	325.6	1.1	3.00	3.80	12.75	19	149	168
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.39	0.00	228.7	178.9	3.00	3.80	12.75	-17	149	132
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.39	45.00	145.6	178.9	3.00	3.80	12.75	-19	149	130
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	35.39	-45.00	311.7	178.9	3.00	3.80	12.75	-16	149	133
Bolt	Single Bolt	KU, UTILITY	35.19	0.00	138.7	138.7	5.00	3.00	0.00	0	0	0
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	33.37	0.00	328.1	328.1	3.00	3.80	12.75	2	70	72
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.35	0.00	328.1	328.1	2.00	3.00	3.19	0	12	13
Bolt	Single Bolt	Unknown, COMMUNICATION	25.90	0.00	328.1	418.1	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	24.50	0.00	138.7	48.7	5.00	3.00	0.00	0	0	0
Bolt	Three Bolt	Unknown, COMMUNICATION	17.22	0.00	138.7	48.7	5.00	3.00	0.00	0	0	0
Totals:										2	976	979

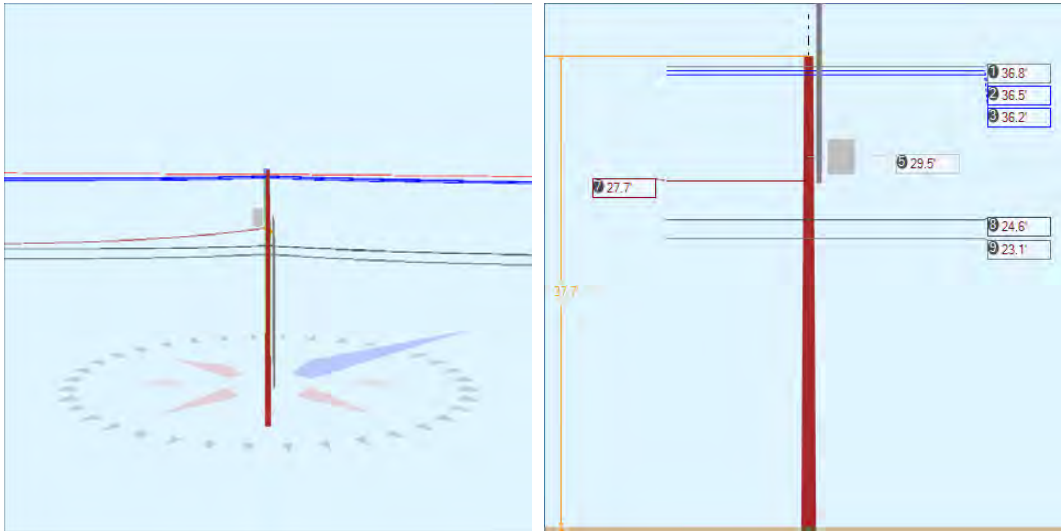
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	35.04	0.00	44.00	0.375	75.00	48.0	38.4	0.273	54.51	0.00
EHS 3/8	Down	KU, UTILITY	34.93	0.00	34.38	0.375	75.00	48.0	45.3	0.273	47.29	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	25.90	0.00	29.92	0.25	75.00	148.0	40.8	0.121	37.81	1.26

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	52	47	0	0	0	34	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	50	45	0	0	0	34	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,549	4,135	2,354	1,537	1,783	-349	-8,785
Totals:										1,537	1,783	-349	-8,717

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	44.00	48.0	20,000	1.00	20,000	47	0	0.2
Single Helix Anchor		18.00	34.38	48.0	20,000	1.00	20,000	45	0	0.2
Single Helix Anchor		18.00	29.92	148.0	20,000	1.00	20,000	4,135	2,354	20.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.59	33.75	10.66	11.92	7.32	11.65	1.60e+6	60.00	57.00	36.52	195,400	1932.22	30.30

Pole Num:	419W - 21661-13	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.33	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.01	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.983540 Deg	Longitude:	-84.414451 Deg	Elevation:	913.306075178048		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	52.7	0.0
Groundline	52.7	0.0
Vertical	25.4	26.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	47,277	311.3
Groundline	47,277	311.3
GL Allowable	90,937	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 311.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	801	50.6	29,188	61.7	32.1	2,176	1,703	16	2,192	32.2
Comms	406	25.6	10,097	21.4	11.1	753	730	7	760	11.2
PowerEquipments	36	2.3	1,339	2.8	1.5	100	636	6	106	1.6
Pole	209	13.2	3,969	8.4	4.4	296	2,175	20	316	4.6
Risers	129	8.2	2,535	5.4	2.8	189	112	1	190	2.8
Insulators	3	0.2	148	0.3	0.2	11	44	0	11	0.2
Pole Load	1,584	100.0	47,277	100.0	52.0	3,525	5,401	50	3,574	52.6
Pole Reserve Capacity			43,660		48.0	3,275			3,226	47.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 311.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	731	46.2	27,291	57.7	30.0	2,035	1,655	15	2,050	30.1
KU, UTILITY	239	15.1	5,909	12.5	6.5	441	822	8	448	6.6
Unknown, COMMUNICATION	406	25.6	10,108	21.4	11.1	754	749	7	761	11.2
Pole	209	13.2	3,969	8.4	4.4	296	2,175	20	316	4.6
Totals:	1,584	100.0	47,277	100.0	52.0	3,525	5,401	50	3,574	52.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.83	15.21	0.5630	0.41	0.291	177.8	47.5	177.8	5,010	-20,046	28	2,018	-17,999
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.83	15.21	0.5630	0.33	0.291	160.2	228.1	160.2	5,010	21,966	26	1,816	23,808
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	11.21	1.1080	2.35	1.093	177.8	47.5	177.8	3,200	-12,688	79	3,026	-9,583
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	19.21	1.1080	2.35	1.093	177.8	47.5	177.8	3,200	-12,688	79	3,026	-9,583
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	11.21	1.1080	2.03	1.093	160.2	228.1	160.2	3,200	13,903	72	2,722	16,697
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	19.21	1.1080	2.03	1.093	160.2	228.1	160.2	3,200	13,903	72	2,722	16,697

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.17	15.21	1.1080	2.35	1.093	177.8	47.5	177.8	3,200	-12,572	80	2,998	-9,494
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.17	15.21	1.1080	2.03	1.093	160.2	228.1	160.2	3,200	13,776	72	2,698	16,546
Secondary	TRIPLEX 4 AWG	KU, UTILITY	27.70	6.75	0.6800	1.84	0.164	160.2	228.1	160.5	150	495	5	1,516	2,016
Totals:											6,049	512	22,542	29,103	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.58	6.94	1.3300	2.67	0.337	177.8	47.5	177.8	925	-2,470	80	2,319	-71
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.58	6.94	1.3300	2.33	0.337	160.2	228.1	160.3	925	2,706	72	2,087	4,866
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.09	7.02	1.5000	3.16	0.900	177.8	47.5	177.9	2,000	-5,016	142	2,380	-2,494
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	23.09	7.02	1.5000	2.75	0.900	160.2	228.1	160.3	2,000	5,497	128	2,143	7,767
		COMMUNICATION													
Totals:											717	422	8,928	10,068	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	29.54	21.14	235.0	235.0	335.00	34.00	--	22.00	--	266	1,068	1,335
Totals:											266	1,068	1,335	

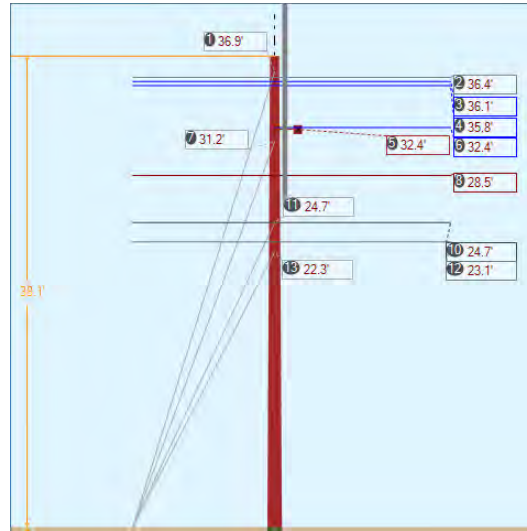
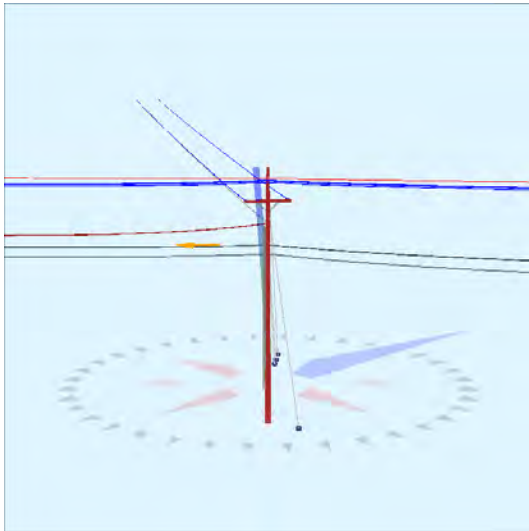
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 74.0°	Riser	KU, UTILITY	29.98	6.09	74.0	74.0	29.98	359.71	4.00	4.00	359.71	-16	1,239	1,223
Riser 42.0°	Riser	KU, UTILITY	29.09	6.09	42.0	42.0	29.09	349.12	4.00	4.00	349.12	0	1,305	1,305
Totals:											-16	2,544	2,528	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	36.83	0.00	315.0	315.0	11.00	4.75	11.50	26	97	124
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.70	0.00	228.1	228.1	2.00	3.00	3.19	0	13	13
Bolt	Three Bolt	Unknown, COMMUNICATION	24.58	0.00	317.8	227.8	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	23.09	0.00	317.8	227.8	5.00	3.00	0.00	6	0	6
Totals:										38	110	148

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	26.61	34.01	10.71	19.24	7.32	11.79	1.60e+6	60.00	57.00	37.68	21,236	212.64	3.94

Pole Num:	421W - 21661-11	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.18	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.982871 Deg	Longitude:	-84.415314 Deg	Elevation:	921.156304363537		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	24.1	0.0
Groundline	24.1	0.0
Vertical	10.3	29.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,573	229.8
Groundline	20,573	229.8
GL Allowable	92,236	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	21.0	320.0	36.9	7.0	221.2	8.2	180.0
? Single Helix Anchor ? EHS 3/8 (Down)	25.5	124.0	31.2	26.9	221.2	27.7	260.0
? Single Helix Anchor ? EHS 1/4 (Down)	17.0	320.0	24.7	1.1	221.2	1.7	180.0
? Single Helix Anchor ? EHS 1/4 (Down)	14.0	320.0	22.3	0.8	221.2	1.5	180.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,430	163.7	40,217	195.5	43.6	3,206	1,475	13	3,219	47.3
Comms	-6	-0.6	-108	-0.5	-0.1	-9	767	7	-2	0.0
GuyBraces	-886	-101.4	-25,619	-124.5	-27.8	-2,042	8,603	78	-1,964	-28.9
Pole	211	24.1	3,739	18.2	4.1	298	2,216	20	318	4.7
Crossarms	4	0.5	124	0.6	0.1	10	190	2	12	0.2
Risers	112	12.9	1,975	9.6	2.1	157	107	1	158	2.3
Insulators	8	0.9	245	1.2	0.3	20	55	1	20	0.3
Pole Load	874	100.0	20,573	100.0	22.3	1,640	13,414	122	1,762	25.9
Pole Reserve Capacity			71,663		77.7	5,160			5,038	74.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	-22	-2.5	-727	-3.5	-0.8	-58	1,219	11	-47	-0.7
KU, UTILITY	675	77.2	17,301	84.1	18.8	1,379	8,524	77	1,457	21.4
Unknown, COMMUNICATION	6	0.7	136	0.7	0.2	11	1,266	12	22	0.3
Pole	211	24.1	3,739	18.2	4.1	298	2,216	20	318	4.7
<Undefined>	4	0.5	124	0.6	0.1	10	190	2	12	0.2
Totals:	874	100.0	20,573	100.0	22.3	1,640	13,414	122	1,762	25.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.42	15.26	0.5630	0.21	0.291	137.9	49.5	137.9	5,010	-237,180	0	-1	-237,181
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.42	15.26	0.5630	0.13	0.291	109.8	226.9	109.8	5,010	236,888	0	-6	236,882
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.08	11.26	1.1080	1.65	1.093	137.9	49.5	137.9	3,200	-150,105	0	-1	-150,107
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.08	19.26	1.1080	1.65	1.093	137.9	49.5	137.9	3,200	-150,105	0	-1	-150,107
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.08	11.26	1.1080	1.23	1.093	109.8	226.9	109.8	3,200	149,920	0	-9	149,912
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.08	19.26	1.1080	1.23	1.093	109.8	226.9	109.8	3,200	149,920	0	-9	149,912
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.75	15.26	1.1080	1.65	1.093	137.9	49.5	137.9	3,200	-148,719	0	-1	-148,720
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.75	15.26	1.1080	1.23	1.093	109.8	226.9	109.8	3,200	148,536	0	-9	148,527
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.37	48.66	0.3250	1.79	0.107	238.7	305.2	238.7	984	10,405	-17	1,790	12,177
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.37	48.66	0.3250	1.79	0.107	238.7	305.2	238.7	984	10,405	21	1,790	12,216
Secondary	TRIPLEX 1/0	KU, UTILITY	28.48	6.73	1.0300	1.41	0.399	109.8	226.9	110.0	250	9,244	2	-7	9,239
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.48	6.73	0.3250	1.79	0.107	238.7	305.2	238.7	984	9,155	2	1,575	10,732
										Totals:	38,364	10	5,108	43,482	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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CATV	CATV 1.0	Unknown, COMMUNICATION	24.67	6.96	1.3300	4.12	0.337	245.7	49.5	245.8	925	-29,664	3	-2	-29,663
CATV	CATV 1.0	Unknown, COMMUNICATION	24.67	6.96	1.3300	1.46	0.337	109.8	226.9	109.8	925	29,628	1	-7	29,622
Telco	TELE 1.5	Unknown, COMMUNICATION	23.11	7.05	1.5000	4.98	0.900	245.7	49.5	245.9	2,000	-60,075	5	-2	-60,071
Telco	TELE 1.5	Unknown, COMMUNICATION	23.11	7.05	1.5000	1.70	0.900	109.8	226.9	109.8	2,000	60,001	2	-7	59,996
Totals:											-110	12	-19	-117	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		32.37	5.75	305.2	305.2	50.00	4.50	3.50	96.00	0	134	134	
Totals:											0	134	134

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 150.0°	KU, UTILITY	28.20	6.09	150.0	150.0	28.20	338.42	4.00	4.00	338.42	6	1,159	1,164
Riser 170.0°	KU, UTILITY	28.20	6.09	170.0	170.0	28.20	338.42	4.00	4.00	338.42	16	954	971
Totals:											22	2,113	2,135

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Power, UTILITY	36.42	0.00	140.0	140.0	11.00	4.75	11.50	0	96	96		
Deadend	Deadend Insulator - 15 kV	32.37	45.00	27.9	0.0	3.00	3.80	12.75	-18	75	57		
Deadend	Deadend Insulator - 15 kV	32.37	-45.00	222.4	0.0	3.00	3.80	12.75	23	75	98		
Spool	Spool Insulator - 25 kV	28.48	0.00	316.9	226.9	2.00	3.00	3.19	0	13	13		
Bolt	Three Bolt	24.67	0.00	318.2	48.2	5.00	3.00	0.00	0	0	0		
Bolt	Three Bolt	23.11	0.00	318.2	48.2	5.00	3.00	0.00	0	0	0		
Totals:											5	260	264

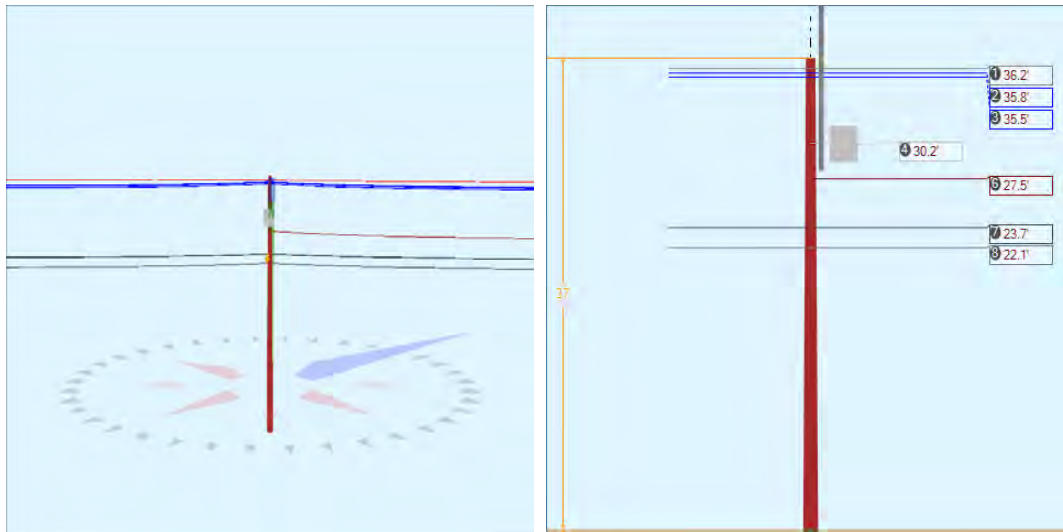
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	36.88	0.00	21.00	0.375	75.00	320.0	60.1	0.273	40.79	0.36
EHS 3/8	Down	KU, UTILITY	31.21	0.00	25.48	0.375	75.00	124.0	50.6	0.273	38.58	1.31
EHS 1/4	Down	Unknown, COMMUNICATION	24.67	0.00	17.00	0.25	75.00	320.0	55.2	0.121	28.25	0.09
EHS 1/4	Down	Unknown, COMMUNICATION	22.28	0.00	14.00	0.25	75.00	320.0	57.7	0.121	24.61	0.05

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,810	1,645	1,396	1,211	695	-3	286
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,088	5,535	5,369	4,149	3,408	-925	-28,248
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	379	345	218	179	124	-1	146
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	326	296	155	131	83	0	118
Totals:										5,669	4,310	-929	-27,698

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	21.00	320.0	20,000	1.00	20,000	1,645	1,396	8.2
Single Helix Anchor			18.00	25.48	124.0	20,000	1.00	20,000	5,535	5,369	27.7
Single Helix Anchor			18.00	17.00	320.0	20,000	1.00	20,000	345	218	1.7
Single Helix Anchor			18.00	14.00	320.0	20,000	1.00	20,000	296	155	1.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.91	34.49	10.61	18.84	7.32	11.84	1.60e+6	60.00	57.00	38.15	129,879	1302.37	9.71

Pole Num:	422W - 21661-10	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.00	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.76	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.982657 Deg	Longitude:	-84.415743 Deg	Elevation:	930.474762707631		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.4	0.0
Groundline	41.4	0.0
Vertical	19.8	25.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	36,349	125.8
Groundline	36,349	125.8
GL Allowable	89,109	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 125.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	666	54.4	22,846	62.9	25.6	1,739	1,209	11	1,751	25.7
Comms	299	24.4	7,132	19.6	8.0	543	518	5	548	8.1
PowerEquipments	36	2.9	2,165	6.0	2.4	165	636	6	171	2.5
Pole	201	16.4	3,761	10.4	4.2	286	2,118	20	306	4.5
Risers	20	1.6	354	1.0	0.4	27	56	1	27	0.4
Insulators	3	0.3	92	0.3	0.1	7	44	0	7	0.1
Pole Load	1,224	100.0	36,349	100.0	40.8	2,767	4,581	43	2,810	41.3
Pole Reserve Capacity			52,760		59.2	4,033			3,990	58.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 125.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	583	47.6	20,557	56.6	23.1	1,565	1,182	11	1,576	23.2
KU, UTILITY	141	11.5	4,888	13.5	5.5	372	743	7	379	5.6
Unknown, COMMUNICATION	299	24.4	7,143	19.7	8.0	544	537	5	549	8.1
Pole	201	16.4	3,761	10.4	4.2	286	2,118	20	306	4.5
Totals:	1,224	100.0	36,349	100.0	40.8	2,767	4,581	43	2,810	41.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.17	15.21	0.5630	0.16	0.291	109.8	46.9	109.8	5,010	34,902	-17	1,208	36,093
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.17	15.21	0.5630	0.22	0.291	130.4	226.2	130.4	5,010	-32,727	-21	1,438	-31,310
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.83	11.21	1.1080	1.23	1.093	109.8	46.9	109.8	3,200	22,087	-49	1,811	23,850
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.83	19.21	1.1080	1.23	1.093	109.8	46.9	109.8	3,200	22,087	-49	1,811	23,850
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.83	11.21	1.1080	1.54	1.093	130.4	226.2	130.4	3,200	-20,711	-58	2,155	-18,613
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.83	19.21	1.1080	1.54	1.093	130.4	226.2	130.4	3,200	-20,711	-58	2,155	-18,613

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.50	15.21	1.1080	1.23	1.093	109.8	46.9	109.8	3,200	21,882	-49	1,794	23,627
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.50	15.21	1.1080	1.54	1.093	130.4	226.2	130.4	3,200	-20,518	-58	2,135	-18,441
Secondary	TRIPLEX 4 AWG	KU, UTILITY	27.53	6.72	0.6800	1.19	0.164	109.8	46.9	109.8	250	1,325	5	1,020	2,351
Totals:											7,616	-352	15,527	22,792	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	23.69	6.95	1.3300	1.47	0.337	109.8	46.9	109.8	925	4,221	49	1,362	5,632
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.69	6.95	1.3300	1.81	0.337	130.4	226.2	130.4	925	-3,958	58	1,621	-2,279
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.11	7.04	1.5000	1.71	0.900	109.8	46.9	109.8	2,000	8,516	87	1,389	9,992
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.11	7.04	1.5000	2.11	0.900	130.4	226.2	130.4	2,000	-7,986	103	1,653	-6,229
		COMMUNICATION													
Totals:											794	297	6,024	7,116	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	30.18	21.06	140.0	140.0	335.00	34.00	--	22.00	--	1,083	1,076	2,160
Totals:											1,083	1,076	2,160	

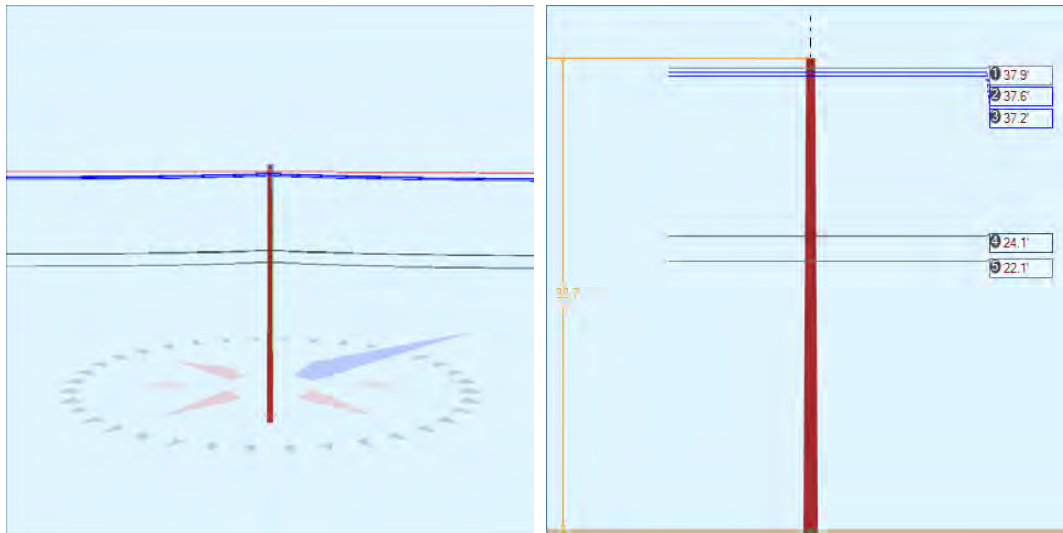
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 300.0°	Riser	KU, UTILITY	29.22	6.09	300.0	300.0	29.22	350.63	4.00	4.00	350.63	-29	382	353
Totals:											-29	382	353	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	36.17	0.00	315.0	315.0	11.00	4.75	11.50	-26	94	68
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.53	0.00	46.9	46.9	2.00	3.00	3.19	0	13	13
Bolt	Three Bolt	Unknown, COMMUNICATION	23.69	0.00	136.5	46.5	5.00	3.00	0.00	5	0	5

Bolt	Three Bolt	Unknown, COMMUNICATION	22.11	0.00	136.5	46.5	5.00	3.00	0.00	5	0	5
Totals:										-15	107	92

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.39	33.85	10.68	17.39	7.32	11.71	1.60e+6	60.00	57.00	37.00	23,113	231.35	5.05

Pole Num:	423W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.26	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.40	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.982382 Deg	Longitude:	-84.416015 Deg	Elevation:	953.497713527005		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	316.3
Groundline	0.0	316.3
Vertical	25.8	316.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	316.4	316.3
Groundline	316.4	316.3
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 316.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	564	51.0	20,859	63.3	22.2	1,504	1,300	12	1,516	22.3
Comms	321	29.0	7,756	23.5	8.3	559	580	5	564	8.3
Pole	217	19.7	4,246	12.9	4.5	306	2,268	20	326	4.8
Insulators	3	0.2	86	0.3	0.1	6	40	0	7	0.1
Pole Load	1,104	100.0	32,946	100.0	35.1	2,375	4,188	38	2,413	35.5
Pole Reserve Capacity			60,942		64.9	4,425			4,387	64.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 316.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	566	51.3	20,933	63.5	22.3	1,509	1,321	12	1,521	22.4
Unknown, COMMUNICATION	321	29.0	7,767	23.6	8.3	560	599	5	565	8.3
Pole	217	19.7	4,246	12.9	4.5	306	2,268	20	326	4.8
Totals:	1,104	100.0	32,946	100.0	35.1	2,375	4,188	38	2,413	35.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.92	15.21	0.5630	0.22	0.291	130.4	46.2	130.4	5,010	707	-21	1,533	2,219
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.92	15.21	0.5630	0.25	0.291	138.4	226.6	138.4	5,010	620	-22	1,627	2,224
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.58	11.21	1.1080	1.54	1.093	130.4	46.2	130.4	3,200	447	-58	2,298	2,687
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.58	19.21	1.1080	1.54	1.093	130.4	46.2	130.4	3,200	447	-58	2,298	2,687
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.58	11.21	1.1080	1.67	1.093	138.4	226.6	138.4	3,200	392	-62	2,439	2,770
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.58	19.21	1.1080	1.67	1.093	138.4	226.6	138.4	3,200	392	-62	2,439	2,770
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.25	15.21	1.1080	1.54	1.093	130.4	46.2	130.4	3,200	443	-59	2,278	2,663
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.25	15.21	1.1080	1.67	1.093	138.4	226.6	138.4	3,200	389	-62	2,418	2,744
Totals:											3,838	-404	17,332	20,765	

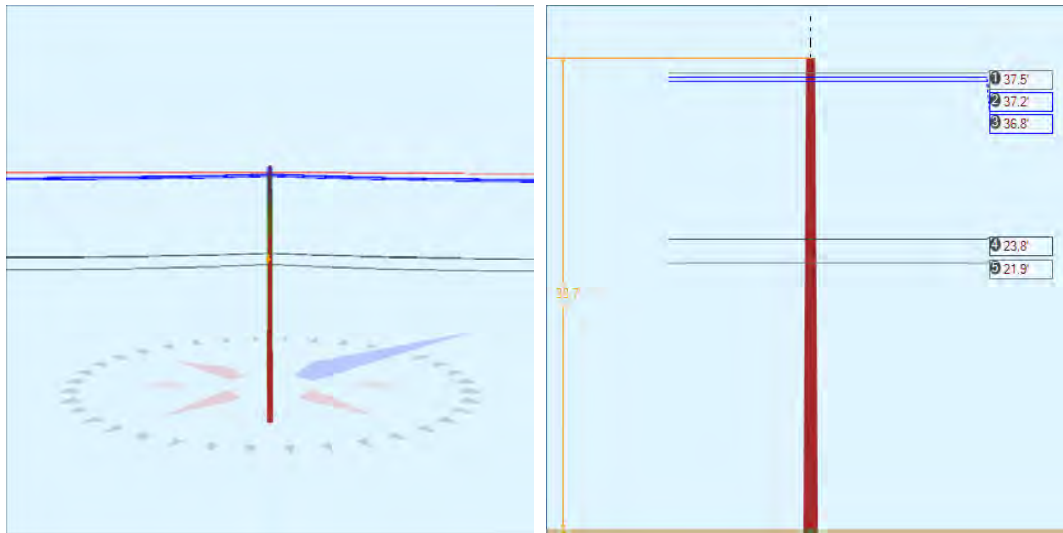
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	24.09	7.03	1.3300	1.81	0.337	130.4	46.2	130.4	925	83	60	1,676	1,819
CATV	CATV 1.0	Unknown, COMMUNICATION	24.09	7.03	1.3300	1.94	0.337	138.4	226.6	138.4	925	73	64	1,780	1,917
Telco	TELE 1.5	Unknown, COMMUNICATION	22.05	7.15	1.5000	2.11	0.900	130.4	46.2	130.4	2,000	164	107	1,677	1,947

Telco	TELE 1.5	Unknown,	22.05	7.15	1.5000	2.28	0.900	138.4	226.6	138.5	2,000	144	113	1,781	2,037
		COMMUNICATION													
											Totals:	463	343	6,914	7,721

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	37.92	0.00	135.0	135.0	11.00	4.75	11.50	-26	101	74	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.09	0.00	316.4	226.4	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.05	0.00	316.4	226.4	5.00	3.00	0.00	6	0	6	
										Totals:	-15	101	85

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.76	33.84	10.87	16.85	7.32	11.91	1.60e+6	60.00	57.00	38.74	24,113	240.71	5.75

Pole Num:	424W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.26	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.40	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.982173 Deg	Longitude:	-84.416384 Deg	Elevation:	949.708165073199		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.2	0.0
Groundline	38.2	0.0
Vertical	18.0	25.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	35,317	136.4
Groundline	35,317	136.4
GL Allowable	93,881	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 136.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	620	52.3	22,695	64.3	24.2	1,637	1,387	12	1,649	24.3
Comms	346	29.2	8,292	23.5	8.8	598	619	6	604	8.9
Pole	217	18.3	4,244	12.0	4.5	306	2,268	20	326	4.8
Insulators	3	0.2	85	0.2	0.1	6	40	0	6	0.1
Pole Load	1,186	100.0	35,317	100.0	37.6	2,547	4,314	39	2,586	38.0
Pole Reserve Capacity			58,564		62.4	4,253			4,214	62.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 136.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	623	52.5	22,769	64.5	24.3	1,642	1,408	13	1,655	24.3
Unknown, COMMUNICATION	346	29.2	8,304	23.5	8.8	599	638	6	605	8.9
Pole	217	18.3	4,244	12.0	4.5	306	2,268	20	326	4.8
Totals:	1,186	100.0	35,317	100.0	37.6	2,547	4,314	39	2,586	38.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.50	15.23	0.5630	0.25	0.291	138.4	46.6	138.4	5,010	792	-22	1,609	2,379
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.50	15.23	0.5630	0.28	0.291	148.4	226.1	148.4	5,010	847	-24	1,725	2,549
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	11.23	1.1080	1.67	1.093	138.4	46.6	138.4	3,200	502	-62	2,412	2,852
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	19.23	1.1080	1.67	1.093	138.4	46.6	138.4	3,200	502	-62	2,412	2,852
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	11.23	1.1080	1.83	1.093	148.4	226.1	148.4	3,200	536	-67	2,587	3,056
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	19.23	1.1080	1.83	1.093	148.4	226.1	148.4	3,200	536	-67	2,587	3,056
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	15.23	1.1080	1.67	1.093	138.4	46.6	138.4	3,200	497	-63	2,391	2,825
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	15.23	1.1080	1.83	1.093	148.4	226.1	148.4	3,200	532	-67	2,564	3,028
Totals:											4,744	-434	18,287	22,597	

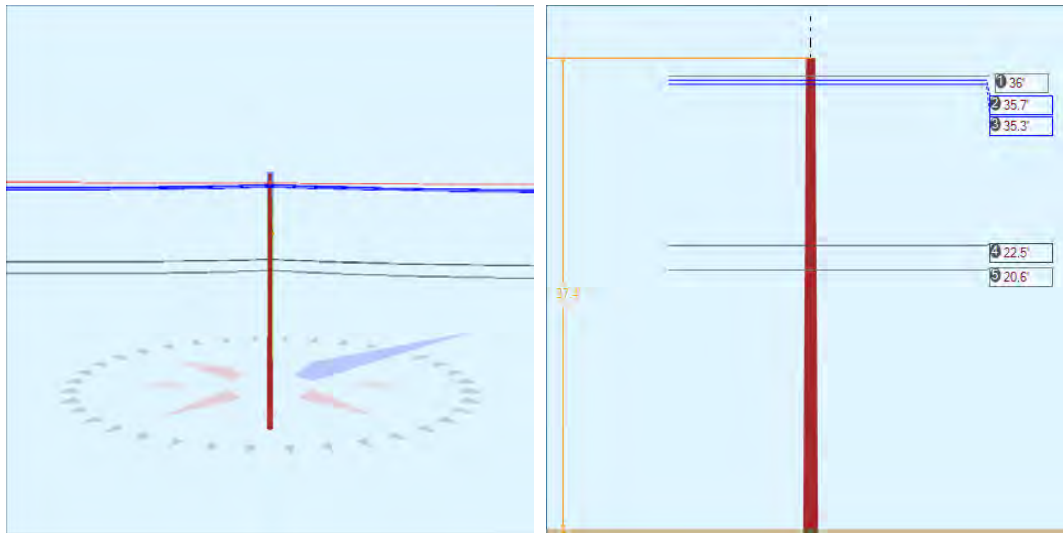
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.85	7.04	1.3300	1.94	0.337	138.4	46.6	138.4	925	93	64	1,762	1,919
CATV	CATV 1.0	Unknown, COMMUNICATION	23.85	7.04	1.3300	2.12	0.337	148.4	226.1	148.5	925	99	69	1,889	2,057
Telco	TELE 1.5	Unknown, COMMUNICATION	21.89	7.16	1.5000	2.28	0.900	138.4	46.6	138.5	2,000	185	113	1,768	2,066

Telco	TELE 1.5	Unknown,	21.89	7.16	1.5000	2.49	0.900	148.4	226.1	148.5	2,000	197	121	1,896	2,214
		COMMUNICATION													
											Totals:	575	367	7,315	8,256

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	37.50	0.00	315.0	315.0	11.00	4.75	11.50	-27	100	73	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.85	0.00	136.3	46.3	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.89	0.00	136.3	46.3	5.00	3.00	0.00	6	0	6	
										Totals:	-15	100	84

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.80	33.85	10.87	17.10	7.32	11.91	1.60e+6	60.00	57.00	38.74	24,010	239.67	5.56

Pole Num:	425W - 21661-7	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.58	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.981795 Deg	Longitude:	-84.416827 Deg	Elevation:	924.929926304947		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	50.1	0.0
Groundline	50.1	0.0
Vertical	17.0	24.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	44,662	316.9
Groundline	44,662	316.9
GL Allowable	90,247	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 316.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	897	59.5	31,672	70.9	35.1	2,379	1,378	13	2,392	35.2
Comms	400	26.5	8,977	20.1	10.0	674	615	6	680	10.0
Pole	208	13.8	3,933	8.8	4.4	295	2,154	20	315	4.6
Insulators	3	0.2	81	0.2	0.1	6	40	0	6	0.1
Pole Load	1,508	100.0	44,662	100.0	49.5	3,355	4,187	39	3,393	49.9
Pole Reserve Capacity			45,585		50.5	3,446			3,407	50.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 316.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	900	59.7	31,741	71.1	35.2	2,384	1,399	13	2,397	35.2
Unknown, COMMUNICATION	400	26.5	8,988	20.1	10.0	675	634	6	681	10.0
Pole	208	13.8	3,933	8.8	4.4	295	2,154	20	315	4.6
Totals:	1,508	100.0	44,662	100.0	49.5	3,355	4,187	39	3,393	49.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.00	15.24	0.5630	0.28	0.291	148.4	46.1	148.4	5,010	2,652	-24	1,656	4,284
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.00	15.24	0.5630	0.24	0.291	136.6	227.7	136.6	5,010	2,384	-22	1,524	3,887
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.67	11.24	1.1080	1.83	1.093	148.4	46.1	148.4	3,200	1,678	-67	2,482	4,093
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.67	19.24	1.1080	1.83	1.093	148.4	46.1	148.4	3,200	1,678	-67	2,482	4,093
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.67	11.24	1.1080	1.64	1.093	136.6	227.7	136.6	3,200	1,509	-62	2,285	3,732
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.67	19.24	1.1080	1.64	1.093	136.6	227.7	136.6	3,200	1,509	-62	2,285	3,732
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.33	15.24	1.1080	1.83	1.093	148.4	46.1	148.4	3,200	1,663	-67	2,459	4,054
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.33	15.24	1.1080	1.64	1.093	136.6	227.7	136.6	3,200	1,495	-62	2,263	3,696
Totals:											14,568	-433	17,435	31,571	

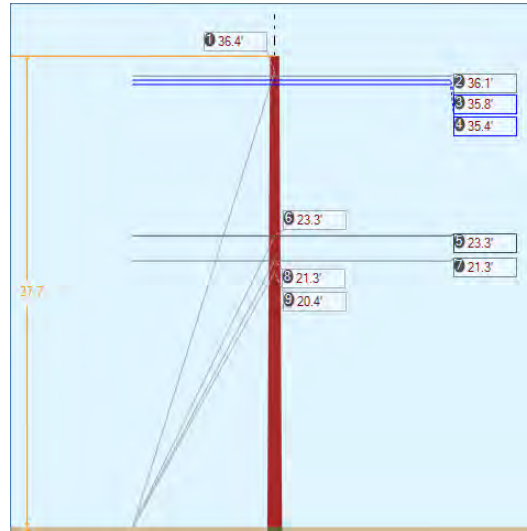
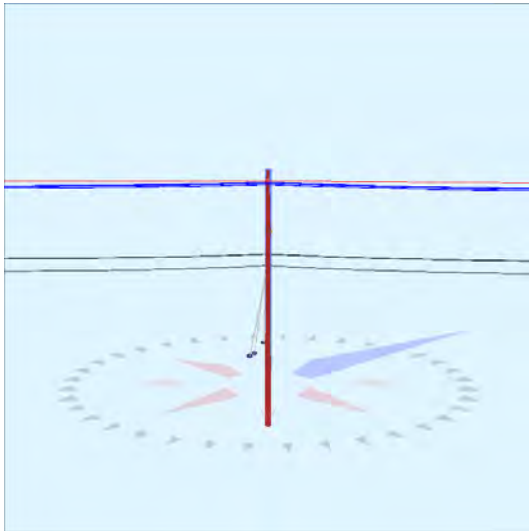
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	22.53	7.04	1.3300	2.12	0.337	148.4	46.1	148.5	925	307	68	1,785	2,160
CATV	CATV 1.0	Unknown, COMMUNICATION	22.53	7.04	1.3300	1.91	0.337	136.6	227.7	136.6	925	276	63	1,643	1,981
Telco	TELE 1.5	Unknown, COMMUNICATION	20.60	7.16	1.5000	2.49	0.900	148.4	46.1	148.5	2,000	606	121	1,783	2,510

Telco	TELE 1.5	Unknown,	20.60	7.16	1.5000	2.24	0.900	136.6	227.7	136.6	2,000	545	112	1,641	2,297
COMMUNICATION												Totals:			
												1,732	364	6,852	8,949

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	36.00	0.00	135.0	135.0	11.00	4.75	11.50	-27	96	69
Bolt	Three Bolt	Unknown, COMMUNICATION	22.53	0.00	320.4	230.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.60	0.00	320.4	230.4	5.00	3.00	0.00	6	0	6
Totals:										-15	96	80

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.94	33.77	10.75	16.55	7.32	11.76	1.60e+6	60.00	57.00	37.42	24,584	246.30	5.88

Pole Num:	426W - 21661-6	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.31	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.01	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.981627 Deg	Longitude:	-84.417266 Deg	Elevation:	917.812355717599		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	9.6	0.0
Groundline	9.6	0.0
Vertical	2.2	25.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	8,183	317.5
Groundline	8,183	317.5
GL Allowable	90,967	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	30.4	313.3		0.0	317.0	7.5	140.0
? EHS 3/8 (Down)			36.5	0.0	317.0	11.9	140.0
? Single Helix Anchor	22.1	308.3		0.0	317.0	1.8	140.0
? EHS 1/4 (Down)			23.3	0.0	317.0	6.5	140.0
? Single Helix Anchor	20.0	305.0		0.0	317.0	2.1	115.0
? EHS 1/4 (Down)			21.3	0.0	317.0	4.1	110.0
? EHS 1/4 (Down)			20.4	0.0	317.0	3.8	120.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 317.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-4	-0.9	-613	-7.5	-0.7	-46	1,390	13	-33	-0.5
Comms	221	50.9	4,615	56.4	5.1	344	620	6	349	5.1
GuyBraces	5	1.2	128	1.6	0.1	10	31	0	10	0.1
Pole	210	48.2	3,994	48.8	4.4	298	2,176	20	317	4.7
Insulators	3	0.6	58	0.7	0.1	4	40	0	5	0.1
Pole Load	435	100.0	8,183	100.0	9.0	610	4,258	39	649	9.5
Pole Reserve Capacity			82,784		91.0	6,190			6,151	90.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 317.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	-1	-0.3	-543	-6.6	-0.6	-41	1,411	13	-28	-0.4
Unknown, COMMUNICATION	225	51.8	4,690	57.3	5.2	349	656	6	355	5.2
KU, UTILITY	1	0.3	42	0.5	0.1	3	15	0	3	0.0
Pole	210	48.2	3,994	48.8	4.4	298	2,176	20	317	4.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	435	100.0	8,183	100.0	9.0	610	4,258	39	649	9.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.08	15.26	0.5630	0.24	0.291	136.6	47.7	136.6	5,010	-1,009	-22	1,528	497
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.08	15.26	0.5630	0.29	0.291	150.8	226.2	150.8	5,010	-5,144	-24	1,686	-3,482
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.75	11.26	1.1080	1.64	1.093	136.6	47.7	136.6	3,200	-638	-62	2,290	1,590
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.75	19.26	1.1080	1.64	1.093	136.6	47.7	136.6	3,200	-638	-62	2,290	1,590
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.75	11.26	1.1080	1.87	1.093	150.8	226.2	150.8	3,200	-3,255	-68	2,528	-796
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.75	19.26	1.1080	1.87	1.093	150.8	226.2	150.8	3,200	-3,255	-68	2,528	-796
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.42	15.26	1.1080	1.64	1.093	136.6	47.7	136.6	3,200	-632	-62	2,269	1,574
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.42	15.26	1.1080	1.87	1.093	150.8	226.2	150.8	3,200	-3,225	-69	2,504	-789
Totals:											-17,796	-438	17,623	-610	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.32	7.01	1.3300	1.91	0.337	136.6	47.7	136.6	925	-120	-63	1,700	1,517
CATV	CATV 1.0	Unknown, COMMUNICATION	23.32	7.01	1.3300	2.16	0.337	150.8	226.2	150.8	925	-614	-69	1,876	1,193

Telco	TELE 1.5	Unknown, COMMUNICATION	21.32	7.13	1.5000	2.24	0.900	136.6	47.7	136.6	2,000	-238	-111	1,699	1,350
Telco	TELE 1.5	Unknown, COMMUNICATION	21.32	7.13	1.5000	2.54	0.900	150.8	226.2	150.8	2,000	-1,213	-123	1,874	539
											Totals:	-2,185	-366	7,150	4,599

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Suspension	Suspension 11.50"	Power, UTILITY	36.08	0.00	137.0	137.0	11.00	4.75	11.50	-27	96	69		
Bolt	Three Bolt	Unknown, COMMUNICATION	23.32	0.00	140.5	50.5	5.00	3.00	0.00	-6	0	-6		
Bolt	Three Bolt	Unknown, COMMUNICATION	21.32	0.00	140.5	50.5	5.00	3.00	0.00	-6	0	-6		
											Totals:	-38	96	58

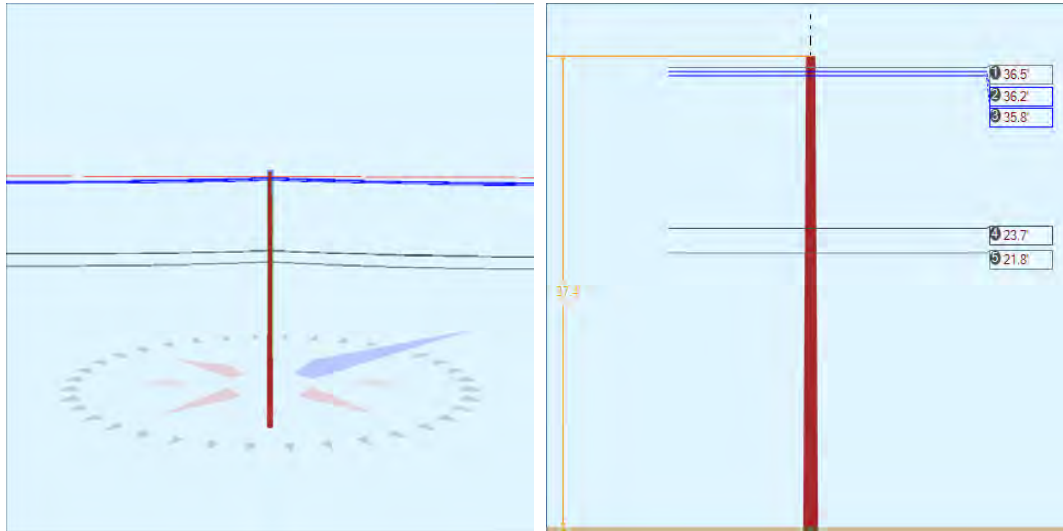
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	36.45	0.00	30.38	0.375	75.00	313.3	50.0	0.273	45.75	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	23.32	0.00	22.09	0.25	75.00	308.3	46.4	0.121	30.36	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	21.32	0.00	20.03	0.25	75.00	305.0	46.6	0.121	27.49	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	20.42	0.00	20.03	0.25	75.00	305.0	45.4	0.121	26.84	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)		
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,650	1,500	0	0	0	42		
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	388	353	0	0	0	29		
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	243	221	0	0	0	29		
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	228	207	0	0	0	28		
										Totals:	0	0	0	128

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	30.38	313.3	20,000	1.00	20,000	1,500	0	7.5
Single Helix Anchor		18.00	22.09	308.3	20,000	1.00	20,000	353	0	1.8
Single Helix Anchor		18.00	20.03	305.0	20,000	1.00	20,000	428	0	2.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.14	33.79	10.78	9.96	7.32	11.79	1.60e+6	60.00	57.00	37.69	195,249	1935.31	45.45

Pole Num:	427W - 21661-5	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.60	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.981359 Deg	Longitude:	-84.417650 Deg	Elevation:	927.619555906831		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	39.0	0.0
Groundline	39.0	0.0
Vertical	18.0	25.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,621	316.4
Groundline	34,621	316.4
GL Allowable	90,199	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 316.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	602	52.0	22,300	64.4	24.7	1,674	1,408	13	1,687	24.8
Comms	346	29.8	8,252	23.8	9.2	619	629	6	625	9.2
Pole	208	18.0	3,934	11.4	4.4	295	2,152	20	315	4.6
Insulators	3	0.2	135	0.4	0.2	10	40	0	11	0.2
Pole Load	1,158	100.0	34,621	100.0	38.4	2,598	4,229	39	2,637	38.8
Pole Reserve Capacity			55,578		61.6	4,202			4,163	61.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 316.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	605	52.2	22,424	64.8	24.9	1,683	1,429	13	1,696	24.9
Unknown, COMMUNICATION	346	29.8	8,263	23.9	9.2	620	648	6	626	9.2
Pole	208	18.0	3,934	11.4	4.4	295	2,152	20	315	4.6
Totals:	1,158	100.0	34,621	100.0	38.4	2,598	4,229	39	2,637	38.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.50	15.21	0.5630	0.29	0.291	150.8	46.2	150.8	5,010	750	24	1,707	2,480
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	36.50	15.21	0.5630	0.25	0.291	140.4	226.6	140.4	5,010	527	22	1,589	2,138
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.17	11.21	1.1080	1.87	1.093	150.8	46.2	150.8	3,200	475	67	2,558	3,100
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.17	19.21	1.1080	1.87	1.093	150.8	46.2	150.8	3,200	475	67	2,558	3,100
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.17	11.21	1.1080	1.70	1.093	140.4	226.6	140.4	3,200	333	63	2,381	2,778
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.17	19.21	1.1080	1.70	1.093	140.4	226.6	140.4	3,200	333	63	2,381	2,778
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.83	15.21	1.1080	1.87	1.093	150.8	46.2	150.8	3,200	470	68	2,534	3,072
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	35.83	15.21	1.1080	1.70	1.093	140.4	226.6	140.4	3,200	330	63	2,360	2,753
Totals:											3,693	438	18,068	22,199	

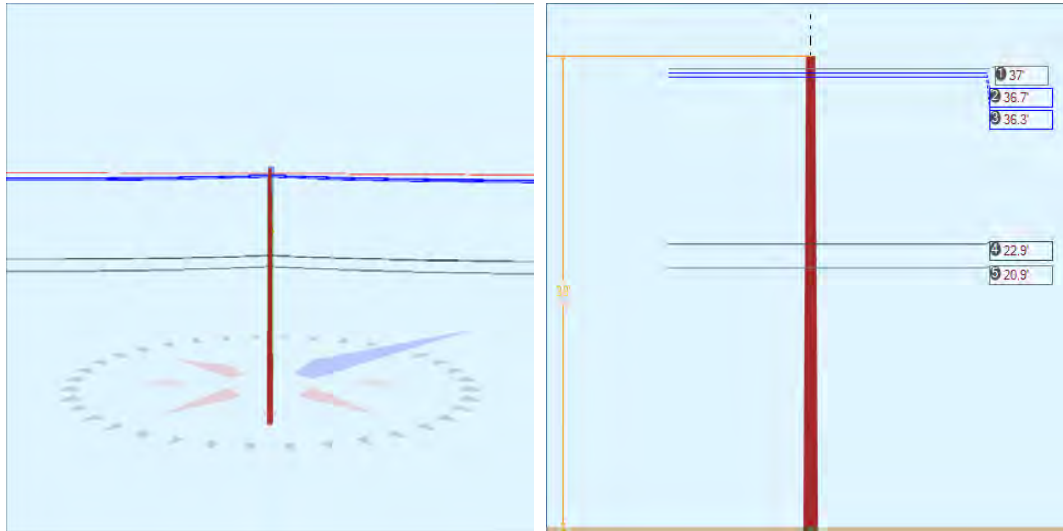
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	23.74	6.97	1.3300	2.16	0.337	150.8	46.2	150.8	925	90	69	1,910	2,069
CATV	CATV 1.0	Unknown, COMMUNICATION	23.74	6.97	1.3300	1.98	0.337	140.4	226.6	140.4	925	63	64	1,779	1,906
Telco	TELE 1.5	Unknown, COMMUNICATION	21.77	7.09	1.5000	2.54	0.900	150.8	46.2	150.8	2,000	179	122	1,915	2,216

Telco	TELE 1.5	Unknown,	21.77	7.09	1.5000	2.32	0.900	140.4	226.6	140.5	2,000	125	114	1,783	2,023
		COMMUNICATION													
											Totals:	457	369	7,388	8,214

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	36.50	0.00	320.0	320.0	11.00	4.75	11.50	26	97	123	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.74	0.00	316.4	226.4	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.77	0.00	316.4	226.4	5.00	3.00	0.00	6	0	6	
										Totals:	38	97	134

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.42	33.84	10.73	16.77	7.32	11.75	1.60e+6	60.00	57.00	37.41	23,460	234.94	5.56

Pole Num:	428W - 21661-4	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.96	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.14	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.981065 Deg	Longitude:	-84.417945 Deg	Elevation:	924.597222371972		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	317.0
Groundline	0.0	317.0
Vertical	25.5	317.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	316.8	317.0
Groundline	316.8	317.0
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 316.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	554	50.1	20,831	63.4	22.7	1,533	1,416	13	1,546	22.7
Comms	337	30.5	7,785	23.7	8.5	573	632	6	579	8.5
Pole	212	19.2	4,082	12.4	4.4	300	2,207	20	321	4.7
Insulators	3	0.2	137	0.4	0.2	10	40	0	10	0.2
Pole Load	1,106	100.0	32,835	100.0	35.7	2,417	4,295	39	2,456	36.1
Pole Reserve Capacity			59,111		64.3	4,383			4,344	63.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 316.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	556	50.3	20,957	63.8	22.8	1,543	1,437	13	1,556	22.9
KU, UTILITY	160	14.4	3,808	11.6	4.1	280	240	2	282	4.2
Unknown, COMMUNICATION	178	16.1	3,989	12.2	4.3	294	411	4	297	4.4
Pole	212	19.2	4,082	12.4	4.4	300	2,207	20	321	4.7
Totals:	1,106	100.0	32,835	100.0	35.7	2,417	4,295	39	2,456	36.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.00	15.22	0.5630	0.25	0.291	140.4	46.6	140.4	5,010	622	22	1,611	2,255
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.00	15.22	0.5630	0.30	0.291	152.4	226.8	152.4	5,010	26	24	1,748	1,798
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	11.22	1.1080	1.70	1.093	140.4	46.6	140.4	3,200	393	63	2,414	2,871
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	19.22	1.1080	1.70	1.093	140.4	46.6	140.4	3,200	393	63	2,414	2,871
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	11.22	1.1080	1.90	1.093	152.4	226.8	152.4	3,200	16	68	2,621	2,705
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	19.22	1.1080	1.90	1.093	152.4	226.8	152.4	3,200	16	68	2,621	2,705
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.33	15.22	1.1080	1.70	1.093	140.4	46.6	140.4	3,200	390	63	2,392	2,845
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.33	15.22	1.1080	1.90	1.093	152.4	226.8	152.4	3,200	16	69	2,597	2,682
										Totals:	1,872	441	18,418	20,732	

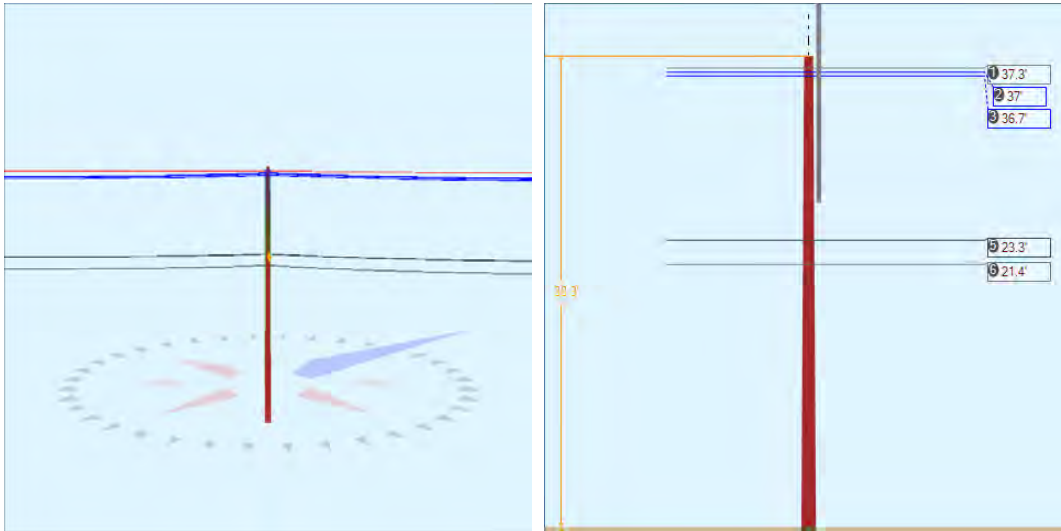
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	KU, UTILITY	22.87	7.06	1.3300	1.98	0.337	140.4	46.6	140.4	925	71	65	1,714	1,850
CATV	CATV 1.0	KU, UTILITY	22.87	7.06	1.3300	2.19	0.337	152.4	226.8	152.4	925	3	71	1,860	1,934
Telco	TELE 1.5	Unknown, COMMUNICATION	20.95	7.17	1.5000	2.32	0.900	140.4	46.6	140.5	2,000	140	115	1,716	1,971

Telco	TELE 1.5	Unknown,	20.95	7.17	1.5000	2.58	0.900	152.4	226.8	152.4	2,000	6	125	1,862	1,992
		COMMUNICATION													
											Totals:	220	376	7,152	7,748

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	37.00	0.00	320.0	320.0	11.00	4.75	11.50	26	98	125	
Bolt	Three Bolt	KU, UTILITY	22.87	0.00	316.7	226.7	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.95	0.00	316.7	226.7	5.00	3.00	0.00	6	0	6	
										Totals:	38	98	136

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.55	33.84	10.80	16.96	7.32	11.83	1.60e+6	60.00	57.00	38.04	23,847	238.61	5.56

Pole Num:	429W - 21661-3	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.70	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.24	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.980854 Deg	Longitude:	-84.418336 Deg	Elevation:	925.020010967697		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	33.2	0.0
Groundline	33.2	0.0
Vertical	17.7	25.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	30,216	136.3
Groundline	30,216	136.3
GL Allowable	92,657	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 136.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	507	48.3	18,402	60.9	19.9	1,344	1,357	12	1,356	19.9
Comms	318	30.3	7,489	24.8	8.1	547	606	5	552	8.1
Pole	214	20.4	4,139	13.7	4.5	302	2,230	20	323	4.7
Risers	7	0.7	102	0.3	0.1	7	54	0	8	0.1
Insulators	3	0.3	84	0.3	0.1	6	40	0	7	0.1
Pole Load	1,049	100.0	30,216	100.0	32.6	2,207	4,286	39	2,246	33.0
Pole Reserve Capacity			62,441		67.4	4,593			4,554	67.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 136.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	509	48.6	18,475	61.1	19.9	1,349	1,378	12	1,362	20.0
Unknown, COMMUNICATION	318	30.3	7,500	24.8	8.1	548	625	6	553	8.1
Pole	214	20.4	4,139	13.7	4.5	302	2,230	20	323	4.7
KU, UTILITY	7	0.7	102	0.3	0.1	7	54	0	8	0.1
Totals:	1,049	100.0	30,216	100.0	32.6	2,207	4,286	39	2,246	33.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.33	15.22	0.5630	0.30	0.291	152.4	46.8	152.4	5,010	1,572	-24	1,762	3,310
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.33	15.22	0.5630	0.21	0.291	128.2	226.7	128.2	5,010	-1,246	-20	1,482	216
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	11.22	1.1080	1.90	1.093	152.4	46.8	152.4	3,200	995	-68	2,641	3,569
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	19.22	1.1080	1.90	1.093	152.4	46.8	152.4	3,200	995	-68	2,641	3,569
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	11.22	1.1080	1.51	1.093	128.2	226.7	128.2	3,200	-789	-57	2,222	1,376
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.00	19.22	1.1080	1.51	1.093	128.2	226.7	128.2	3,200	-789	-57	2,222	1,376
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	15.22	1.1080	1.90	1.093	152.4	46.8	152.4	3,200	986	-69	2,618	3,535

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.67	15.22	1.1080	1.51	1.093	128.2	226.7	128.2	3,200	-782	-58	2,202	1,363
											Totals:	944	-422	17,792	18,314

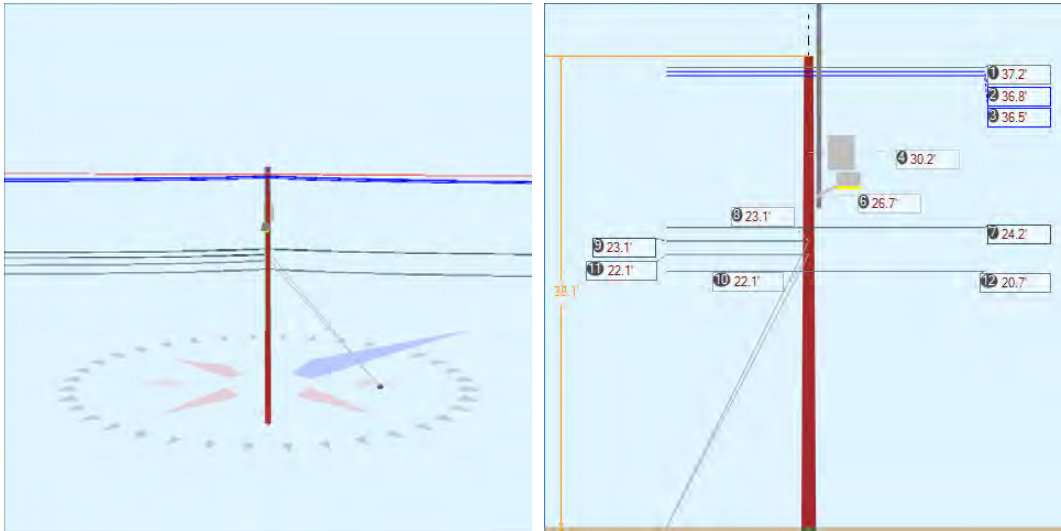
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	23.33	7.05	1.3300	2.19	0.337	152.4	46.8	152.4	925	181	70	1,895	2,147
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.33	7.05	1.3300	1.77	0.337	128.2	226.7	128.2	925	-144	59	1,595	1,510
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.36	7.16	1.5000	2.58	0.900	152.4	46.8	152.4	2,000	359	125	1,896	2,380
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	21.36	7.16	1.5000	2.07	0.900	128.2	226.7	128.2	2,000	-284	105	1,596	1,416
		COMMUNICATION													
											Totals:	112	359	6,981	7,453

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 320.0°	Riser	KU, UTILITY	28.36	6.09	320.0	320.0	28.36	340.37	4.00	4.00	340.37	-28	129	101
											Totals:	-28	129	101

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)			
Suspension	Suspension 11.50"	Power, UTILITY	37.33	0.00	320.0	320.0	11.00	4.75	11.50	-26	99	73		
Bolt	Three Bolt	Unknown, COMMUNICATION	23.33	0.00	136.8	46.8	5.00	3.00	0.00	6	0	6		
Bolt	Three Bolt	Unknown, COMMUNICATION	21.36	0.00	136.8	46.8	5.00	3.00	0.00	6	0	6		
											Totals:	-15	99	84

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.51	33.82	10.83	16.94	7.32	11.86	1.60e+6	60.00	57.00	38.30	24,205	242.15	5.65

Pole Num:	430W - 21661-2	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.91	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.16	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.980651 Deg	Longitude:	-84.418626 Deg	Elevation:	924.960864417188		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.3	0.0 315.6
Groundline	44.3	0.0 315.6
Vertical	5.1	24.2 229.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	39,459	308.0 315.6
Groundline	39,459	308.0 315.6
GL Allowable	92,073	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	19.5	49.0		25.3	315.6	26.9	240.0
? EHS 1/4 (Down)			23.1	42.5	315.6	49.8	240.0
? EHS 1/4 (Down)			22.1	42.1	315.6	49.2	240.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 308.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	631	44.7	22,312	56.5	24.2	1,685	1,332	12	1,697	25.0
Comms	1,105	78.3	23,894	60.6	26.0	1,805	913	8	1,813	26.7
GuyBraces	-610	-43.3	-13,484	-34.2	-14.6	-1,019	5,806	53	-966	-14.2
PowerEquipments	36	2.6	2,135	5.4	2.3	161	636	6	167	2.5
Pole	211	14.9	3,948	10.0	4.3	298	2,211	20	318	4.7
Streetlights	20	1.4	284	0.7	0.3	22	86	1	22	0.3
Risers	16	1.1	309	0.8	0.3	23	52	0	24	0.4
Insulators	3	0.2	61	0.2	0.1	5	59	1	5	0.1
Pole Load	1,411	100.0	39,459	100.0	42.9	2,981	11,095	101	3,081	45.3
Pole Reserve Capacity			52,614		57.1	3,820			3,719	54.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 308.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	634	44.9	22,381	56.7	24.3	1,691	1,353	12	1,703	25.0
Unknown, COMMUNICATION	495	35.1	10,401	26.4	11.3	786	6,756	61	847	12.5
KU, UTILITY	72	5.1	2,729	6.9	3.0	206	774	7	213	3.1
Pole	211	14.9	3,948	10.0	4.3	298	2,211	20	318	4.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,411	100.0	39,459	100.0	42.9	2,981	11,095	101	3,081	45.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	15.22	0.5630	0.21	0.291	128.2	46.7	128.2	5,010	-36,484	-20	1,460	-35,044
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.17	15.22	0.5630	0.28	0.291	147.3	227.2	147.3	5,010	38,571	-23	1,675	40,223
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	11.22	1.1080	1.51	1.093	128.2	46.7	128.2	3,200	-23,094	-57	2,189	-20,962
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	19.22	1.1080	1.51	1.093	128.2	46.7	128.2	3,200	-23,094	-57	2,189	-20,962

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	11.22	1.1080	1.81	1.093	147.3	227.2	147.3	3,200	24,415	-66	2,511	26,861
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.83	19.22	1.1080	1.81	1.093	147.3	227.2	147.3	3,200	24,415	-66	2,511	26,861
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	15.22	1.1080	1.51	1.093	128.2	46.7	128.2	3,200	-22,885	-57	2,169	-20,773
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	36.50	15.22	1.1080	1.81	1.093	147.3	227.2	147.3	3,200	24,194	-66	2,488	26,617
Totals:											6,038	-412	17,193	22,819	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.23	6.98	1.3300	1.77	0.337	128.2	46.7	128.2	925	-4,392	-58	1,639	-2,811
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.23	6.98	1.3300	2.10	0.337	147.3	227.2	147.3	925	4,643	-67	1,880	6,456
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	23.14	7.05	1.3300	2.10	0.337	147.3	227.2	147.3	925	4,434	11	1,796	6,240
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.06	7.11	1.5000	2.47	0.900	147.3	227.2	147.3	2,000	9,138	19	1,870	11,027
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.69	7.19	1.5000	2.07	0.900	128.2	46.7	128.2	2,000	-8,106	-104	1,529	-6,681
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	20.69	7.19	1.5000	2.47	0.900	147.3	227.2	147.3	2,000	8,570	-120	1,754	10,204
		COMMUNICATION													
Totals:											14,287	-318	10,469	24,437	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-15KVA	KU, UTILITY	30.17	21.13	320.0	320.0	335.00	34.00	--	22.00	--	1,096	1,087	2,184
Totals:											1,096	1,087	2,184	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.70	4.33	140.0	140.0	45.00	24.00	20.00	3.00	36.00	-234	525	291
Totals:											-234	525	291	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 330.0°	Riser	KU, UTILITY	27.57	6.09	330.0	330.0	27.57	330.83	4.00	4.00	330.83	25	291	316
Totals:												25	291	316

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	37.17	0.00	135.0	135.0	11.00	4.75	11.50	-26	98	72
Bolt	Three Bolt	Unknown, COMMUNICATION	24.23	0.00	137.0	227.0	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	23.14	0.00	227.2	227.2	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	22.06	0.00	227.2	317.2	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	20.69	0.00	137.0	227.0	5.00	3.00	0.00	-6	0	-6
Totals:										-36	98	62

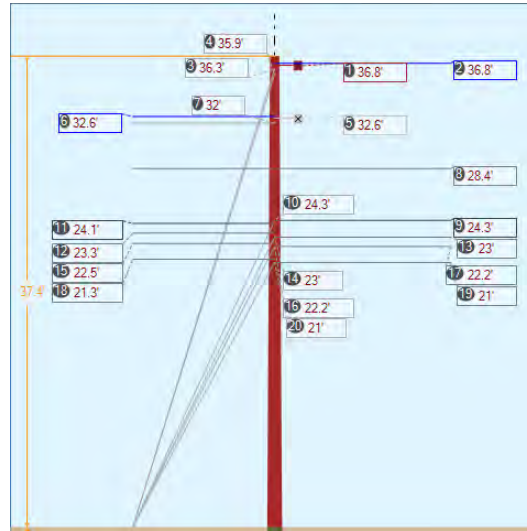
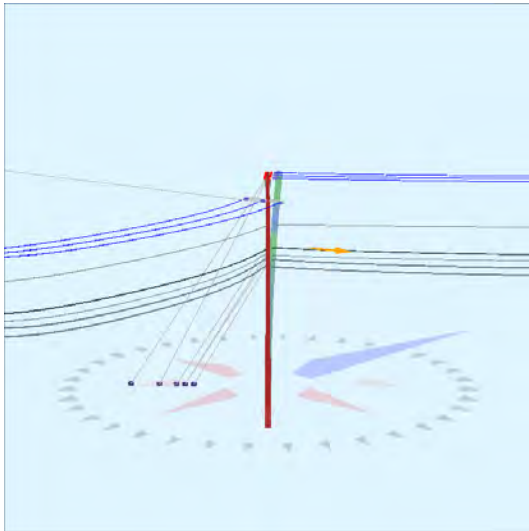
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	23.14	0.00	19.52	0.25	75.00	49.0	49.7	0.121	28.53	1.03
EHS 1/4	Down	Unknown, COMMUNICATION	22.06	0.00	19.52	0.25	75.00	49.0	48.3	0.121	27.70	0.99

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension² (lbs)	Applied Tension³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL³ (ft-lb)	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,982	2,711	2,542	1,938	1,644	-313	-6,989
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,946	2,678	2,522	1,884	1,676	-319	-6,801
Totals:										3,822	3,321	-632	-13,790

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load² (lbs)	Load at Pole MCU³ (lbs)	Max Required Capacity² (%)
Single Helix Anchor		18.00	19.52	49.0	20,000	1.00	20,000	5,389	5,063	26.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	24.20	33.63	10.87	15.51	7.32	11.83	1.60e+6	60.00	57.00	38.09	217,724	2175.52	19.61

Pole Num:	431W - 21661-1	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.64	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.89	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.980331 Deg	Longitude:	-84.419130 Deg	Elevation:	919.260873871837		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.3	74.1
Groundline	15.0	321.2
Vertical	45.1	53.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	5,792	74.1
Groundline	10,677	321.2
GL Allowable	90,068	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	24.0	227.0	36.3	59.6	74.1	62.0	330.0
? Single Helix Anchor ? EHS 3/8 (Down)	19.0	227.0	35.9	53.4	74.1	55.7	330.0
? Single Helix Anchor ? EHS 7/16 (Span/Head)	83.8	265.0	32.1	11.3	74.1	13.6	130.0
? Single Helix Anchor ? EHS 1/4 (Down)	16.0	227.0	24.3	12.1	74.1	15.9	130.0
? Single Helix Anchor ? EHS 1/4 (Down)	14.5	227.0	23.0	18.7	74.1	19.8	340.0
? Single Helix Anchor ? EHS 1/4 (Down)			22.3	62.6	74.1	72.8	340.0
? Single Helix Anchor ? EHS 1/4 (Down)			22.3	35.5	74.1	37.0	350.0
? Single Helix Anchor ? EHS 1/4 (Down)			23.0	59.5	74.1	68.4	350.0
? Single Helix Anchor ? EHS 1/4 (Down)	13.0	227.0	21.0	59.1	74.1	67.5	350.0
? Single Helix Anchor ? EHS 1/4 (Down)				16.9	74.1	17.4	0.0
				56.4	74.1	63.9	0.0
System Capacity Summary:				Adequate		At Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 27.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	13,871	924.8	103,004	964.7	114.4	37,048	528	5	37,052	544.9
Comms	6,523	434.9	30,493	285.6	33.9	10,967	838	8	10,975	161.4
GuyBraces	-19,113	-1274.3	-123,949	-1160.9	-137.6	-44,581	47,354	437	-44,143	-649.2
Pole	143	9.5	564	5.3	0.6	203	2,148	20	223	3.3
Crossarms	62	4.1	463	4.3	0.5	167	285	3	169	2.5
Insulators	14	0.9	101	0.9	0.1	36	114	1	37	0.5
Pole Load	1,500	100.0	10,677	100.0	11.9	3,840	51,266	473	4,314	63.4
Pole Reserve Capacity			79,391		88.1	2,960			2,486	36.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 27.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,871	124.8	12,996	121.7	14.4	4,674	29,806	275	4,949	72.8
Unknown, COMMUNICATION	-576	-38.4	-3,346	-31.3	-3.7	-1,204	19,028	176	-1,028	-15.1
Pole	143	9.5	564	5.3	0.6	203	2,148	20	223	3.3
<Undefined>	62	4.1	463	4.3	0.5	167	285	3	169	2.5
Totals:	1,500	100.0	10,677	100.0	11.9	3,840	51,266	473	4,314	63.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.77	22.58	0.7200	1.02	0.462	147.3	47.2	147.3	3,210	144,531	31	-292	144,270
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.77	50.35	0.7200	1.02	0.462	147.3	47.2	147.3	3,210	144,531	4	-292	144,243
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	36.77	50.35	0.7200	1.02	0.462	147.3	47.2	147.3	3,210	144,531	24	-292	144,263
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	32.56	22.82	0.7200	0.07	0.462	63.3	174.2	63.5	150	-5,302	-13	397	-4,917
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	32.56	50.46	0.7200	0.07	0.462	63.3	174.2	63.5	150	-5,302	-13	397	-4,918
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	32.56	50.46	0.7200	0.07	0.462	63.3	174.2	63.5	150	-5,302	2	397	-4,903
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.44	6.69	0.3980	0.31	0.145	147.3	47.2	147.3	2,128	74,118	3	-166	73,955
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.44	6.69	0.3980	0.08	0.145	63.3	174.2	63.5	50	-1,544	1	256	-1,287
										Totals:	490,261	39	404	490,705	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown, COMMUNICATION	24.33	6.93	1.3300	2.07	0.337	147.3	47.2	147.3	925	27,562	63	-290	27,335
CATV	CATV 1.0	Unknown, COMMUNICATION	24.08	6.95	1.3300	0.80	0.337	63.3	174.2	63.6	80	-2,091	-24	441	-1,675
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.33	6.99	0.6570	0.78	0.190	63.3	174.2	63.8	35	-887	-14	270	-630

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.00	7.01	0.6570	1.98	0.190	147.3	47.2	147.3	750	21,123	36	-173	20,986
Telco	TELE 1.5	Unknown, COMMUNICATION	22.50	7.04	1.5000	0.91	0.900	63.3	174.2	63.8	150	-3,664	-43	450	-3,256
Telco	TELE 1.5	Unknown, COMMUNICATION	22.25	7.05	1.5000	2.45	0.900	147.3	47.2	147.3	2,000	54,492	112	-290	54,314
Telco	TELE 1.5	Unknown, COMMUNICATION	21.25	7.11	1.5000	0.91	0.900	63.3	174.2	63.8	150	-3,460	-43	425	-3,078
Telco	TELE 1.5	Unknown, COMMUNICATION	21.00	7.13	1.5000	2.45	0.900	147.3	47.2	147.3	2,000	51,431	113	-274	51,270
Totals:											144,506	201	559	145,266	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	36.77	5.45	47.2	47.2	50.00	4.50	3.50	96.00	0	2,063	2,063
Normal	Crossarm	32.56	5.69	174.2	174.2	50.00	4.50	3.50	96.00	-38	182	144
Totals:										-38	2,244	2,207

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 25 kV KU, UTILITY	36.77	0.00	47.2	0.0	3.00	3.90	17.13	10	82	92
Deadend	Deadend Insulator - 25 kV KU, UTILITY	36.77	45.00	130.3	0.0	3.00	3.90	17.13	3	82	85
Deadend	Deadend Insulator - 25 kV KU, UTILITY	36.77	-45.00	324.1	0.0	3.00	3.90	17.13	17	82	100
Deadend	Deadend Insulator - 25 kV KU, UTILITY	32.56	0.00	174.2	0.0	3.00	3.90	17.13	-9	73	64
Deadend	Deadend Insulator - 25 kV KU, UTILITY	32.56	45.00	256.9	0.0	3.00	3.90	17.13	-21	73	52
Deadend	Deadend Insulator - 25 kV KU, UTILITY	32.56	-45.00	91.4	0.0	3.00	3.90	17.13	3	73	76
Spool	Spool Insulator - 25 kV KU, UTILITY	28.44	0.00	110.7	20.7	2.00	3.00	3.19	0	9	9
Bolt	Three Bolt Unknown, COMMUNICATION	24.33	0.00	47.2	47.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt Unknown, COMMUNICATION	24.08	0.00	174.2	174.2	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt Unknown, COMMUNICATION	23.33	0.00	174.2	174.2	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt Unknown, COMMUNICATION	23.00	0.00	47.2	47.2	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt Unknown, COMMUNICATION	22.50	0.00	174.2	174.2	5.00	3.00	0.00	-5	0	-5

Bolt	Single Bolt	Unknown, COMMUNICATION	22.25	0.00	47.2	47.2	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	21.25	0.00	174.2	174.2	5.00	3.00	0.00	-5	0	-5
Bolt	Single Bolt	Unknown, COMMUNICATION	21.00	0.00	47.2	47.2	5.00	3.00	0.00	5	0	5
Totals:										6	474	480

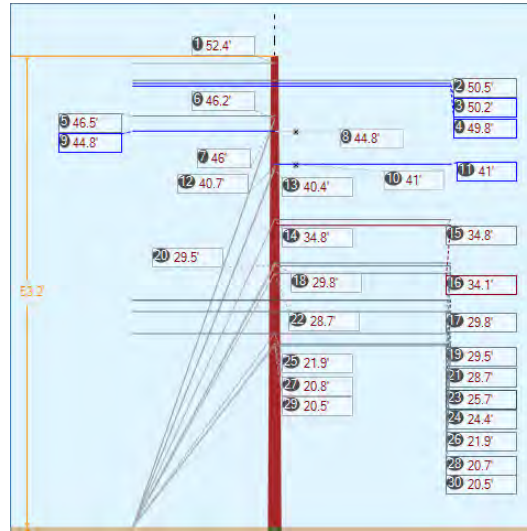
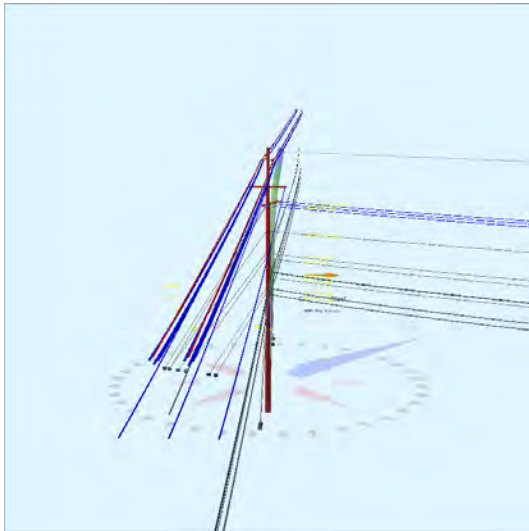
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	36.32	0.00	24.00	0.375	75.00	227.0	56.4	0.273	41.86	3.14
EHS 3/8	Down	KU, UTILITY	35.92	0.00	19.00	0.375	75.00	227.0	61.9	0.273	38.99	2.62
EHS 7/16	Span/Head	KU, UTILITY	32.05	32.05	83.81	0.438	75.00	265.0	0.0	0.399	81.98	0.86
EHS 1/4	Down	Unknown, COMMUNICATION	24.33	0.00	16.00	0.25	75.00	227.0	56.5	0.121	27.42	1.46
EHS 1/4	Down	Unknown, COMMUNICATION	23.00	0.00	14.50	0.25	75.00	227.0	57.6	0.121	25.49	1.29
EHS 1/4	Down	Unknown, COMMUNICATION	22.25	0.00	14.50	0.25	75.00	227.0	56.7	0.121	24.85	1.25
EHS 1/4	Down	Unknown, COMMUNICATION	21.00	0.00	13.00	0.25	75.00	227.0	58.0	0.121	23.00	1.10

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	13,645	12,405	11,926	9,927	6,609	-6,233	-223,270
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	12,244	11,131	10,675	9,417	5,028	-4,742	-167,005
EHS 7/16	Span/Head	2.30e+7	20,800	0.90	18,720	700	2,984	2,713	2,265	0	2,265	-1,220	-38,998
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,354	3,958	3,747	3,124	2,070	-1,952	-46,529
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,093	3,721	3,559	3,004	1,909	-1,800	-40,448
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,042	3,674	3,536	2,956	1,941	-1,830	-39,799
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,822	3,474	3,373	2,861	1,785	-1,684	-34,436
Totals:										31,290	21,607	-19,461	-590,483

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	24.00	227.0	20,000	1.00	20,000	12,405	11,926	62.0
Single Helix Anchor		18.00	19.00	227.0	20,000	1.00	20,000	11,131	10,675	55.7
Single Helix Anchor		18.00	83.81	265.0	20,000	1.00	20,000	2,713	2,265	13.6
Single Helix Anchor		18.00	16.00	227.0	20,000	1.00	20,000	3,958	3,747	19.8
Single Helix Anchor		18.00	14.50	227.0	20,000	1.00	20,000	7,395	7,095	37.0
Single Helix Anchor		18.00	13.00	227.0	20,000	1.00	20,000	3,474	3,373	17.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.08	34.70	10.47	37.32	7.32	11.75	1.60e+6	60.00	57.00	37.36	113,621	1136.73	2.22

Pole Num:	493W - NT	Pole Length / Class:	60 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	47.71	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.995381 Deg	Longitude:	-84.439688 Deg	Elevation:	882.393691887136		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.1	41.0
Groundline	19.6	0.0
Vertical	35.7	37.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,190	54.6
Groundline	37,073	21.7
GL Allowable	194,820	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	192.8	69.9		0.0	46.3	0.0	0.0
? EHS 7/16 (Span/Head)			52.4	0.0	46.3	0.0	0.0
? Single Helix Anchor	39.3	317.0		33.4	46.3	40.7	200.0
? EHS 7/16 (Down)			46.2	35.7	46.3	47.9	200.0
? Single Helix Anchor	33.6	317.0		32.0	46.3	39.4	200.0
? EHS 7/16 (Down)			46.0	34.2	46.3	46.3	200.0
? Single Helix Anchor	27.3	251.0		50.1	46.3	50.1	44.9
? EHS 7/16 (Down)			40.7	53.5	46.3	58.9	44.9
? Single Helix Anchor	26.0	251.0		84.1	46.3	84.1	43.9
? EHS 7/16 (Down)			40.4	51.7	46.3	56.8	44.9
? EHS 7/16 (Down)			34.8	38.2	46.3	42.1	42.8
? Single Helix Anchor	23.6	251.0		16.2	46.3	16.2	20.0
? EHS 5/16 (Down)			29.9	32.2	46.3	35.4	20.0
? Single Helix Anchor	30.0	138.0		4.9	46.3	5.6	10.0
? EHS 5/16 (Down)			29.6	9.7	46.3	12.3	10.0
? Single Helix Anchor	21.5	251.0		16.0	46.3	16.1	2.8
? EHS 5/16 (Down)			28.7	31.7	46.3	35.0	2.8
? Single Helix Anchor	15.4	251.0		11.1	46.3	11.1	10.0
? EHS 1/4 (Down)			21.9	37.0	46.3	40.8	10.0
? Single Helix Anchor	13.5	251.0		10.9	46.3	10.9	10.0
? EHS 1/4 (Down)			20.8	36.3	46.3	40.1	10.0
? Single Helix Anchor	27.6	138.0		6.4	46.3	7.0	359.3
? EHS 1/4 (Down)			20.5	21.2	46.3	25.8	359.3
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 21.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,649	146.0	102,113	275.4	52.4	6,033	4,699	26	6,059	89.1
Comms	9,222	289.7	131,441	354.6	67.5	7,765	2,460	14	7,779	114.4
GuyBraces	-11,072	-347.8	-202,876	-547.2	-104.1	-11,985	64,529	356	-11,629	-171.0
Pole	336	10.5	5,106	13.8	2.6	302	4,800	27	328	4.8
Crossarms	22	0.7	552	1.5	0.3	33	190	1	34	0.5
Insulators	27	0.9	736	2.0	0.4	44	177	1	44	0.7
Pole Load	3,184	100.0	37,073	100.0	19.0	2,190	76,855	424	2,615	38.4
Pole Reserve Capacity			157,747		81.0	4,610			4,185	61.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 21.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,606	50.4	47,591	128.4	24.4	2,812	3,765	21	2,832	41.7
KU, UTILITY	-3,471	-109.0	-78,825	-212.6	-40.5	-4,657	51,149	282	-4,374	-64.3
Unknown, COMMUNICATION	4,690	147.3	62,648	169.0	32.2	3,701	16,949	94	3,795	55.8
Pole	336	10.5	5,106	13.8	2.6	302	4,800	27	328	4.8
<Undefined>	22	0.7	552	1.5	0.3	33	190	1	34	0.5
Totals:	3,184	100.0	37,073	100.0	19.0	2,190	76,855	424	2,615	38.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	50.50	15.97	0.5630	0.32	0.291	157.6	137.6	157.6	5,010	-143,513	27	2,220	-141,267
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	50.50	15.97	0.5630	0.66	0.291	227.4	318.3	227.4	5,010	147,118	38	3,183	150,339
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	11.97	1.1080	1.98	1.093	157.6	137.6	157.6	3,200	-91,060	75	3,336	-87,650
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	19.97	1.1080	1.98	1.093	157.6	137.6	157.6	3,200	-91,060	75	3,336	-87,650
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	11.97	1.1080	3.35	1.093	227.4	318.3	227.4	3,200	93,347	108	4,782	98,238

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	19.97	1.1080	3.35	1.093	227.4	318.3	227.4	3,200	93,347	108	4,782	98,238
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.83	15.97	1.1080	1.98	1.093	157.6	137.6	157.6	3,200	-90,455	75	3,313	-87,066
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.83	15.97	1.1080	3.35	1.093	227.4	318.3	227.4	3,200	92,727	108	4,751	97,586
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	50.50	15.97	0.5630	0.32	0.291	157.6	137.6	157.6	5,010	-143,513	-27	2,220	-141,320
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	50.50	15.97	0.5630	0.66	0.291	227.4	318.3	227.4	5,010	147,118	-38	3,183	150,262
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	11.97	1.1080	1.98	1.093	157.6	137.6	157.6	3,200	-91,060	-75	3,336	-87,799
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	19.97	1.1080	1.98	1.093	157.6	137.6	157.6	3,200	-91,060	-75	3,336	-87,799
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	11.97	1.1080	3.35	1.093	227.4	318.3	227.4	3,200	93,347	-108	4,782	98,022
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	50.17	19.97	1.1080	3.35	1.093	227.4	318.3	227.4	3,200	93,347	-108	4,782	98,022
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.83	15.97	1.1080	1.98	1.093	157.6	137.6	157.6	3,200	-90,455	-75	3,313	-87,217
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.83	15.97	1.1080	3.35	1.093	227.4	318.3	227.4	3,200	92,727	-108	4,751	97,369
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	46.48	17.47	0.3980	0.46	0.145	157.6	137.6	157.6	2,128	-56,102	-9	1,726	-54,385
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.76	23.70	0.7200	1.57	0.462	157.6	137.6	157.6	2,210	-56,114	-20	2,258	-53,876
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.76	50.86	0.7200	1.57	0.462	157.6	137.6	157.6	2,210	-56,114	-46	2,258	-53,901
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.76	50.86	0.7200	1.57	0.462	157.6	137.6	157.6	2,210	-56,114	27	2,258	-53,828
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.02	23.93	0.7200	2.02	0.462	192.8	69.9	192.8	2,210	78,602	39	839	79,480
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.02	50.97	0.7200	2.02	0.462	192.8	69.9	192.8	2,210	78,602	-20	839	79,420
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.02	50.97	0.7200	2.02	0.462	192.8	69.9	192.8	2,210	78,602	57	839	79,497
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	34.79	18.19	0.3980	0.52	0.145	192.8	69.9	192.8	2,128	64,182	19	524	64,724
Secondary	TRIPLEX 4 AWG	KU, UTILITY	34.13	7.98	0.6800	2.82	0.164	227.4	318.3	228.2	150	2,977	29	2,387	5,394
Totals:											99,424	77	73,332	172,833	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.85	8.25	0.6570	2.77	0.190	192.8	69.9	192.8	750	19,409	40	579	20,028
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.55	8.26	0.6570	3.61	0.190	227.4	318.3	227.4	750	12,886	31	2,026	14,944

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	28.72	8.32	0.6570	2.77	0.190	192.8	69.9	192.8	750	18,672	40	557	19,269
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	28.68	8.32	0.6570	3.61	0.190	227.4	318.3	227.4	750	12,507	32	1,967	14,505
CATV	CATV 1.0	Unknown, COMMUNICATION	25.67	8.50	1.3300	2.94	0.337	192.8	69.9	192.9	925	20,587	96	787	21,471
CATV	CATV 1.0	Unknown, COMMUNICATION	25.67	8.50	1.3300	2.29	0.337	157.6	137.6	157.6	925	-13,469	79	1,943	-11,448
CATV	CATV 1.0	Unknown, COMMUNICATION	25.67	8.50	1.3300	3.74	0.337	227.4	318.3	227.4	925	13,808	114	2,785	16,706
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.39	8.58	0.6570	2.77	0.190	192.8	69.9	192.8	750	15,861	55	473	16,389
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.39	8.58	0.6570	2.26	0.190	157.6	137.6	157.6	750	-10,377	45	1,167	-9,164
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.39	8.58	0.6570	3.61	0.190	227.4	318.3	227.4	750	10,637	65	1,673	12,376
Telco	TELE 1.5	Unknown, COMMUNICATION	21.89	8.74	1.5000	3.51	0.900	192.8	69.9	192.9	2,000	37,957	173	734	38,864
Telco	TELE 1.5	Unknown, COMMUNICATION	21.89	8.74	1.5000	2.69	0.900	157.6	137.6	157.7	2,000	-24,834	141	1,810	-22,882
Telco	TELE 1.5	Unknown, COMMUNICATION	21.89	8.74	1.5000	4.47	0.900	227.4	318.3	227.5	2,000	25,457	204	2,595	28,256
Telco	TELE 1.5	Unknown, COMMUNICATION	20.53	8.82	1.5000	3.51	0.900	192.8	69.9	192.9	2,000	35,603	174	688	36,466
Telco	TELE 1.5	Unknown, COMMUNICATION	20.75	8.81	1.5000	4.47	0.900	227.4	318.3	227.5	2,000	24,132	102	2,460	26,694
Totals:											198,837	1,392	22,244	222,473	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	44.76	6.57	137.6	137.6	50.00	4.50	3.50	96.00	-23	64	41
Normal	Crossarm	41.02	6.80	69.9	69.9	50.00	4.50	3.50	96.00	36	857	893
Totals:										13	921	935

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension	Suspension 11.50" Power, UTILITY	50.50	0.00	50.0	50.0	11.00	4.75	11.50	24	122	146

Suspension	Suspension 11.50"	Power, UTILITY	50.50	0.00	230.0	230.0	11.00	4.75	11.50	-24	122	97
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	46.48	0.00	137.6	137.6	3.00	3.80	12.75	-4	100	96
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	44.76	0.00	137.6	0.0	3.00	3.90	17.13	-5	132	127
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	44.76	45.00	219.3	0.0	3.00	3.90	17.13	-24	132	108
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	44.76	-45.00	55.9	0.0	3.00	3.90	17.13	14	132	146
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	41.02	0.00	69.9	0.0	3.00	3.90	17.13	8	121	129
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	41.02	45.00	151.3	0.0	3.00	3.90	17.13	-8	121	113
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	41.02	-45.00	348.5	0.0	3.00	3.90	17.13	24	121	145
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.79	0.00	69.9	69.9	3.00	3.80	12.75	6	74	80
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.13	0.00	318.3	318.3	2.00	3.00	3.19	1	14	16
Bolt	Single Bolt	Unknown, COMMUNICATION	29.85	0.00	69.9	159.9	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	29.55	0.00	318.3	408.3	5.00	3.00	0.00	3	0	3
Bolt	Single Bolt	Unknown, COMMUNICATION	28.72	0.00	69.9	159.9	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	28.68	0.00	318.3	408.3	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	25.67	0.00	48.0	318.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.39	0.00	48.0	318.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.89	0.00	48.0	318.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.53	0.00	48.0	318.0	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.75	0.00	318.3	318.3	5.00	3.00	0.00	3	0	3
Totals:										54	1,192	1,246

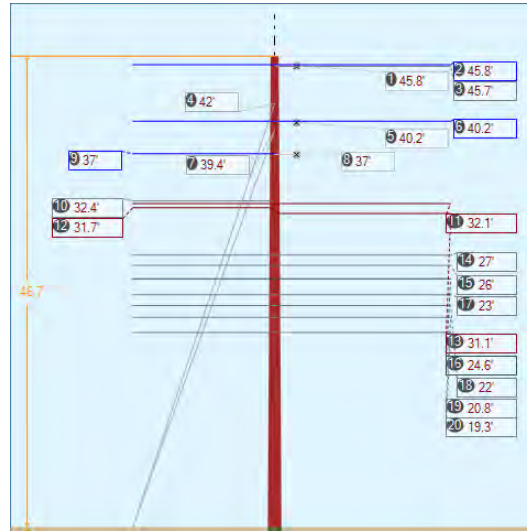
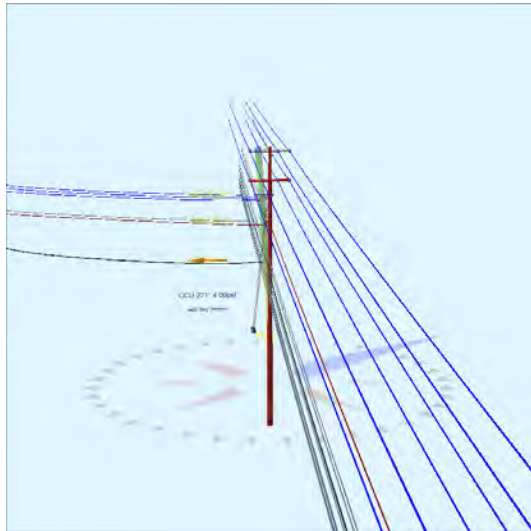
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 7/16	Span/Head	KU, UTILITY	52.42	52.42	192.82	0.438	75.00	69.9	0.0	0.399	190.96	0.00
EHS 7/16	Down	KU, UTILITY	46.19	0.00	39.27	0.438	75.00	317.0	49.5	0.399	58.87	1.82
EHS 7/16	Down	KU, UTILITY	45.99	0.00	33.60	0.438	75.00	317.0	53.7	0.399	55.23	1.64
EHS 7/16	Down	KU, UTILITY	40.74	0.00	27.32	0.438	75.00	251.0	56.0	0.399	47.32	2.19
EHS 7/16	Down	KU, UTILITY	40.44	0.00	26.00	0.438	75.00	251.0	57.1	0.399	46.35	2.07
EHS 7/16	Down	KU, UTILITY	34.79	0.00	26.00	0.438	75.00	251.0	53.0	0.399	41.66	1.38
EHS 5/16	Down	Unknown, COMMUNICATION	29.85	0.00	23.63	0.312	75.00	251.0	51.5	0.205	36.28	1.07
EHS 5/16	Down	KU, UTILITY	29.55	0.00	29.97	0.312	75.00	138.0	44.5	0.205	40.25	0.36
EHS 5/16	Down	Unknown, COMMUNICATION	28.72	0.00	21.54	0.312	75.00	251.0	52.9	0.205	34.11	0.99
EHS 1/4	Down	Unknown, COMMUNICATION	21.89	0.00	15.44	0.25	75.00	251.0	54.6	0.121	24.99	0.78
EHS 1/4	Down	Unknown, COMMUNICATION	20.79	0.00	13.52	0.25	75.00	251.0	56.8	0.121	23.01	0.71
EHS 1/4	Down	Unknown, COMMUNICATION	20.53	0.00	27.64	0.25	75.00	138.0	36.5	0.121	32.51	0.59

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 7/16	Span/Head	2.30e+7	20,800	0.90	18,720	700	0	0	0	0	0	0	861
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	8,962	8,148	6,683	5,078	4,344	1,854	85,561
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	8,667	7,879	6,408	5,162	3,798	1,621	74,315
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	11,019	10,017	10,017	8,299	5,609	-3,660	-146,559
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	10,640	9,673	9,672	8,117	5,261	-3,432	-136,280
EHS 7/16	Down	2.30e+7	20,800	0.90	18,720	700	7,875	7,159	7,157	5,719	4,304	-2,808	-96,056
EHS 5/16	Down	2.30e+7	11,200	0.90	10,080	700	3,573	3,249	3,241	2,535	2,020	-1,318	-38,628
EHS 5/16	Down	2.30e+7	11,200	0.90	10,080	700	1,240	1,128	973	682	695	-308	-8,744
EHS 5/16	Down	2.30e+7	11,200	0.90	10,080	700	3,532	3,211	3,199	2,553	1,928	-1,258	-35,389
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,440	2,218	2,212	1,803	1,281	-836	-17,766
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,398	2,180	2,175	1,819	1,192	-778	-15,615
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,543	1,402	1,271	756	1,022	-452	-9,081
Totals:										42,522	31,452	-11,374	-343,381

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	192.82	69.9	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	39.27	317.0	20,000	1.00	20,000	8,148	6,683	40.7
Single Helix Anchor		18.00	33.60	317.0	20,000	1.00	20,000	7,879	6,408	39.4
Single Helix Anchor		18.00	27.32	251.0	20,000	1.00	20,000	10,017	10,017	50.1
Single Helix Anchor		18.00	26.00	251.0	20,000	1.00	20,000	16,821	16,819	84.1
Single Helix Anchor		18.00	23.63	251.0	20,000	1.00	20,000	3,248	3,241	16.2
Single Helix Anchor		18.00	29.97	138.0	20,000	1.00	20,000	1,128	973	5.6
Single Helix Anchor		18.00	21.54	251.0	20,000	1.00	20,000	3,211	3,199	16.1
Single Helix Anchor		18.00	15.44	251.0	20,000	1.00	20,000	2,218	2,212	11.1
Single Helix Anchor		18.00	13.52	251.0	20,000	1.00	20,000	2,180	2,175	10.9
Single Helix Anchor		18.00	27.64	138.0	20,000	1.00	20,000	1,402	1,271	7.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	37.90	34.63	13.56	50.53	8.60	15.19	1.60e+6	60.00	57.00	53.25	215,427	2152.79	2.80

Pole Num:	494W - NT	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.29	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.64	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.995796 Deg	Longitude:	-84.440262 Deg	Elevation:	881.247987696644		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	72.5	0.0 220.5
Groundline	72.5	0.0 220.5
Vertical	4.0	30.4 130.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	99,449	219.5 220.5
Groundline	99,449	219.5 220.5
GL Allowable	139,056	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	46.0	310.0		0.4	220.5	1.3	120.0
? EHS 3/8 (Down)			42.0	0.6	220.5	2.0	120.0
? Single Helix Anchor	43.0	310.0		5.5	220.5	6.7	130.0
? EHS 3/8 (Down)			39.4	7.9	220.5	10.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 219.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,543	48.7	59,084	59.4	42.5	2,912	2,025	14	2,926	43.0
Comms	1,236	39.0	29,832	30.0	21.5	1,470	2,078	14	1,484	21.8
GuyBraces	24	0.8	969	1.0	0.7	48	1,230	9	56	0.8
Pole	293	9.3	6,662	6.7	4.8	328	3,442	24	352	5.2
Crossarms	32	1.0	1,243	1.3	0.9	61	285	2	63	0.9
Insulators	40	1.3	1,659	1.7	1.2	82	177	1	83	1.2
Pole Load	3,168	100.0	99,449	100.0	71.5	4,901	9,236	64	4,964	73.0
Pole Reserve Capacity			39,607		28.5	1,899			1,836	27.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 219.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,607	50.7	61,669	62.0	44.4	3,039	3,365	23	3,062	45.0
Unknown, COMMUNICATION	1,236	39.0	29,875	30.0	21.5	1,472	2,145	15	1,487	21.9
Pole	293	9.3	6,662	6.7	4.8	328	3,442	24	352	5.2
<Undefined>	32	1.0	1,243	1.3	0.9	61	285	2	63	0.9
Totals:	3,168	100.0	99,449	100.0	71.5	4,901	9,236	64	4,964	73.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.85	19.30	0.7200	2.03	0.462	227.4	131.3	227.4	3,210	5,859	-51	3,708	9,516
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.85	45.54	0.7200	2.03	0.462	227.4	131.3	227.4	3,210	5,859	55	3,708	9,622
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.85	45.54	0.7200	2.03	0.462	227.4	131.3	227.4	3,210	5,859	-54	3,708	9,512
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.85	25.83	0.7200	1.15	0.462	154.7	311.6	154.7	3,210	-6,860	-27	2,522	-4,365
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.85	48.67	0.7200	1.15	0.462	154.7	311.6	154.7	3,210	-6,860	-35	2,522	-4,373
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.85	48.67	0.7200	1.15	0.462	154.7	311.6	154.7	3,210	-6,860	34	2,522	-4,304

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	45.68	7.23	0.3980	0.44	0.145	154.7	311.6	154.7	2,128	-4,531	-1	1,850	-2,682
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.25	19.18	0.7200	2.03	0.462	227.4	131.3	227.4	3,210	5,143	-56	3,255	8,343
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.25	45.49	0.7200	2.03	0.462	227.4	131.3	227.4	3,210	5,143	60	3,255	8,458
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.25	45.49	0.7200	2.03	0.462	227.4	131.3	227.4	3,210	5,143	-59	3,255	8,340
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.25	26.08	0.7200	1.15	0.462	154.7	311.6	154.7	1,750	-3,283	-29	2,214	-1,098
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.25	48.80	0.7200	1.15	0.462	154.7	311.6	154.7	1,750	-3,283	-38	2,214	-1,107
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.25	48.80	0.7200	1.15	0.462	154.7	311.6	154.7	1,750	-3,283	37	2,214	-1,032
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.03	19.06	0.3980	0.04	0.145	55.9	240.2	55.9	100	4,504	7	64	4,575
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.03	48.87	0.3980	0.04	0.145	55.9	240.2	55.9	100	4,504	0	64	4,569
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.03	48.87	0.3980	0.04	0.145	55.9	240.2	55.9	100	4,504	5	64	4,573
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.37	7.34	0.3250	0.04	0.107	55.9	240.2	55.9	100	3,938	9	52	3,998
Secondary	TRIPLEX 4 AWG	KU, UTILITY	32.08	7.36	0.6800	2.82	0.164	227.4	131.3	227.4	916	1,170	2	2,509	3,680
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	32.08	17.61	0.5630	1.27	0.291	154.7	311.6	154.7	1,828	-2,733	-1	1,538	-1,197
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	31.67	7.38	0.2570	0.03	0.067	55.9	240.2	55.9	100	3,853	7	46	3,906
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.11	7.42	0.3980	1.94	0.145	154.7	311.6	154.7	450	-653	-1	1,260	606
Totals:											17,133	-138	42,544	59,539	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	26.98	7.66	0.6570	3.61	0.190	227.4	131.3	227.4	750	806	65	2,069	2,940
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	26.98	7.66	0.6570	2.21	0.190	154.7	311.6	154.7	750	-943	44	1,408	509
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.98	7.72	0.6570	3.61	0.190	227.4	131.3	227.4	750	776	66	1,992	2,834
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.98	7.72	0.6570	2.21	0.190	154.7	311.6	154.7	750	-908	45	1,355	492
CATV	CATV 1.0 COMMUNICATION	Unknown,	24.63	7.81	1.3300	3.74	0.337	227.4	131.3	227.4	925	907	116	2,987	4,010

CATV	CATV 1.0	Unknown, COMMUNICATION	24.63	7.81	1.3300	0.69	0.337	55.9	240.2	56.0	100	2,996	29	87	3,112
CATV	CATV 1.0	Unknown, COMMUNICATION	24.63	7.81	1.3300	2.23	0.337	154.7	311.6	154.7	925	-1,062	79	2,032	1,049
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.04	7.90	0.6570	3.61	0.190	227.4	131.3	227.4	750	688	67	1,767	2,522
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.04	7.90	0.6570	2.21	0.190	154.7	311.6	154.7	750	-806	46	1,202	442
Telco	TELE 1.5	Unknown, COMMUNICATION	21.98	7.96	1.5000	4.47	0.900	227.4	131.3	227.5	2,000	1,750	207	2,913	4,870
Telco	TELE 1.5	Unknown, COMMUNICATION	21.98	7.96	1.5000	2.63	0.900	154.7	311.6	154.8	2,000	-2,049	141	1,982	74
Telco	TELE 1.5	Unknown, COMMUNICATION	20.81	8.04	1.5000	4.47	0.900	227.4	131.3	227.5	2,000	1,657	209	2,758	4,624
Telco	TELE 1.5	Unknown, COMMUNICATION	20.81	8.04	1.5000	2.63	0.900	154.7	311.6	154.8	2,000	-1,940	142	1,876	79
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.31	8.13	0.6570	3.61	0.190	227.4	131.3	227.4	750	576	69	1,480	2,126
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.31	8.13	0.6570	2.21	0.190	154.7	311.6	154.7	750	-675	47	1,007	379
Totals:											1,773	1,371	26,918	30,061	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	45.85	5.78	311.6	311.6	50.00	4.50	3.50	96.00	-2	57	55	
Normal	Crossarm	40.25	6.12	311.6	311.6	50.00	4.50	3.50	96.00	-2	50	48	
Normal	Crossarm	37.03	6.31	240.2	240.2	50.00	4.50	3.50	96.00	47	1,102	1,149	
Totals:											43	1,209	1,253

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	45.85	18.00	23.8	180.0	3.00	3.80	12.75	-8	108	100
Deadend	Deadend Insulator - 15 kV KU, UTILITY	45.85	-45.00	228.9	180.0	3.00	3.80	12.75	21	108	129
Deadend	Deadend Insulator - 15 kV KU, UTILITY	45.85	45.00	34.3	180.0	3.00	3.80	12.75	-21	108	87
Deadend	Deadend Insulator - 15 kV KU, UTILITY	45.85	18.00	23.8	0.0	3.00	3.80	12.75	-9	108	99

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.85	45.00	34.3	0.0	3.00	3.80	12.75	-22	108	86
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.85	-45.00	228.9	0.0	3.00	3.80	12.75	21	108	129
Deadend	Spool Insulator - 25 kV	KU, UTILITY	45.68	0.00	311.6	311.6	2.00	3.00	3.19	0	21	21
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.25	18.00	22.8	180.0	3.00	3.80	12.75	-8	95	86
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.25	-45.00	229.4	180.0	3.00	3.80	12.75	21	95	116
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.25	45.00	33.9	180.0	3.00	3.80	12.75	-21	95	74
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.25	18.00	22.8	0.0	3.00	3.80	12.75	-9	95	86
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.25	45.00	33.9	0.0	3.00	3.80	12.75	-22	95	73
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	40.25	-45.00	229.4	0.0	3.00	3.80	12.75	21	95	116
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.03	0.00	240.2	0.0	3.00	3.80	12.75	8	87	96
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.03	45.00	322.2	0.0	3.00	3.80	12.75	1	87	88
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.03	-45.00	158.2	0.0	3.00	3.80	12.75	16	87	103
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.37	0.00	240.2	240.2	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.08	0.00	131.3	131.3	2.00	3.00	3.19	0	15	15
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.08	0.00	311.6	311.6	3.00	3.80	12.75	0	76	75
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.67	0.00	240.2	240.2	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.11	0.00	311.6	311.6	2.00	3.00	3.19	0	14	14
Bolt	Single Bolt	Unknown, COMMUNICATION	26.98	0.00	221.3	221.3	5.00	3.00	0.00	6	0	6
Bolt	Single Bolt	Unknown, COMMUNICATION	25.98	0.00	221.3	221.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.63	0.00	221.5	311.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.04	0.00	221.5	311.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.98	0.00	221.5	311.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.81	0.00	221.5	311.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.31	0.00	221.5	311.5	5.00	3.00	0.00	6	0	6
Totals:										38	1,634	1,672

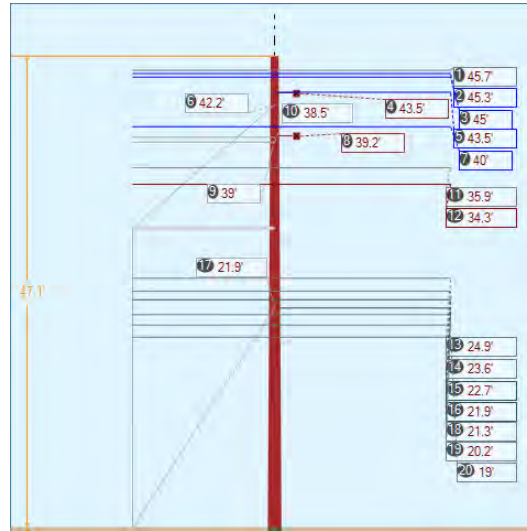
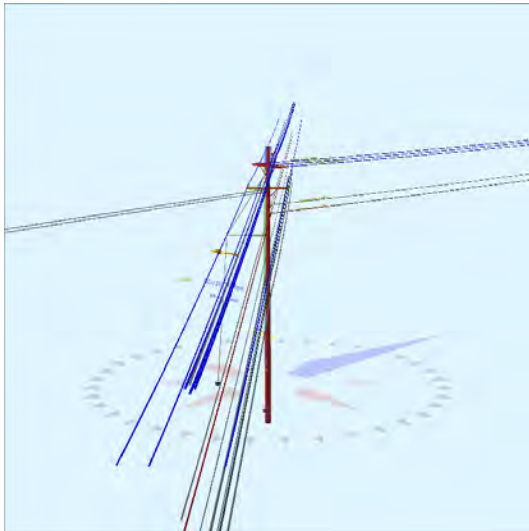
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	42.00	0.00	46.00	0.375	75.00	310.0	42.3	0.273	60.53	0.03
EHS 3/8	Down	KU, UTILITY	39.37	0.00	43.00	0.375	75.00	310.0	42.3	0.273	56.53	0.39

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	281	255	82	55	61	0	644
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,467	1,334	1,090	734	805	-6	332
Totals:										789	866	-7	977

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	46.00	310.0	20,000	1.00	20,000	255	82	1.3
Single Helix Anchor			18.00	43.00	310.0	20,000	1.00	20,000	1,334	1,090	6.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.41	34.04	12.33	16.00	7.96	13.58	1.60e+6	60.00	57.00	46.71	228,470	2309.04	25.00

Pole Num:	495W - 500--46	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.91	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.78	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.996105 Deg	Longitude:	-84.440630 Deg	Elevation:	875.220365411329		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	55.3	39.3
Groundline	43.0	0.0
Vertical	5.2	30.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	20,760	352.3
Groundline	12,267	238.2
GL Allowable	140,474	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	10.0	227.0		3.8	267.0	36.2	61.2
? EHS 7/16 (Sidewalk)			42.2	4.1	267.0	42.6	61.2
? Sidewalk Strut	8.0	227.0	29.9	14.9	267.0	141.6	61.2
? Single Helix Anchor	156.4	175.0		42.4	267.0	46.3	175.0
? EHS 3/8 (Span/Head)			39.0	31.5	267.0	37.1	350.0
? EHS 3/8 (Span/Head)			38.5	29.7	267.0	36.3	0.0
? Single Helix Anchor	17.5	136.3		9.9	267.0	10.5	240.0
? EHS 1/4 (Down)			21.9	33.2	267.0	38.7	240.0
System Capacity Summary:				Adequate		Inadequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 238.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-4,155	-674.0	-197,196	-1607.5	-140.4	-8,014	2,887	20	-7,994	-117.6
Comms	830	134.6	21,397	174.4	15.2	870	1,659	11	881	13.0
GuyBraces	3,656	593.1	179,696	1464.9	127.9	7,302	3,429	24	7,326	107.7
Pole	260	42.1	7,135	58.2	5.1	290	3,486	24	314	4.6
Crossarms	11	1.7	515	4.2	0.4	21	285	2	23	0.3
Insulators	15	2.4	719	5.9	0.5	29	146	1	30	0.4
Pole Load	617	100.0	12,267	100.0	8.7	499	11,892	82	580	8.5
Pole Reserve Capacity			128,207		91.3	6,302			6,220	91.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 238.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	425	68.9	22,274	181.6	15.9	905	1,594	11	916	13.5
KU, UTILITY	-662	-107.4	-32,618	-265.9	-23.2	-1,326	2,444	17	-1,309	-19.2
Unknown, COMMUNICATION	583	94.6	14,960	122.0	10.7	608	4,083	28	636	9.4
Pole	260	42.1	7,135	58.2	5.1	290	3,486	24	314	4.6
<Undefined>	11	1.7	515	4.2	0.4	21	285	2	23	0.3
Totals:	617	100.0	12,267	100.0	8.7	499	11,892	82	580	8.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.67	15.56	0.5630	0.64	0.291	155.2	137.4	155.2	3,000	-33,472	-27	1,662	-31,836
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.67	15.56	0.5630	0.75	0.291	170.2	317.4	170.2	3,000	33,472	-29	1,823	35,265
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	11.56	1.1080	1.94	1.093	155.2	137.4	155.2	3,200	-35,443	-75	2,496	-33,021
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	19.56	1.1080	1.94	1.093	155.2	137.4	155.2	3,200	-35,443	-75	2,496	-33,021
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	11.56	1.1080	2.20	1.093	170.2	317.4	170.2	3,200	35,443	-82	2,737	38,098
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	19.56	1.1080	2.20	1.093	170.2	317.4	170.2	3,200	35,443	-82	2,737	38,098
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.00	15.56	1.1080	1.94	1.093	155.2	137.4	155.2	3,200	-35,182	-75	2,478	-32,780
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.00	15.56	1.1080	2.20	1.093	170.2	317.4	170.2	3,200	35,182	-82	2,717	37,817
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.49	23.08	0.3980	1.75	0.145	240.7	2.6	240.7	1,400	-44,678	-16	2,252	-42,441
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.49	50.57	0.3980	1.75	0.145	240.7	2.6	240.7	1,400	-44,678	-27	2,252	-42,453
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.49	50.57	0.3980	1.75	0.145	240.7	2.6	240.7	1,400	-44,678	13	2,252	-42,412
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.03	19.04	0.7200	1.72	0.462	155.2	137.4	155.2	1,750	-17,129	155	1,674	-15,301
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.03	19.04	0.7200	1.95	0.462	170.2	317.4	170.2	1,750	17,129	170	1,835	19,134
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.03	45.43	0.7200	1.72	0.462	155.2	137.4	155.2	1,750	-17,129	404	1,674	-15,052
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.03	45.43	0.7200	1.95	0.462	170.2	317.4	170.2	1,750	17,129	443	1,835	19,407

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.03	45.43	0.7200	1.72	0.462	155.2	137.4	155.2	1,750	-17,129	-426	1,674	-15,881
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.03	45.43	0.7200	1.95	0.462	170.2	317.4	170.2	1,750	17,129	-467	1,835	18,498
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.92	7.15	0.3980	1.39	0.145	240.7	2.6	240.7	1,700	-44,815	-46	1,860	-43,001
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.92	7.15	0.5630	0.51	0.291	155.2	137.4	155.2	3,410	-29,928	-47	1,308	-28,667
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.92	7.15	0.5630	0.61	0.291	170.2	317.4	170.2	3,410	29,928	-51	1,434	31,310
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.28	7.25	0.2570	0.88	0.067	240.7	2.6	240.7	1,216	-30,588	-31	1,496	-29,122
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.28	7.25	0.2570	0.29	0.067	155.2	137.4	155.2	1,216	-10,184	-20	889	-9,315
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.28	7.25	0.2570	0.35	0.067	170.2	317.4	170.2	1,216	10,184	-22	974	11,136
											Totals:	-209,436	-496	44,390	-165,542

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.90	7.81	0.6570	2.16	0.190	155.2	137.4	155.2	750	-4,562	44	986	-3,531
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.90	7.81	0.6570	2.42	0.190	170.2	317.4	170.2	750	4,562	49	1,082	5,692
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.61	7.89	0.6570	2.16	0.190	155.2	137.4	155.2	750	-4,325	-45	935	-3,435
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.61	7.89	0.6570	2.42	0.190	170.2	317.4	170.2	750	4,325	-49	1,025	5,302
CATV	CATV 1.0	Unknown,	22.73	7.94	1.3300	2.22	0.337	155.2	137.4	155.2	925	-5,137	-79	1,424	-3,792
CATV	CATV 1.0	Unknown,	22.73	7.94	1.3300	2.50	0.337	170.2	317.4	170.2	925	5,137	-87	1,562	6,612
CATV	CATV .50	Unknown,	21.91	7.99	0.5700	2.47	0.193	170.2	317.4	170.2	500	2,677	9	880	3,566
Telco	TELE 1.5	Unknown,	21.26	8.03	1.5000	2.63	0.900	155.2	137.4	155.2	2,000	-10,387	140	1,456	-8,792
Telco	TELE 1.5	Unknown,	21.26	8.03	1.5000	2.97	0.900	170.2	317.4	170.2	2,000	10,387	153	1,596	12,137
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.21	8.09	0.6570	2.16	0.190	155.2	137.4	155.2	750	-3,703	46	801	-2,856

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.21	8.09	0.6570	2.42	0.190	170.2	317.4	170.2	750	3,703	51	878	4,631
Telco	TELE 1.5	Unknown, COMMUNICATION	18.99	8.17	1.5000	2.63	0.900	155.2	137.4	155.2	2,000	-9,279	-142	1,300	-8,121
Telco	TELE 1.5	Unknown, COMMUNICATION	18.99	8.17	1.5000	2.97	0.900	170.2	317.4	170.2	2,000	9,279	-156	1,426	10,549
Totals:											2,677	-67	15,352	17,962	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	43.49	5.95	2.6	2.6	50.00	4.50	3.50	96.00	0	247	247	
Normal	Crossarm	39.22	6.20	137.4	137.4	50.00	4.50	3.50	96.00	-9	195	186	
Totals:											-9	442	433

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	45.67	0.00	48.0	48.0	11.00	4.75	11.50	-27	106	80
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	43.49	0.00	2.6	0.0	3.00	3.90	17.13	-6	124	118
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	43.49	45.00	85.1	0.0	3.00	3.90	17.13	-24	124	100
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	43.49	-45.00	280.1	0.0	3.00	3.90	17.13	11	124	135
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.41	18.00	208.3	0.0	6.00	3.50	7.50	16	44	60
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.41	45.00	219.5	0.0	6.00	3.50	7.50	41	44	85
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.41	-45.00	55.2	0.0	6.00	3.50	7.50	-43	44	1
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.92	0.00	47.4	137.4	2.00	3.00	3.19	-2	15	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.28	0.00	62.4	62.4	2.00	3.00	3.19	-2	14	12
Bolt	Three Bolt	Unknown, COMMUNICATION	24.90	0.00	227.4	137.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.61	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.73	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	21.91	0.00	317.4	407.4	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	21.26	0.00	227.4	137.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.21	0.00	227.4	137.4	5.00	3.00	0.00	6	0	6

Bolt	Three Bolt	Unknown, COMMUNICATION	18.99	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Totals:										-35	639	604

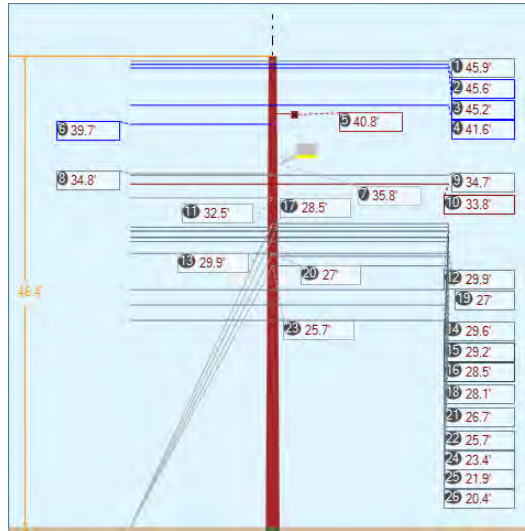
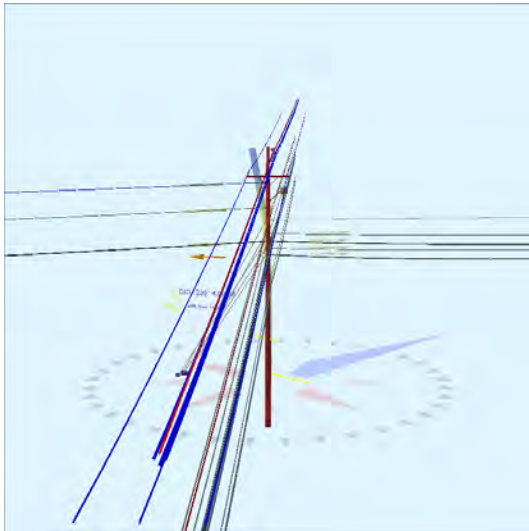
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 7/16	Sidewalk	KU, UTILITY	42.20	0.00	9.97	0.438	75.00	227.0	56.2	0.399	42.95	0.14
EHS 3/8	Span/Head	KU, UTILITY	39.00	39.00	156.37	0.375	75.00	175.0	0.0	0.273	154.50	4.25
EHS 3/8	Span/Head	KU, UTILITY	38.50	38.50	156.37	0.375	75.00	175.0	0.0	0.273	154.50	4.01
EHS 1/4	Down	Unknown, COMMUNICATION	21.91	0.00	17.47	0.25	75.00	136.3	51.3	0.121	26.24	0.74

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 7/16	Sidewalk	2.30e+7	20,800	0.90	18,720	700	7,974	7,249	765	636	425	417	5,361
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,147	4,679	4,368	0	4,368	1,967	78,126
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,035	4,577	4,117	0	4,117	1,854	72,769
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,316	2,106	1,986	1,549	1,243	-256	-5,405
Totals:										2,185	10,153	3,982	150,851

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.97	227.0	20,000	1.00	20,000	7,249	765	36.2
Single Helix Anchor		18.00	156.37	175.0	20,000	1.00	20,000	9,257	8,485	46.3
Single Helix Anchor		18.00	17.47	136.3	20,000	1.00	20,000	2,106	1,986	10.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.47	34.03	12.37	18.09	7.96	13.62	1.60e+6	60.00	57.00	47.09	230,865	2286.89	19.23

Pole Num:	496W - 500-44-50	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.58	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.53	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.996479 Deg	Longitude:	-84.441044 Deg	Elevation:	880.47043610896		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	60.2	30.0
Groundline	17.0	0.0
Vertical	5.2	29.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	32,340	211.9
Groundline	21,130	81.8
GL Allowable	137,987	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Span/Head)	170.3	41.2	32.5	20.1	234.8	21.2	200.0
? Single Helix Anchor ? EHS 3/8 (Down)	19.4	251.9	32.5	0.0	234.8	8.8	80.0
? Single Helix Anchor ? EHS 1/4 (Down)	18.3	252.3	29.9	0.8	234.8	6.6	110.0
? Single Helix Anchor ? EHS 1/4 (Down)	19.2	244.5	28.6	0.0	234.8	5.2	50.0
? Single Helix Anchor ? EHS 1/4 (Down)	18.7	248.9	27.0	4.7	234.8	8.2	100.0
? Single Helix Anchor ? EHS 1/4 (Down)	18.2	250.8	25.8	15.7	234.8	30.3	100.0
? Single Helix Anchor ? EHS 1/4 (Down)				7.6	234.8	10.4	140.0
				25.3	234.8	38.1	140.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 81.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-3,279	-215.8	-109,330	-517.4	-79.2	-6,186	2,595	18	-6,168	-90.7
Comms	3,511	231.1	84,378	399.3	61.2	4,774	2,712	19	4,793	70.5
GuyBraces	1,595	105.0	52,690	249.4	38.2	2,981	3,324	23	3,004	44.2
Pole	-259	-17.1	-5,136	-24.3	-3.7	-291	3,408	24	-267	-3.9
Crossarms	-3	-0.2	-143	-0.7	-0.1	-8	95	1	-7	-0.1
Streetlights	-35	-2.3	-1,041	-4.9	-0.8	-59	171	1	-58	-0.8
Insulators	-9	-0.6	-288	-1.4	-0.2	-16	196	1	-15	-0.2
Pole Load	1,519	100.0	21,130	100.0	15.3	1,196	12,500	87	1,282	18.9
Pole Reserve Capacity			116,857		84.7	5,604			5,518	81.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 81.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	-359	-23.6	-13,813	-65.4	-10.0	-782	1,622	11	-770	-11.3
KU, UTILITY	72	4.7	-11,012	-52.1	-8.0	-623	1,268	9	-614	-9.0
Unknown, COMMUNICATION	2,069	136.2	51,234	242.5	37.1	2,899	6,107	42	2,941	43.3
Pole	-259	-17.1	-5,136	-24.3	-3.7	-291	3,408	24	-267	-3.9
<Undefined>	-3	-0.2	-143	-0.7	-0.1	-8	95	1	-7	-0.1
Totals:	1,519	100.0	21,130	100.0	15.3	1,196	12,500	87	1,282	18.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.92	15.51	0.5630	0.37	0.291	170.2	137.4	170.2	5,010	169,147	25	-1,982	167,190
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.92	15.51	0.5630	0.33	0.291	160.8	317.8	160.8	5,010	-167,421	24	-1,883	-169,281
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.58	11.51	1.1080	2.21	1.093	170.2	137.4	170.2	3,200	107,254	70	-2,976	104,348
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.58	19.51	1.1080	2.21	1.093	170.2	137.4	170.2	3,200	107,254	70	-2,976	104,348
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.58	11.51	1.1080	2.04	1.093	160.8	317.8	160.8	3,200	-106,159	66	-2,827	-108,921
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.58	19.51	1.1080	2.04	1.093	160.8	317.8	160.8	3,200	-106,159	66	-2,827	-108,921
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.25	15.51	1.1080	2.21	1.093	170.2	137.4	170.2	3,200	106,469	70	-2,954	103,586
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.25	15.51	1.1080	2.04	1.093	160.8	317.8	160.8	3,200	-105,383	66	-2,807	-108,124
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.59	6.07	0.7200	1.97	0.462	170.2	137.4	170.2	1,750	53,552	-35	-2,061	51,456
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.59	6.07	0.7200	1.83	0.462	160.8	317.8	160.8	1,750	-53,006	-33	-1,959	-54,998
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.59	45.41	0.7200	1.97	0.462	170.2	137.4	170.2	1,750	53,552	347	-2,061	51,839
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.59	45.41	0.7200	1.83	0.462	160.8	317.8	160.8	1,750	-53,006	328	-1,959	-54,637
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.59	45.41	0.7200	1.97	0.462	170.2	137.4	170.2	1,750	53,552	-418	-2,061	51,073
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.59	45.41	0.7200	1.83	0.462	160.8	317.8	160.8	1,750	-53,006	-395	-1,959	-55,360
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.70	17.13	0.3250	0.04	0.107	59.5	207.5	59.5	1,684	-50,658	-3	-211	-50,873

Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.82	7.18	0.3250	0.04	0.107	59.5	207.5	59.5	1,684	-44,437	-6	-185	-44,628
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.70	7.18	0.5630	0.67	0.291	170.2	137.4	170.2	3,410	86,998	43	-1,497	85,544
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.70	7.18	0.5630	0.60	0.291	160.8	317.8	160.8	3,410	-86,110	41	-1,423	-87,492
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	33.81	7.24	0.2570	0.44	0.067	170.2	137.4	170.2	1,216	30,227	18	-1,039	29,206
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	33.81	7.24	0.2570	0.40	0.067	160.8	317.8	160.8	1,216	-29,918	17	-987	-30,889
Totals:											-87,260	363	-38,636	-125,533	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.90	7.47	0.6570	2.37	0.190	170.3	41.2	170.3	750	22,119	36	-263	21,892
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.56	7.49	0.6570	2.32	0.190	160.8	317.8	160.8	750	-16,137	-25	-1,320	-17,482
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.56	7.49	0.6570	2.49	0.190	170.2	137.4	170.2	750	16,303	27	-1,389	14,942
CATV	CATV 1.0	Unknown,	29.17	7.52	1.3300	2.52	0.337	170.2	137.4	170.2	925	19,836	69	-2,167	17,739
CATV	CATV 1.0	Unknown,	29.17	7.52	1.3300	2.34	0.337	160.8	317.8	160.9	925	-19,634	66	-2,059	-21,628
CATV	CATV 1.0	Unknown,	28.55	7.55	1.3300	2.49	0.337	170.3	41.2	170.4	925	26,047	62	-397	25,713
CATV	CATV 1.0	Unknown,	28.55	7.55	1.3300	0.74	0.337	59.5	207.5	59.5	925	-20,010	22	-337	-20,326
Telco	TELE 1.5	Unknown,	28.13	7.58	1.5000	2.98	0.900	170.2	137.4	170.2	2,000	41,372	122	-2,284	39,210
Telco	TELE 1.5	Unknown,	28.13	7.58	1.5000	2.77	0.900	160.8	317.8	160.9	2,000	-40,950	115	-2,171	-43,006
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.99	7.65	0.6570	2.37	0.190	170.3	41.2	170.3	750	19,967	37	-237	19,766
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.99	7.65	0.6570	2.37	0.190	170.3	41.2	170.3	750	19,967	37	-237	19,766
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.99	7.65	0.6570	2.49	0.190	170.2	137.4	170.2	750	14,884	28	-1,268	13,643

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	26.70	7.66	0.6570	2.32	0.190	160.8	317.8	160.8	750	-14,573	-26	-1,192	-15,791
Telco	TELE 1.5	Unknown, COMMUNICATION	25.75	7.72	1.5000	2.96	0.900	170.3	41.2	170.4	2,000	50,793	114	-391	50,516
Telco	TELE 1.5	Unknown, COMMUNICATION	23.40	7.86	1.5000	2.98	0.900	170.2	137.4	170.2	2,000	34,405	-127	-1,900	32,379
Telco	TELE 1.5	Unknown, COMMUNICATION	23.40	7.86	1.5000	2.77	0.900	160.8	317.8	160.9	2,000	-34,054	-120	-1,805	-35,979
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.91	7.95	0.6570	2.49	0.190	170.2	137.4	170.2	750	12,085	42	-1,029	11,097
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.91	7.95	0.6570	2.32	0.190	160.8	317.8	160.8	750	-11,962	39	-978	-12,900
Telco	TELE 1.5	Unknown, COMMUNICATION	20.38	8.04	1.5000	2.98	0.900	170.2	137.4	170.2	2,000	29,969	129	-1,655	28,444
Telco	TELE 1.5	Unknown, COMMUNICATION	20.38	8.04	1.5000	2.77	0.900	160.8	317.8	160.9	2,000	-29,663	122	-1,573	-31,114
Totals:											120,763	769	-24,649	96,883	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		40.78	6.07	317.6	317.6	50.00	4.50	3.50	96.00	-27	-137	-164
Totals:										-27	-137	-164

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	35.78	4.62	360.0	360.0	45.00	24.00	20.00	3.00	36.00	34	-632	-598
General Streetlight - 3 ft. Arm	KU, UTILITY	35.78	4.62	360.0	360.0	45.00	24.00	20.00	3.00	36.00	34	-632	-598
Totals:											68	-1,264	-1,195

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension Suspension 11.50"	Power, UTILITY	45.92	0.00	50.0	50.0	11.00	4.75	11.50	23	-109	-86
Pin Pin Insulator - 5 kV	KU, UTILITY	40.96	0.00	317.6	0.0	6.00	3.50	7.50	-3	-47	-50
Pin Pin Insulator - 5 kV	KU, UTILITY	40.96	45.00	39.9	0.0	6.00	3.50	7.50	32	-47	-15
Pin Pin Insulator - 5 kV	KU, UTILITY	40.96	-45.00	235.3	0.0	6.00	3.50	7.50	-39	-47	-85

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	39.70	0.00	207.5	207.5	3.00	3.80	12.75	-5	-83	-88
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.82	0.00	207.5	207.5	2.00	3.00	3.19	-1	-14	-16
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.70	0.00	47.6	317.6	2.00	3.00	3.19	2	-14	-12
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.81	0.00	47.6	317.6	2.00	3.00	3.19	2	-14	-12
Bolt	Single Bolt	Unknown, COMMUNICATION	29.90	0.00	41.2	131.2	5.00	3.00	0.00	4	0	4
Bolt	Single Bolt	Unknown, COMMUNICATION	29.56	0.00	317.8	407.8	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	29.56	0.00	137.4	137.4	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	29.17	0.00	47.6	317.6	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	28.55	0.00	124.3	124.3	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	28.13	0.00	47.6	317.6	5.00	3.00	0.00	5	0	5
Bolt	Single Bolt	Unknown, COMMUNICATION	26.99	0.00	41.2	41.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	26.99	0.00	137.4	137.4	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	26.70	0.00	317.8	317.8	5.00	3.00	0.00	-3	0	-3
Bolt	Single Bolt	Unknown, COMMUNICATION	25.75	0.00	41.2	131.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	23.40	0.00	227.8	317.8	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.91	0.00	47.6	317.6	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	20.38	0.00	47.6	317.6	5.00	3.00	0.00	5	0	5
Totals:										44	-375	-330

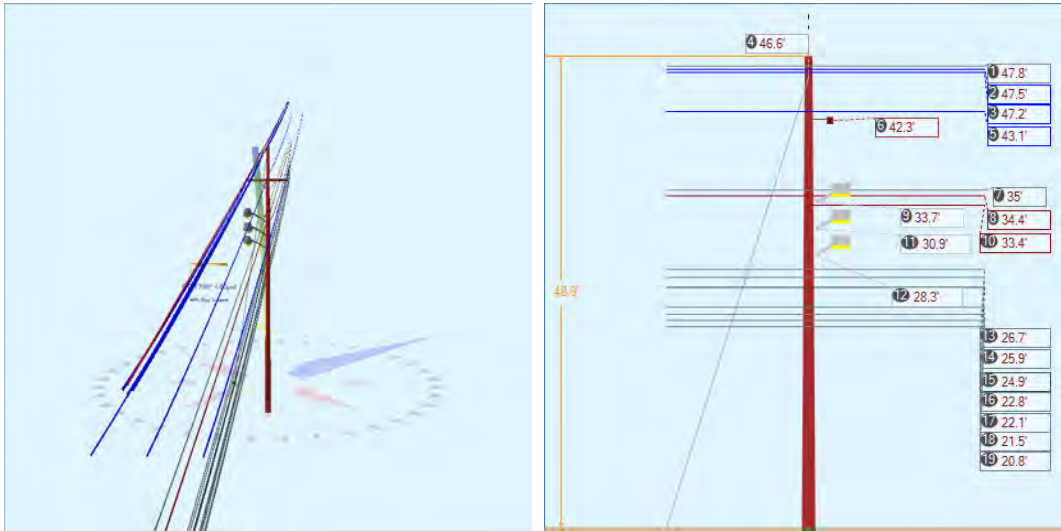
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	32.47	32.47	170.32	0.375	75.00	41.2	0.0	0.273	168.42	4.26
EHS 3/8	Down	KU, UTILITY	32.47	0.00	19.35	0.375	75.00	251.9	59.0	0.273	36.10	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	29.90	0.00	18.29	0.25	75.00	252.3	58.3	0.121	33.34	0.08
EHS 1/4	Down	Unknown, COMMUNICATION	28.55	0.00	19.21	0.25	75.00	244.5	55.9	0.121	32.68	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	26.99	0.00	18.71	0.25	75.00	248.9	55.1	0.121	31.10	0.41
EHS 1/4	Down	Unknown, COMMUNICATION	25.75	0.00	18.15	0.25	75.00	250.8	54.6	0.121	29.75	0.64

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	4,660	4,237	4,012	0	4,012	3,043	98,608
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,929	1,754	0	0	0	0	-19
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,451	1,319	161	137	84	-83	-2,452
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,147	1,043	0	0	0	0	-19
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	1,811	1,646	939	770	538	-524	-13,871
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,281	2,074	1,517	1,237	878	-862	-21,747
Totals:										2,144	5,512	1,574	60,499

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	170.32	41.2	20,000	1.00	20,000	4,237	4,012	21.2
Single Helix Anchor		18.00	19.35	251.9	20,000	1.00	20,000	1,754	0	8.8
Single Helix Anchor		18.00	18.29	252.3	20,000	1.00	20,000	1,319	161	6.6
Single Helix Anchor		18.00	19.21	244.5	20,000	1.00	20,000	1,043	0	5.2
Single Helix Anchor		18.00	18.71	248.9	20,000	1.00	20,000	1,646	939	8.2
Single Helix Anchor		18.00	18.15	250.8	20,000	1.00	20,000	2,074	1,517	10.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.54	33.93	12.33	18.25	7.96	13.54	1.60e+6	60.00	57.00	46.42	242,424	2403.91	19.23

Pole Num:	497W - 500-44	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.12	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.45	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.996790 Deg	Longitude:	-84.441361 Deg	Elevation:	873.584412591352		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	72.9	0.0
Groundline	72.9	0.0
Vertical	4.0	31.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	105,954	242.6
Groundline	105,954	242.6
GL Allowable	147,211	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	7.0	230.6		0.0	230.0	27.1	50.0
? EHS 3/8 (Down)			46.6	0.0	230.0	43.0	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 242.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,542	50.1	65,941	62.2	44.8	3,045	2,781	19	3,063	45.0
Comms	1,086	35.3	26,551	25.1	18.0	1,226	1,869	12	1,238	18.2
GuyBraces	1	0.0	49	0.1	0.0	2	15	0	2	0.0
Pole	303	9.9	7,210	6.8	4.9	333	3,694	25	358	5.3
Crossarms	2	0.1	53	0.1	0.0	3	95	1	3	0.0
Streetlights	136	4.4	5,737	5.4	3.9	265	598	4	269	4.0
Insulators	8	0.3	413	0.4	0.3	19	137	1	20	0.3
Pole Load	3,077	100.0	105,954	100.0	72.0	4,893	9,189	61	4,954	72.8
Pole Reserve Capacity			41,257		28.0	1,907			1,846	27.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 242.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	681	22.1	32,898	31.1	22.4	1,519	1,719	11	1,531	22.5
KU, UTILITY	1,006	32.7	39,199	37.0	26.6	1,810	1,745	12	1,822	26.8
Unknown, COMMUNICATION	1,086	35.3	26,594	25.1	18.1	1,228	1,936	13	1,241	18.2
Pole	303	9.9	7,210	6.8	4.9	333	3,694	25	358	5.3
<Undefined>	2	0.1	53	0.1	0.0	3	95	1	3	0.0
Totals:	3,077	100.0	105,954	100.0	72.0	4,893	9,189	61	4,954	72.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	47.83	15.54	0.5630	0.33	0.291	160.8	137.8	160.8	5,010	-79,662	27	2,304	-77,332
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	47.83	15.54	0.5630	0.46	0.291	190.3	317.5	190.3	5,010	81,238	32	2,722	83,992
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.50	11.54	1.1080	2.04	1.093	160.8	137.8	160.8	3,200	-50,528	75	3,461	-46,992
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.50	19.54	1.1080	2.04	1.093	160.8	137.8	160.8	3,200	-50,528	75	3,461	-46,992

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.50	11.54	1.1080	2.58	1.093	190.3	317.5	190.3	3,200	51,527	88	4,089	55,704
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.50	19.54	1.1080	2.58	1.093	190.3	317.5	190.3	3,200	51,527	88	4,089	55,704
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.17	15.54	1.1080	2.04	1.093	160.8	137.8	160.8	3,200	-50,173	75	3,436	-46,662
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.17	15.54	1.1080	2.58	1.093	190.3	317.5	190.3	3,200	51,165	89	4,060	55,314
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.13	6.12	0.7200	1.83	0.462	160.8	137.8	160.8	1,750	-25,105	-15	2,386	-22,734
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.13	6.12	0.7200	2.30	0.462	190.3	317.5	190.3	1,750	25,601	-18	2,818	28,401
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.13	45.41	0.7200	1.83	0.462	160.8	137.8	160.8	1,750	-25,105	407	2,386	-22,312
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.13	45.41	0.7200	2.30	0.462	190.3	317.5	190.3	1,750	25,601	481	2,818	28,901
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.13	45.41	0.7200	1.83	0.462	160.8	137.8	160.8	1,750	-25,105	-438	2,386	-23,157
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.13	45.41	0.7200	2.30	0.462	190.3	317.5	190.3	1,750	25,601	-518	2,818	27,901
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.99	7.31	0.5630	0.60	0.291	160.8	137.8	160.8	3,410	-39,663	49	1,685	-37,928
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.99	7.31	0.5630	0.82	0.291	190.3	317.5	190.3	3,410	40,447	58	1,991	42,496
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.39	7.35	0.2570	0.40	0.067	160.8	137.8	160.8	1,216	-13,902	-5	1,180	-12,728
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.39	7.35	0.3250	0.60	0.107	190.3	317.5	190.3	1,684	19,633	8	1,519	21,160
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.40	7.41	0.3250	0.60	0.107	190.3	317.5	190.5	150	1,698	8	1,475	3,181
Totals:											14,272	565	51,081	65,918	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	26.75	7.81	0.6570	2.32	0.190	160.8	137.8	160.8	750	-6,668	45	1,402	-5,221
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	26.75	7.81	0.6570	2.87	0.190	190.3	317.5	190.3	750	6,800	54	1,656	8,510
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.92	7.86	0.6570	2.32	0.190	160.8	137.8	160.8	750	-6,463	46	1,359	-5,058
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.92	7.86	0.6570	2.87	0.190	190.3	317.5	190.3	750	6,591	54	1,605	8,250
CATV	CATV 1.0 COMMUNICATION	Unknown,	24.89	7.92	1.3300	2.35	0.337	160.8	137.8	160.9	925	-7,652	81	2,064	-5,508

CATV	CATV 1.0	Unknown, COMMUNICATION	24.89	7.92	1.3300	2.92	0.337	190.3	317.5	190.3	925	7,804	95	2,438	10,337
Telco	TELE 1.5	Unknown, COMMUNICATION	22.84	8.04	1.5000	2.77	0.900	160.8	137.8	160.9	2,000	-15,184	143	2,070	-12,971
Telco	TELE 1.5	Unknown, COMMUNICATION	22.84	8.04	1.5000	3.47	0.900	190.3	317.5	190.3	2,000	15,484	169	2,445	18,098
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.09	8.09	0.6570	2.32	0.190	160.8	137.8	160.8	750	-5,507	47	1,158	-4,302
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.09	8.09	0.6570	2.87	0.190	190.3	317.5	190.3	750	5,616	56	1,368	7,039
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.46	8.13	0.6570	2.32	0.190	160.8	137.8	160.8	750	-5,351	47	1,125	-4,178
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.46	8.13	0.6570	2.87	0.190	190.3	317.5	190.3	750	5,457	56	1,329	6,842
Telco	TELE 1.5	Unknown, COMMUNICATION	20.82	8.17	1.5000	2.77	0.900	160.8	137.8	160.9	2,000	-13,839	145	1,886	-11,807
Telco	TELE 1.5	Unknown, COMMUNICATION	20.82	8.17	1.5000	3.47	0.900	190.3	317.5	190.3	2,000	14,112	171	2,228	16,512
Totals:											1,200	1,208	24,134	26,542	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		42.31	6.12	137.5	137.5	50.00	4.50	3.50	96.00	-13	66	53
Totals:										-13	66	53

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	33.69	4.89	240.0	240.0	45.00	24.00	20.00	3.00	36.00	241	652	893
General Streetlight - 3 ft. Arm	KU, UTILITY	33.69	4.89	220.0	220.0	45.00	24.00	20.00	3.00	36.00	223	652	875
General Streetlight - 3 ft. Arm	KU, UTILITY	30.95	5.06	200.0	200.0	45.00	24.00	20.00	3.00	36.00	178	599	777
General Streetlight - 3 ft. Arm	KU, UTILITY	30.95	5.06	240.0	240.0	45.00	24.00	20.00	3.00	36.00	242	599	841
General Streetlight - 3 ft. Arm	KU, UTILITY	30.95	5.06	220.0	220.0	45.00	24.00	20.00	3.00	36.00	224	599	823
General Streetlight - 3 ft. Arm	KU, UTILITY	28.28	5.22	205.0	205.0	45.00	24.00	20.00	3.00	36.00	193	547	740

General	Streetlight - 3 ft. Arm	KU, UTILITY	28.28	5.22	230.0	230.0	45.00	24.00	20.00	3.00	36.00	237	547	785
Totals:											1,539	4,196	5,735	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	47.83	0.00	225.0	225.0	11.00	4.75	11.50	26	124	150
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.50	0.00	137.5	0.0	6.00	3.50	7.50	-2	53	52
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.50	45.00	219.8	0.0	6.00	3.50	7.50	40	53	93
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.50	-45.00	55.3	0.0	6.00	3.50	7.50	-43	53	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.99	0.00	227.5	137.5	2.00	3.00	3.19	2	16	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.39	0.00	137.8	137.8	2.00	3.00	3.19	-1	16	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.39	0.00	317.3	317.3	2.00	3.00	3.19	1	16	16
Spool	Spool 3"	KU, UTILITY	33.40	0.00	317.3	317.3	2.00	3.00	3.19	1	15	16
Bolt	Three Bolt	Unknown, COMMUNICATION	26.75	0.00	227.5	137.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.92	0.00	227.5	137.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.89	0.00	227.5	137.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.84	0.00	227.5	137.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.09	0.00	227.5	137.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.46	0.00	227.5	137.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.82	0.00	227.5	137.5	5.00	3.00	0.00	6	0	6
Totals:										67	345	412

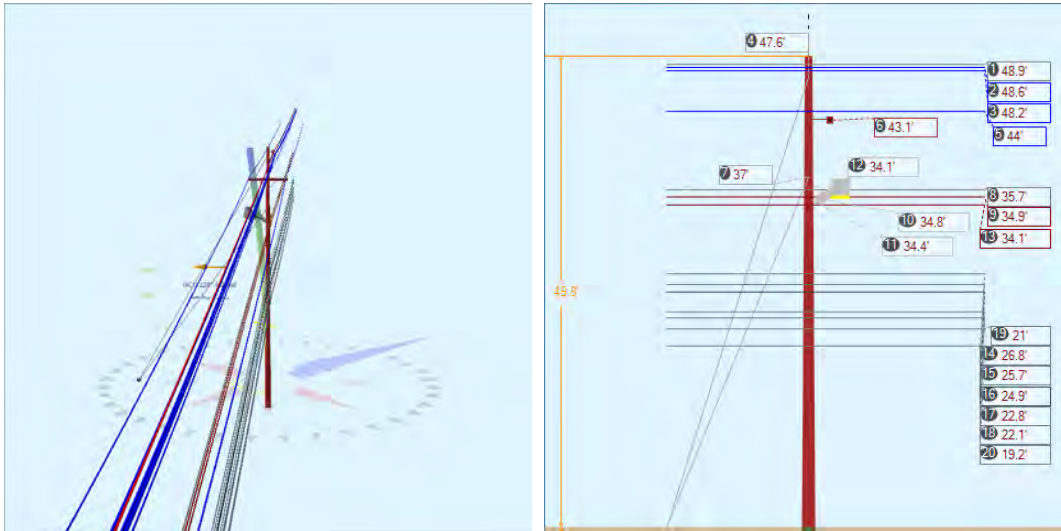
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	46.60	0.00	7.00	0.375	75.00	230.6	81.2	0.273	45.58	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,965	5,423	0	0	0	0	49
Totals:										0	0	0	49

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	7.00	230.6	20,000	1.00	20,000	5,423	0	27.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.41	34.09	12.54	16.24	7.96	13.84	1.60e+6	60.00	57.00	48.88	229,682	2297.30	25.00

Pole Num:	498W - 500-43	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.20	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.80	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.997155 Deg	Longitude:	-84.441850 Deg	Elevation:	868.677792733599		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	51.4	0.0
Groundline	51.4	0.0
Vertical	3.9	31.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	76,238	227.8
Groundline	76,238	227.8
GL Allowable	150,786	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	27.7	231.0		0.0	227.7	19.0	50.0
? EHS 3/8 (Down)			47.6	0.0	227.7	13.3	50.0
? EHS 3/8 (Down)			37.0	0.0	227.7	16.8	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	997	41.7	43,226	56.7	28.7	1,950	2,795	18	1,968	28.9
Comms	985	41.2	21,316	28.0	14.1	961	1,844	12	973	14.3
GuyBraces	2	0.1	96	0.1	0.1	4	31	0	5	0.1
Pole	318	13.3	7,696	10.1	5.1	347	3,805	25	372	5.5
Crossarms	1	0.1	53	0.1	0.0	2	95	1	3	0.0
Streetlights	79	3.3	3,583	4.7	2.4	162	342	2	164	2.4
Insulators	8	0.3	266	0.4	0.2	12	133	1	13	0.2
Pole Load	2,390	100.0	76,238	100.0	50.6	3,438	9,046	59	3,498	51.4
Pole Reserve Capacity			74,548		49.4	3,362			3,302	48.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	465	19.4	21,965	28.8	14.6	991	1,696	11	1,002	14.7
KU, UTILITY	621	26.0	25,251	33.1	16.8	1,139	1,539	10	1,149	16.9
Unknown, COMMUNICATION	985	41.2	21,272	27.9	14.1	959	1,910	13	972	14.3
Pole	318	13.3	7,696	10.1	5.1	347	3,805	25	372	5.5
<Undefined>	1	0.1	53	0.1	0.0	2	95	1	3	0.0
Totals:	2,390	100.0	76,238	100.0	50.6	3,438	9,046	59	3,498	51.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	48.92	15.53	0.5630	0.46	0.291	190.3	137.5	190.3	5,010	-1,484	-33	2,886	1,369
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	48.92	15.53	0.5630	0.31	0.291	156.1	317.9	156.1	5,010	-740	-27	2,367	1,601
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.58	11.53	1.1080	2.58	1.093	190.3	137.5	190.3	3,200	-942	-92	4,336	3,302
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.58	19.53	1.1080	2.58	1.093	190.3	137.5	190.3	3,200	-942	-92	4,336	3,302

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.58	11.53	1.1080	1.96	1.093	156.1	317.9	156.1	3,200	-469	-76	3,557	3,012
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.58	19.53	1.1080	1.96	1.093	156.1	317.9	156.1	3,200	-469	-76	3,557	3,012
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.25	15.53	1.1080	2.58	1.093	190.3	137.5	190.3	3,200	-935	-93	4,306	3,278
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.25	15.53	1.1080	1.96	1.093	156.1	317.9	156.1	3,200	-466	-76	3,532	2,990
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.96	6.13	0.7200	2.30	0.462	190.3	137.5	190.3	1,750	-466	0	2,978	2,512
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.96	6.13	0.7200	1.75	0.462	156.1	317.9	156.1	1,750	-232	0	2,443	2,211
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.96	45.42	0.7200	2.30	0.462	190.3	137.5	190.3	1,750	-466	-517	2,978	1,995
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.96	45.42	0.7200	1.75	0.462	156.1	317.9	156.1	1,750	-232	-424	2,443	1,787
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.96	45.42	0.7200	2.30	0.462	190.3	137.5	190.3	1,750	-466	518	2,978	3,030
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.96	45.42	0.7200	1.75	0.462	156.1	317.9	156.1	1,750	-232	425	2,443	2,636
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.67	7.33	0.5630	0.83	0.291	190.3	137.5	190.3	3,410	-737	-60	2,104	1,307
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.67	7.33	0.5630	0.57	0.291	156.1	317.9	156.1	3,410	-367	-49	1,726	1,310
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.92	7.37	0.3250	0.60	0.107	190.3	137.5	190.3	1,684	-356	-32	1,599	1,211
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.92	7.37	0.3250	0.40	0.107	156.1	317.9	156.1	1,684	-177	-26	1,311	1,108
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.06	7.42	0.3250	0.60	0.107	190.3	137.5	190.3	1,684	-347	-32	1,559	1,180
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.06	7.42	0.3250	0.40	0.107	156.1	317.9	156.1	1,684	-173	-26	1,279	1,080
											Totals:	-10,702	-788	54,720	43,230

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	26.79	7.86	0.6570	2.87	0.190	190.3	137.5	190.3	750	-122	-56	1,720	1,542
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	26.79	7.86	0.6570	2.24	0.190	156.1	317.9	156.1	750	-61	-46	1,411	1,304
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.65	7.93	0.6570	2.87	0.190	190.3	137.5	190.3	750	-117	-56	1,647	1,474
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.65	7.93	0.6570	2.24	0.190	156.1	317.9	156.1	750	-58	-46	1,351	1,247
CATV	CATV 1.0 COMMUNICATION	Unknown,	24.87	7.98	1.3300	2.92	0.337	190.3	137.5	190.3	925	-139	-100	2,526	2,287

CATV	CATV 1.0	Unknown, COMMUNICATION	24.87	7.98	1.3300	2.26	0.337	156.1	317.9	156.1	925	-69	-82	2,072	1,921
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.77	8.10	0.6570	2.87	0.190	190.3	137.5	190.3	750	-103	-58	1,462	1,301
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.77	8.10	0.6570	2.24	0.190	156.1	317.9	156.1	750	-52	-47	1,199	1,100
Telco	TELE 1.5	Unknown, COMMUNICATION	22.13	8.14	1.5000	3.47	0.900	190.3	137.5	190.3	2,000	-268	-177	2,456	2,011
Telco	TELE 1.5	Unknown, COMMUNICATION	22.13	8.14	1.5000	2.66	0.900	156.1	317.9	156.1	2,000	-134	-145	2,015	1,736
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.97	8.21	0.6570	2.87	0.190	190.3	137.5	190.3	750	-95	-58	1,346	1,193
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.97	8.21	0.6570	2.24	0.190	156.1	317.9	156.1	750	-47	-48	1,104	1,009
Telco	TELE 1.5	Unknown, COMMUNICATION	19.16	8.32	1.5000	3.47	0.900	190.3	137.5	190.3	2,000	-232	-181	2,126	1,713
Telco	TELE 1.5	Unknown, COMMUNICATION	19.16	8.32	1.5000	2.66	0.900	156.1	317.9	156.1	2,000	-116	-148	1,744	1,480
Totals:											-1,613	-1,248	24,180	21,318	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		43.15	6.13	317.4	317.4	50.00	4.50	3.50	96.00	0	53	53	
Totals:											0	53	53

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	34.81	4.88	240.0	240.0	45.00	24.00	20.00	3.00	36.00	236	690	927
General Streetlight - 3 ft. Arm	KU, UTILITY	34.38	4.91	200.0	200.0	45.00	24.00	20.00	3.00	36.00	214	682	896
General Streetlight - 3 ft. Arm	KU, UTILITY	34.38	4.91	180.0	180.0	45.00	24.00	20.00	3.00	36.00	163	682	844
General Streetlight - 3 ft. Arm	KU, UTILITY	34.14	4.92	220.0	220.0	45.00	24.00	20.00	3.00	36.00	240	677	917
Totals:											852	2,731	3,584

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Suspension	Suspension 11.50"	Power, UTILITY	48.92	0.00	50.0	50.0	11.00	4.75	11.50	-27	130	103
Pin	Pin Insulator - 5 kV	KU, UTILITY	43.34	0.00	317.4	0.0	6.00	3.50	7.50	0	55	55
Pin	Pin Insulator - 5 kV	KU, UTILITY	43.34	45.00	39.6	0.0	6.00	3.50	7.50	-43	55	13
Pin	Pin Insulator - 5 kV	KU, UTILITY	43.34	-45.00	235.1	0.0	6.00	3.50	7.50	43	55	98
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.67	0.00	47.4	317.4	2.00	3.00	3.19	-2	17	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.92	0.00	47.4	317.4	2.00	3.00	3.19	-2	16	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.06	0.00	47.4	317.4	2.00	3.00	3.19	-2	16	13
Bolt	Three Bolt	Unknown, COMMUNICATION	26.79	0.00	47.4	317.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.65	0.00	47.4	317.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.87	0.00	47.4	317.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.77	0.00	47.4	317.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.13	0.00	47.4	317.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.97	0.00	47.4	317.4	5.00	3.00	0.00	-7	0	-7
Bolt	Three Bolt	Unknown, COMMUNICATION	19.16	0.00	47.4	317.4	5.00	3.00	0.00	-7	0	-7
Totals:										-79	345	266

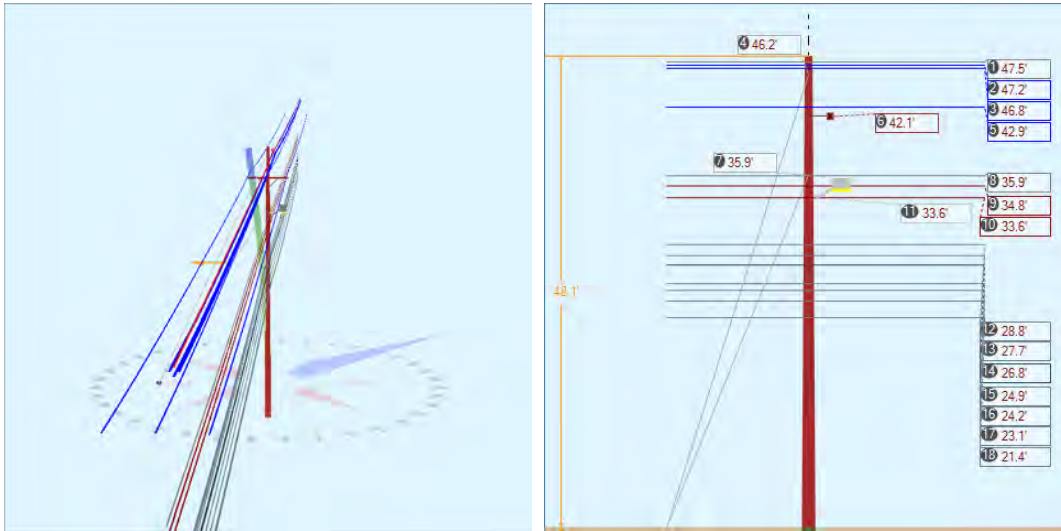
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	47.59	0.00	27.66	0.375	75.00	231.0	59.6	0.273	53.38	0.00
EHS 3/8	Down	KU, UTILITY	37.04	0.00	27.66	0.375	75.00	231.0	53.1	0.273	44.49	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	1,845	1,678	0	0	0	0	54
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,331	2,120	0	0	0	0	42
Totals:										0	0	0	96

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	27.66	231.0	20,000	1.00	20,000	3,791	0	19.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.88	34.12	12.64	16.26	7.96	13.95	1.60e+6	60.00	57.00	49.80	229,570	2319.47	25.64

Pole Num:	499W - 500-42	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.91	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.16	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.997472 Deg	Longitude:	-84.442262 Deg	Elevation:	864.035943587674		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	227.9
Groundline	0.0	227.9
Vertical	31.6	47.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	80,120	228.1
Groundline	80,120	228.1
GL Allowable	144,232	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.2	227.0		0.0	227.9	21.1	50.0
? EHS 3/8 (Down)			46.2	0.0	227.9	14.9	50.0
? EHS 3/8 (Down)			35.9	0.0	227.9	18.6	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 228.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,089	43.9	46,233	57.7	32.1	2,178	2,730	18	2,197	32.3
Comms	996	40.2	24,316	30.4	16.9	1,146	1,801	12	1,158	17.0
GuyBraces	2	0.1	91	0.1	0.1	4	29	0	4	0.1
Pole	304	12.3	7,133	8.9	5.0	336	3,602	24	360	5.3
Crossarms	1	0.0	51	0.1	0.0	2	95	1	3	0.0
Streetlights	79	3.2	2,024	2.5	1.4	95	342	2	98	1.4
Insulators	8	0.3	272	0.3	0.2	13	133	1	14	0.2
Pole Load	2,479	100.0	80,120	100.0	55.6	3,775	8,732	59	3,834	56.4
Pole Reserve Capacity			64,112		44.5	3,025			2,966	43.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 228.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	661	26.7	24,836	31.0	17.2	1,170	1,511	10	1,180	17.4
Power, UTILITY	517	20.9	23,814	29.7	16.5	1,122	1,657	11	1,133	16.7
Unknown, COMMUNICATION	996	40.2	24,285	30.3	16.8	1,144	1,867	13	1,157	17.0
Pole	304	12.3	7,133	8.9	5.0	336	3,602	24	360	5.3
<Undefined>	1	0.0	51	0.1	0.0	2	95	1	3	0.0
Totals:	2,479	100.0	80,120	100.0	55.6	3,775	8,732	59	3,834	56.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.87	6.09	0.7200	1.75	0.462	156.1	137.8	156.1	1,750	-536	-1	2,382	1,846
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.87	6.09	0.7200	2.16	0.462	182.2	318.0	182.2	1,750	196	-1	2,781	2,975
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.87	45.41	0.7200	1.75	0.462	156.1	137.8	156.1	1,750	-536	424	2,382	2,270
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.87	45.41	0.7200	2.16	0.462	182.2	318.0	182.2	1,750	196	495	2,781	3,471

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.87	45.41	0.7200	1.75	0.462	156.1	137.8	156.1	1,750	-536	-425	2,382	1,421
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.87	45.41	0.7200	2.16	0.462	182.2	318.0	182.2	1,750	196	-496	2,781	2,480
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.88	7.21	0.5630	0.57	0.291	156.1	137.8	156.1	3,410	-874	-48	1,736	814
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.88	7.21	0.5630	0.76	0.291	182.2	318.0	182.2	3,410	319	-57	2,026	2,288
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.85	7.27	0.3250	0.40	0.107	156.1	137.8	156.1	1,684	-419	-26	1,309	864
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.85	7.27	0.3250	0.55	0.107	182.2	318.0	182.2	1,684	153	-30	1,527	1,650
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.64	7.35	0.3250	0.40	0.107	156.1	137.8	156.1	1,684	-405	-26	1,263	833
Secondary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	33.64	7.35	0.3250	0.55	0.107	182.2	318.0	182.2	1,684	148	-30	1,474	1,592
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	47.50	15.51	0.5630	0.43	0.291	182.2	318.0	182.2	5,010	620	-31	2,683	3,272
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	47.50	15.51	0.5630	0.31	0.291	156.1	137.8	156.1	5,010	-1,700	-27	2,299	572
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.17	11.51	1.1080	2.43	1.093	182.2	318.0	182.2	3,200	393	-88	4,030	4,335
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.17	19.51	1.1080	2.43	1.093	182.2	318.0	182.2	3,200	393	-88	4,030	4,335
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.17	11.51	1.1080	1.96	1.093	156.1	137.8	156.1	3,200	-1,078	-76	3,453	2,300
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.17	19.51	1.1080	1.96	1.093	156.1	137.8	156.1	3,200	-1,078	-76	3,453	2,300
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.83	15.51	1.1080	2.43	1.093	182.2	318.0	182.2	3,200	390	-89	4,002	4,304
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.83	15.51	1.1080	1.96	1.093	156.1	137.8	156.1	3,200	-1,070	-76	3,429	2,282
											Totals:	-5,230	-772	52,205	46,203

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	28.84	7.64	0.6570	2.24	0.190	156.1	137.8	156.1	750	-155	-45	1,519	1,320
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	28.84	7.64	0.6570	2.71	0.190	182.2	318.0	182.2	750	56	-52	1,773	1,777
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	27.72	7.70	0.6570	2.24	0.190	156.1	137.8	156.1	750	-148	-45	1,460	1,267
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	27.72	7.70	0.6570	2.71	0.190	182.2	318.0	182.2	750	54	-52	1,704	1,706
CATV	CATV 1.0 COMMUNICATION	Unknown,	26.76	7.76	1.3300	2.26	0.337	156.1	137.8	156.1	925	-177	-79	2,229	1,973

CATV	CATV 1.0	Unknown, COMMUNICATION	26.76	7.76	1.3300	2.76	0.337	182.2	318.0	182.2	925	64	-93	2,602	2,573
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.86	7.87	0.6570	2.24	0.190	156.1	137.8	156.1	750	-133	-46	1,309	1,130
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.86	7.87	0.6570	2.71	0.190	182.2	318.0	182.2	750	49	-54	1,528	1,523
Telco	TELE 1.5	Unknown, COMMUNICATION	24.18	7.92	1.5000	2.66	0.900	156.1	137.8	156.1	2,000	-345	141	2,202	1,997
Telco	TELE 1.5	Unknown, COMMUNICATION	24.18	7.92	1.5000	3.27	0.900	182.2	318.0	182.2	2,000	126	165	2,569	2,860
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.08	7.98	0.6570	2.24	0.190	156.1	137.8	156.1	750	-124	-47	1,216	1,046
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.08	7.98	0.6570	2.71	0.190	182.2	318.0	182.2	750	45	-54	1,419	1,410
Telco	TELE 1.5	Unknown, COMMUNICATION	21.41	8.08	1.5000	2.66	0.900	156.1	137.8	156.1	2,000	-306	-144	1,950	1,499
Telco	TELE 1.5	Unknown, COMMUNICATION	21.41	8.08	1.5000	3.27	0.900	182.2	318.0	182.2	2,000	112	-168	2,275	2,219
Totals:											-882	-573	25,755	24,300	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		42.06	6.09	137.4	137.4	50.00	4.50	3.50	96.00	-1	52	51
Totals:										-1	52	51

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	33.63	4.85	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-161	667	506
General Streetlight - 3 ft. Arm	KU, UTILITY	33.63	4.85	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-161	667	506
General Streetlight - 3 ft. Arm	KU, UTILITY	33.63	4.85	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-161	667	506
General Streetlight - 3 ft. Arm	KU, UTILITY	33.63	4.85	360.0	360.0	45.00	24.00	20.00	3.00	36.00	-161	667	506
Totals:											-645	2,668	2,023

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 5 kV	KU, UTILITY	42.25	0.00	137.4	0.0	6.00	3.50	7.50	0	54	54
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.25	45.00	219.7	0.0	6.00	3.50	7.50	43	54	97
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.25	-45.00	55.1	0.0	6.00	3.50	7.50	-43	54	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.88	0.00	47.4	137.4	2.00	3.00	3.19	-2	17	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.85	0.00	47.4	137.4	2.00	3.00	3.19	-2	16	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.64	0.00	47.4	137.4	2.00	3.00	3.19	-2	16	13
Bolt	Three Bolt	Unknown, COMMUNICATION	28.84	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	27.72	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	26.76	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.86	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.18	0.00	227.4	137.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.08	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.41	0.00	47.4	137.4	5.00	3.00	0.00	-6	0	-6
Suspension	Suspension 11.50"	Power, UTILITY	47.50	0.00	50.0	50.0	11.00	4.75	11.50	-27	126	99
Totals:										-65	337	272

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	46.21	0.00	22.23	0.375	75.00	227.0	64.1	0.273	49.63	0.00
EHS 3/8	Down	KU, UTILITY	35.92	0.00	22.23	0.375	75.00	227.0	58.0	0.273	40.53	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,061	1,874	0	0	0	0	51
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,581	2,346	0	0	0	0	40
Totals:										0	0	0	91

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	22.23	227.0	20,000	1.00	20,000	4,214	0	21.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.58	34.14	12.44	15.87	7.96	13.74	1.60e+6	60.00	57.00	48.09	219,823	2182.94	25.00

39' 6" - 413W - 21661-19

30' 10" - Lowest Power

23' 9" - Proposed Metronet

21' 2" - Highest Tel Cable

2' - Base offset

Base

40' 9" - 414W - 21661-18

30' 9" - Lowest Power

24' 10" - Proposed Metronet

24' 6" - Proposed Metronet

21' 4" - Highest Tel Cable

4' - Base offset

Base

WIN7044

37' 11" - 415W - 21661-17

35' 5" - Lowest Power

23' 4" - Proposed Metronet

21' 2" - Highest Tel Cable

4' - Base offset

Base

WIN7045

37' 9" - 416W - 21661-16

35' 6" - Lowest Power

25' 4" - Proposed Metronet

22' 10" - Highest Tel Cable

4' - Base offset

Base

37' 9" - 417W - 21661-15

35' 10" - Lowest Power

24' 2" - Proposed Metronet

21' 8" - Highest Tel Cable

4' - Base offset

Base

WIN7047



36' 3" - 418W - 21661-14

29' 4" - Lowest Power

25' 11" - Proposed Metronet

19' 5" - Highest Tel Drop

17' 3" - Highest Tel Cable

4' - Base offset

Base

37' 8" - 419W - 21661-13

26' 2" - Lowest Power

23' - Highest Tel Cable

22' 9" - Proposed Metronet

4' - Base offset

Base

38' - 421W - 21661-11

25' 9" - Lowest Power

23' 1" - Highest Tel Cable

22' 5" - Proposed Metronet

4' - Base offset

Base

37' - 422W - 21661-10

26' 10" - Lowest Power

24' 8" - Proposed Metronet

22' 1" - Highest Tel Cable

4' - Base offset

Base

38' 9" - 423W - NT

37' 3" - Lowest Power

25' 1" - Proposed Metronet

22' 1" - Highest Tel Cable

22' 1" - Base offset

Base

WIN7052

38' 9" - 424W - NT

37' - Lowest Power

24' 10" - Proposed Metronet

21' 11" - Base offset

21' 11" - Highest Tel Cable

Base

37' 5" - 425W - 21661-7

33' 10" - Lowest Power

23' 6" - Proposed Metronet

20' 7" - Highest Tel Cable

4' - Base offset

Base

WIN7054

37' 8" - 426W - 21661-6

34' 2" - Lowest Power

24' 4" - Proposed Metronet

21' 4" - Highest Tel Cable

4' - Base offset

Base

37' 5" - 427W - 21661-5

35' 10" - Lowest Power

24' 9" - Proposed Metronet

21' 9" - Highest Tel Cable

4' - Base offset

Base

WIN7056

38' - 428W - 21661-4

35' 3" - Lowest Power

23' 10" - Proposed Metronet

20' 11" - Highest Tel Cable

4' - Base offset

Base

38' 4" - 429W - 21661-3

28' 3" - Lowest Power

24' 4" - Proposed Metronet

21' 4" - Highest Tel Cable

4' - Base offset

Base

38' 1" - 430W - 21661-2

26' 6" - Lowest Power

23' 9" - Proposed Metronet

22' - Highest Tel Cable

4' - Base offset

Base

37' 3" - 431W - 21661-1

28' 5" - Lowest Power

25' 1" - Proposed Metronet

24' 9" - Proposed Metronet

22' 6" - Highest Tel Cable

4' - Base offset

Base

53' 3" - 493W - NT

34' 2" - Lowest Power

30' 10" - Proposed Metronet

21' 11" - Highest Tel Cable

4' - Base offset

Base

WIN7061



46' 9" - 494W - NT

31' 1" - Lowest Power

27' 8" - Proposed Metronet

4' - Base offset

Base



47' 1" - 495W - 500-46

34' 3" - Lowest Power

26' 10" - Proposed Metronet

21' 3" - Highest Tel Cable

4' - Base offset

Base

46' 5" - 496W - 500-44-50

33' 10" - Lowest Power

30' 6" - Proposed Metronet

26' 7" - Highest Tel Cable



4' - Base offset

Base

48' 11" - 497W - 500-44

28' 9" - Proposed Metronet

28' 3" - Lowest Power

22' 10" - Highest Tel Cable

4' - Base offset

Base

WIN7065



49' 10" - 498W - 500-43

34' 1" - Lowest Power

28' 9" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

48' 1" - 499W - 500-42

33' 8" - Lowest Power

30' 4" - Proposed Metronet

24' 10" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 3:33 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX-FR02-03W
Attachments: Map Key.pdf; LXFR02-03W MAP.PDF; O-Calcs.pdf; Pole Photos.pdf; LX-FR02-03W - Windstream Inventory Report.pdf; LX-FR02-03W - METRONET POLE INVENTORY REPORT.XLSX

Good Morning,
Please see attached for proposal titled LX-FR02-03W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



505W	500-36		WS	
506W	500-35-20	50/ 2	WS	1=None
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
506W	500-35-20		WS	
507W	500-35	50/ 2	WS	3=Elec
507W	500-35		WS	
507W	500-35		WS	
507W	500-35		WS	
507W	500-35		WS	
507W	500-35		WS	
507W	500-35		WS	
507W	500-35		WS	
507W	500-35		WS	
507W	500-35		WS	
509W	500-34	50/ 2	WS	1=None
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
509W	500-34		WS	
510W	500-33	50/ 2	WS	2=Comms
510W	500-33		WS	
510W	500-33		WS	
510W	500-33		WS	
510W	500-33		WS	
510W	500-33		WS	
510W	500-33		WS	
510W	500-33		WS	

510W	500-33		WS	
510W	500-33		WS	
510W	500-33		WS	
511W	500-32	50/ 2	WS	1=None
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
511W	500-32		WS	
512W	26982-3160	55/ 2	WS	4=Comms & Ele
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
512W	26982-3160		WS	
513W	26982-3150	60/ 2	WS	2=Comms
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
513W	26982-3150		WS	
514W	26982-3130	60/ 2	WS	1=None
514W	26982-3130		WS	

514W	26982-3130		WS	
514W	26982-3130		WS	
514W	26982-3130		WS	
514W	26982-3130		WS	
514W	26982-3130		WS	
514W	26982-3130		WS	
514W	26982-3130		WS	
514W	26982-3130		WS	
515W	26982-3120	50/ 2	WS	1=None
515W	26982-3120		WS	
515W	26982-3120		WS	
515W	26982-3120		WS	
515W	26982-3120		WS	
515W	26982-3120		WS	
515W	26982-3120		WS	
515W	26982-3120		WS	
516W	26982-3110	50/ 2	WS	3=Elec
516W	26982-3110		WS	
516W	26982-3110		WS	
516W	26982-3110		WS	
516W	26982-3110		WS	
516W	26982-3110		WS	
516W	26982-3110		WS	
516W	26982-3110		WS	
517W	26982-3104	50/ 2	WS	2=Comms
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
517W	26982-3104		WS	
518W	26982-3190	50/ 2	WS	2=Comms
518W	26982-3190		WS	
518W	26982-3190		WS	
518W	26982-3190		WS	
518W	26982-3190		WS	
518W	26982-3190		WS	
518W	26982-3190		WS	
518W	26982-3190		WS	
518W	26982-3190		WS	
518W	26982-3190		WS	

519W	26982-3098	55/ 2	WS	1=None
519W	26982-3098		WS	
519W	26982-3098		WS	
519W	26982-3098		WS	
519W	26982-3098		WS	
519W	26982-3098		WS	
519W	26982-3098		WS	
519W	26982-3098		WS	
519W	26982-3098		WS	
519W	26982-3098		WS	
520W	26982-3094	50/ 2	WS	3=Elec
520W	26982-3094		WS	
520W	26982-3094		WS	
520W	26982-3094		WS	
520W	26982-3094		WS	
520W	26982-3094		WS	
520W	26982-3094		WS	
520W	26982-3094		WS	
520W	26982-3094		WS	
520W	26982-3094		WS	
521W	26982-3090	50/ 2	WS	3=Elec
521W	26982-3090		WS	
521W	26982-3090		WS	
521W	26982-3090		WS	
521W	26982-3090		WS	
521W	26982-3090		WS	
521W	26982-3090		WS	
521W	26982-3090		WS	
521W	26982-3090		WS	
521W	26982-3090		WS	
522W	26982-3050	50/ 2	WS	1=None
522W	26982-3050		WS	
522W	26982-3050		WS	
522W	26982-3050		WS	
522W	26982-3050		WS	
522W	26982-3050		WS	
522W	26982-3050		WS	
522W	26982-3050		WS	
523W	26982-3040	60/ 1	WS	1=None
523W	26982-3040		WS	
523W	26982-3040		WS	
523W	26982-3040		WS	
523W	26982-3040		WS	
523W	26982-3040		WS	
523W	26982-3040		WS	
523W	26982-3040		WS	
523W	26982-3040		WS	

Lower Windstream	37.99951	-84.44453	Windstream
101 SAND LAKE DR, 11	37.99975	-84.44477	KU
	37.99975	-84.44477	KU
	37.99975	-84.44477	KU
	37.99975	-84.44477	KU
	37.99975	-84.44477	KU
	37.99975	-84.44477	KU
	37.99975	-84.44477	KU
	37.99975	-84.44477	Metronet
	37.99975	-84.44477	Level 3
	37.99975	-84.44477	Charter
	37.99975	-84.44477	Windstream
	37.99975	-84.44477	Windstream
101 SAND LAKE DR, 11	37.99977	-84.44481	KU
	37.99977	-84.44481	KU
	37.99977	-84.44481	KU
	37.99977	-84.44481	KU
Extend secondary riser	37.99977	-84.44481	KU
	37.99977	-84.44481	Metronet
	37.99977	-84.44481	Level 3
	37.99977	-84.44481	Charter
	37.99977	-84.44481	Windstream
	37.99977	-84.44481	Windstream
3270 RICHMOND RD	38.00009	-84.44515	KU
	38.00009	-84.44515	KU
	38.00009	-84.44515	KU
	38.00009	-84.44515	KU
	38.00009	-84.44515	KU
	38.00009	-84.44515	KU
	38.00009	-84.44515	Metronet
	38.00009	-84.44515	Level 3
	38.00009	-84.44515	Level 3
	38.00009	-84.44515	Charter
	38.00009	-84.44515	Windstream
	38.00009	-84.44515	Windstream
3270 RICHMOND RD	38.00047	-84.44552	KU
	38.00047	-84.44552	KU
	38.00047	-84.44552	KU
	38.00047	-84.44552	KU
	38.00047	-84.44552	KU
	38.00047	-84.44552	Metronet
Lower Level 3	38.00047	-84.44552	Level 3
Lower Level 3	38.00047	-84.44552	Level 3

Lower Charter	38.00047	-84.44552	Charter
Lower Windstream	38.00047	-84.44552	Windstream
Lower Windstream	38.00047	-84.44552	Windstream
101 PROSPEROUS PL,	38.00075	-84.44584	KU
	38.00075	-84.44584	KU
	38.00075	-84.44584	KU
	38.00075	-84.44584	KU
	38.00075	-84.44584	KU
	38.00075	-84.44584	Metronet
	38.00075	-84.44584	Level 3
	38.00075	-84.44584	Level 3
	38.00075	-84.44584	Charter
	38.00075	-84.44584	Windstream
	38.00075	-84.44584	Windstream
3071 RICHMOND RD	38.00109	-84.44617	KU
	38.00109	-84.44617	KU
	38.00109	-84.44617	KU
	38.00109	-84.44617	KU
	38.00109	-84.44617	KU
	38.00109	-84.44617	KU
Extend secondary riser	38.00109	-84.44617	KU
	38.00109	-84.44617	Metronet
Lower Level 3	38.00109	-84.44617	Level 3
Lower Level 3	38.00109	-84.44617	Level 3
Lower Level 3	38.00109	-84.44617	Level 3
	38.00109	-84.44617	Charter
	38.00109	-84.44617	Windstream
	38.00109	-84.44617	Windstream
	38.00109	-84.44617	Windstream
3043 RICHMOND RD	38.00156	-84.44671	KU
	38.00156	-84.44671	KU
	38.00156	-84.44671	KU
	38.00156	-84.44671	KU
	38.00156	-84.44671	KU
	38.00156	-84.44671	KU
	38.00156	-84.44671	KU
	38.00156	-84.44671	Metronet
Lower Level 3	38.00156	-84.44671	Level 3
Lower Charter	38.00156	-84.44671	Charter
Lower Windstream	38.00156	-84.44671	Windstream
Lower Windstream	38.00156	-84.44671	Windstream
3029 RICHMOND RD	38.00190	-84.44697	KU
	38.00190	-84.44697	KU

	38.00190	-84.44697	KU	
	38.00190	-84.44697	KU	
	38.00190	-84.44697	Metronet	
	38.00190	-84.44697	Level 3	
	38.00190	-84.44697	Charter	
	38.00190	-84.44697	Windstream	
	38.00190	-84.44697	Windstream	
	3110 RICHMOND RD	38.00218	-84.44730	KU
		38.00218	-84.44730	KU
		38.00218	-84.44730	KU
		38.00218	-84.44730	Metronet
		38.00218	-84.44730	Level 3
		38.00218	-84.44730	Charter
		38.00218	-84.44730	Windstream
		38.00218	-84.44730	Windstream
	3100 RICHMOND RD	38.00258	-84.44770	KU
Raise Secondary		38.00258	-84.44770	KU
		38.00258	-84.44770	Metronet
		38.00258	-84.44770	Level 3
		38.00258	-84.44770	Charter
		38.00258	-84.44770	Windstream
		38.00258	-84.44770	Windstream
		38.00258	-84.44770	Windstream
	3100 RICHMOND RD	38.00271	-84.44784	KU
		38.00271	-84.44784	KU
		38.00271	-84.44784	KU
		38.00271	-84.44784	KU
		38.00271	-84.44784	KU
		38.00271	-84.44784	KU
		38.00271	-84.44784	Metronet
Lower Level 3		38.00271	-84.44784	Level 3
Lower Charter		38.00271	-84.44784	Charter
Lower Windstream		38.00271	-84.44784	Windstream
Lower Windstream		38.00271	-84.44784	Windstream
	3100 RICHMOND RD	38.00287	-84.44802	KU
		38.00287	-84.44802	KU
		38.00287	-84.44802	KU
		38.00287	-84.44802	KU
		38.00287	-84.44802	Metronet
Lower Level 3		38.00287	-84.44802	Level 3
Lower Charter		38.00287	-84.44802	Charter
Lower Windstream		38.00287	-84.44802	Windstream
Lower Windstream		38.00287	-84.44802	Windstream

	3098 RICHMOND RD	38.00315	-84.44827	KU
		38.00315	-84.44827	KU
		38.00315	-84.44827	KU
		38.00315	-84.44827	KU
		38.00315	-84.44827	Metronet
		38.00315	-84.44827	Level 3
		38.00315	-84.44827	Charter
		38.00315	-84.44827	Windstream
		38.00315	-84.44827	Windstream
	2965 RICHMOND RD	38.00353	-84.44868	KU
		38.00353	-84.44868	KU
Extend secondary riser		38.00353	-84.44868	KU
Raise secondary drip loop		38.00353	-84.44868	KU
		38.00353	-84.44868	Metronet
		38.00353	-84.44868	Level 3
		38.00353	-84.44868	Charter
		38.00353	-84.44868	Windstream
		38.00353	-84.44868	Windstream
	3090 RICHMOND RD	38.00391	-84.44905	KU
		38.00391	-84.44905	KU
		38.00391	-84.44905	KU
Extend secondary riser		38.00391	-84.44905	KU
		38.00391	-84.44905	Metronet
		38.00391	-84.44905	Level 3
		38.00391	-84.44905	Charter
		38.00391	-84.44905	Windstream
		38.00391	-84.44905	Windstream
	3080 RICHMOND RD,	38.00426	-84.44941	KU
		38.00426	-84.44941	KU
		38.00426	-84.44941	Metronet
		38.00426	-84.44941	Level 3
		38.00426	-84.44941	Charter
		38.00426	-84.44941	Windstream
		38.00426	-84.44941	Windstream
	30.60 3030 RICHMOND RD	38.00464	-84.44984	KU
		38.00464	-84.44984	KU
		38.00464	-84.44984	KU
		38.00464	-84.44984	KU
		38.00464	-84.44984	KU
		38.00464	-84.44984	KU
		38.00464	-84.44984	Metronet
		38.00464	-84.44984	Level 3

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
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Primary	43'9"			Y	N			B: Residential/Over Driveways		
Primary	39'10"			Y	N					
Primary	39'0"			Y	N					
Primary	34'9"			Y	N					
Neutral	31'1"			Y	N					
Secondary	30'4"			Y	N					
Secondary	29'7"			Y	N					
Secondary	28'10"			Y	N					
Streetlight	27'7"			Y	N					
Streetlight Drip Loop	27'0"			Y	N					
Communication		25'6"		Y	N					
Communication	25'0"	23'6"	64	Y	N					
Communication	24'2"	22'6"		Y	N					
Communication	23'6"	21'6"		Y	N					
Communication	22'10"	20'6"		Y	N					
Communication	21'10"	19'6"		Y	N					
Communication	20'9"	18'6"		Y	N					
Communication	20'3"	18'6"	16'6"	Y	N					
Primary	44'11"			N	N			D: Pedestrian Only 9.5'		
Primary	40'1"			N	N					
Neutral	34'5"			N	N					
Secondary	33'0"			N	N					
Secondary Riser	31'3"			N	N					
Secondary Drip Loop	30'9"			N	N					
Streetlight	30'3"			N	N					
Secondary Riser	28'7"	30'2"		N	N					
Communication		26'10"		N	N					
Communication	24'10"		52	N	N					
Communication	24'2"			N	N					
Communication	23'1"			N	N					
Communication	22'2"			N	N					
Communication	21'8"			N	N					
Communication	20'5"			N	N					
Communication	18'11"	13'11"		N	N					

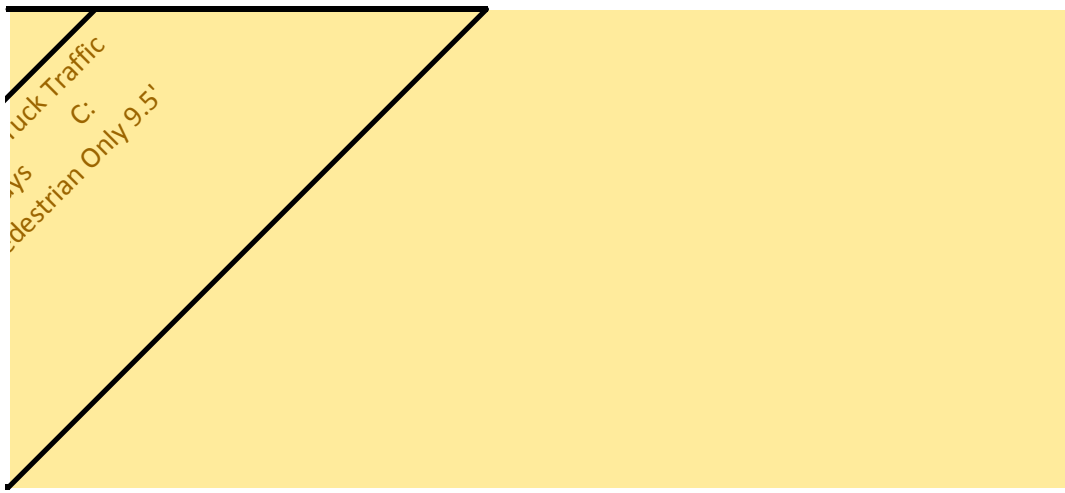
Primary	44'0"			Y	N	D: Pedestrian Only 9.5'
Primary	39'5"			Y	N	
Neutral	33'10"			Y	N	
Secondary	33'2"			Y	N	
Secondary Riser	32'0"	32'2"		Y	N	
Streetlight X 4	29'4"	29'10"		Y	N	
Communication		28'10"		Y	N	
Communication	26'10"		45	Y	N	
Communication	26'0"			Y	N	
Communication	25'3"			Y	N	
Communication	23'1"			Y	N	
Communication	22'4"			Y	N	
Communication	21'4"			Y	N	
Communication	19'8"	16'11"		Y	N	
Primary	47'7"			Y	N	D: Pedestrian Only 9.5'
Neutral	45'0"			Y	N	
Primary	42'3"			Y	N	
Neutral	36'10"			Y	N	
Secondary Riser	35'4"	36'9"		Y	N	
Communication		33'5"		Y	N	
Communication	31'5"		69	Y	N	
Communication	30'6"			Y	N	
Communication	29'10"			Y	N	
Communication	25'11"			Y	N	
Communication	24'6"			Y	N	
Communication	23'3"	19'2"		Y	N	
Primary	47'7"			Y	N	B:Residential/Over Driveways
Primary	45'0"			Y	N	
Primary	40'5"			Y	N	
Primary	37'2"			Y	N	
Neutral	32'8"			Y	N	
Communication		29'4"		Y	N	
Communication	29'7"	27'4"	54	Y	N	
Communication	28'10"	26'4"		Y	N	
Communication	27'8"	25'4"		Y	N	
Communication	26'0"	24'4"		Y	N	
Communication	24'8"	23'4"		Y	N	
Communication	24'1"	23'0"	23'8"	Y	N	
Primary	43'2"			N	N	D: Pedestrian Only 9.5'
Primary	38'4"			N	N	
Neutral	32'9"			N	N	
Secondary	32'1"			N	N	
Communication		28'9"		N	N	
Communication	28'5"	26'9"	58	N	N	
Communication	27'4"	25'9"		N	N	
Communication	26'1"	24'9"		N	N	

Communication	24'3"	23'9"	18'6"	N	N	
Primary	42'5"			N	N	D: Pedestrian Only 9.5'
Transformer	35'8"			N	N	
Neutral	35'1"			N	N	
Secondary	34'2"			N	N	
Secondary Riser	33'9"			N	N	
Secondary	33'5"			N	N	
Secondary Riser	32'9"			N	N	
Communication		29'5"		N	N	
Communication	27'6"		74	N	N	
Communication	26'7"			N	N	
Communication	24'1"			N	N	
Communication	22'7"		21'9"	N	N	
Primary	40'1"			Y	N	B:Residential/Over Driveways
Neutral	38'4"			Y	N	
Neutral	35'3"			Y	N	
Secondary	33'9"			Y	N	
Secondary Riser	31'0"	33'9"		Y	N	
Communication		30'5"		Y	N	
Communication	28'5"		75	Y	N	
Communication	27'4"			Y	N	
Communication	24'7"			Y	N	
Communication	23'8"		19'11"	Y	N	
Primary	40'7"			N	N	D: Pedestrian Only 9.5'
Transformer	34'4"			N	N	
Neutral	33'1"			N	N	
Secondary	32'2"			N	N	
Secondary	31'2"			N	N	
Secondary Riser	28'11"			N	N	
Communication		25'6"		N	N	
Communication	23'6"		47	N	N	
Communication	23'3"			N	N	
Communication	22'3"			N	N	
Communication	20'9"			N	N	
Communication	19'9"		12'11"	N	N	
Primary	41'1"			N	N	D: Pedestrian Only 9.5'
Transformer	32'2"			N	N	
Neutral	30'10"			N	N	
Secondary Riser	30'0"			N	N	
Secondary	29'11"			N	N	
Communication		26'7"		N	N	
Communication	25'7"	24'7"	50	N	N	
Communication	24'7"	23'7"		N	N	

Communication	23'7"	22'7"		N	N	
Communication	22'4"	21'7"		N	N	
Communication	21'2"	20'7"	20'4"	N	N	
Primary	41'11"			Y	N	B:Residential/Over Driveways
Neutral	36'4"			Y	N	
Secondary	35'3"			Y	N	
Secondary Riser	34'11"			Y	N	
Secondary Drip Loop	34'1"			Y	N	
Communication		30'9"		Y	N	
Communication	28'9"		84	Y	N	
Communication	28'1"			Y	N	
Communication	27'4"			Y	N	
Communication	25'10"			Y	N	
Communication	24'9"		23'1"	Y	N	
Primary	46'1"			Y	N	D: Pedestrian Only 9.5'
Primary	42'1"			Y	N	
Neutral	38'11"			Y	N	
Neutral	36'1"			Y	N	
Secondary	35'2"			Y	N	
Streetlight	34'7"			Y	N	
Secondary Riser	34'1"	34'9"		Y	N	
Communication		31'5"		Y	N	
Communication	31'2"	29'5"	57	Y	N	
Communication	30'9"	29'5"		Y	N	
Communication	30'1"	28'5"		Y	N	
Communication	27'5"			Y	N	
Communication	26'5"			Y	N	
Communication	26'0"			Y	N	
Communication	24'7"		27'2"	Y	N	
Primary	42'8"			N	N	D: Pedestrian Only 9.5'
Primary	38'1"			N	N	
Neutral	32'4"			N	N	
Neutral	31'6"			N	N	
Secondary	30'8"			N	N	
Secondary	30'2"			N	N	
Secondary Drip Loop	29'6"			N	N	
Communication		26'0"		N	N	
Communication	26'0"	23'11"	54	N	N	
Communication	23'11"	23'0"		N	N	
Communication	23'11"	22'0"		N	N	
Communication	23'0"	21'0"	22'1"	N	N	
Primary	48'6"			N	N	D: Pedestrian Only 9.5'
Neutral	47'9"			N	N	

Secondary	39'0"			N	N	
Secondary	37'4"			N	N	
Communication		34'0"		N	N	
Communication	32'0"		52	N	N	
Communication	30'11"			N	N	
Communication	29'3"			N	N	
Communication	28'4"		29'3"	N	N	
Primary	41'9"			N	N	B:Residential/Over Driveways
Secondary	33'0"			N	N	
Streetlight	31'1"			N	N	
Communication		28'10"		N	N	
Communication	26'10"		151	N	N	
Communication	25'9"			N	N	
Communication	24'8"			N	N	
Communication	23'8"		19'11"	N	N	
Primary	39'3"			N	N	D: Pedestrian Only 9.5'
Secondary	28'0"	28'6"		N	N	
Communication		25'2"		N	N	
Communication	23'2"		32	N	N	
Communication	22'1"			N	N	
Communication	20'10"			N	N	
Communication	19'10"		19'10"	N	N	
Communication	19'4"			N	N	
Primary	41'2"			Y	N	D: Pedestrian Only 9.5'
Transformer	29'9"			Y	N	
Secondary	28'10"			Y	N	
Secondary Riser	28'6"			Y	N	
Secondary	28'4"			Y	N	
Secondary	27'8"			Y	N	
Communication		24'4"		Y	N	
Communication	23'6"	22'4"	55	Y	N	
Communication	22'11"	21'4"		Y	N	
Communication	21'11"	20'4"		Y	N	
Communication	20'9"	19'4"	20'10"	Y	N	
Primary	42'3"			N	N	B:Residential/Over Driveways
Secondary	31'0"			N	N	
Secondary Riser	29'8"			N	N	
Secondary Riser	29'3"			N	N	
Communication		25'10"		N	N	
Communication	24'6"	23'10"	155	N	N	
Communication	23'7"	22'10"		N	N	
Communication	22'3"	21'10"		N	N	
Communication	21'2"	20'10"	23'8"	N	N	

Primary	43'0"		Y	N	D: Pedestrian Only 9.5'
Primary Riser	35'11"		Y	N	
Secondary	31'7"		Y	N	
Secondary Riser	31'4"		Y	N	
Communication		27'7"	Y	N	
Communication	25'7"		53	Y	N
Communication	24'10"		Y	N	
Communication	23'5"		Y	N	
Communication	22'5"	21'3"	Y	N	
Primary	38'11"		Y	N	D: Pedestrian Only 9.5'
Secondary	30'4"		Y	N	
Secondary Riser	28'9"	29'6"	Y	N	
Secondary Drip Loop	28'1"	29'6"	Y	N	
Communication		26'2"	Y	N	
Communication	24'2"		49	Y	N
Communication	23'6"		Y	N	
Communication	22'8"		Y	N	
Communication	21'9"	21'5"	Y	N	
Primary	40'5"		N	N	D: Pedestrian Only 9.5'
Transformer	31'6"		N	N	
Secondary	30'10"		N	N	
Secondary Riser	29'11"	30'7"	N	N	
Communication		27'3"	N	N	
Communication	25'3"		64	N	N
Communication	24'4"		N	N	
Communication	23'1"		N	N	
Communication	22'2"	20'9"	N	N	
Primary	44'9"		N	N	D: Pedestrian Only 9.5'
Secondary	34'11"		N	N	
Communication		26'6"	N	N	
Communication	24'6"		106	N	N
Communication	23'6"		N	N	
Communication	22'5"		N	N	
Communication	21'5"	20'8"	N	N	
Primary	49'4"		N	N	B:Residential/Over Driveways
Primary	45'6"		N	N	
Down Guy	44'1"		N	N	
Neutral	41'3"		N	N	
Secondary	36'10"		N	N	
Secondary Riser	35'6"		N	N	
Communication		27'8"	N	N	
Communication	25'8"		246	N	N



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #:

LX-FR02-03W

Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone # LAUREN SANDEFUR 812-213-1328
 EMAIL ADDRESS LAUREN.SANDEFUR@METRONETINC.COM
 Street Address, City, ST, ZIP of Firm Applying 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: *LSandefur 3/18/18*

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream To Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmnts on pole	# & type of Attachmnts	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	500-41	500W	3320 RICHMOND RD, Lexington, KY 40509	55, 2, WXM	22'10"	N/A	27'0"	(1)Fiber/Strand			
2	500-40	501W	3320 RICHMOND RD, Lexington, KY 40509	55, 2, WXM	22'10"	N/A	28'7"	(1)Fiber/Strand			
3	500-39	502W	3310 RICHMOND RD, Lexington, KY 40509	55, 2, WXM	23'1"	N/A	29'4"	(1)Fiber/Strand			
4	NT	503W	120 SAND LAKE DR, Lexington, KY 40509	55, 2, WXM	25'11"	N/A	35'4"	(1)Fiber/Strand			
5	500-37	504W	104 SAND LAKE DR, Lexington, KY 40509	55, 2, WXM	27'8"	N/A	32'8"	(1)Fiber/Strand			
6	500-36	505W	101 SAND LAKE DR, 110, Lexington, KY 40509	55, 2, WXM	26'1"	N/A	32'1"	(1)Fiber/Strand			
7	500-35-20	506W	101 SAND LAKE DR, 110, Lexington, KY 40509	50, 2, WXM	24'1"	N/A	32'9"	(1)Fiber/Strand			
8	500-35	507W	101 SAND LAKE DR, 110, Lexington, KY 40509	50, 2, WXM	24'7"	23'9"	31'0"	(1)Fiber/Strand			
9	500-34	509W	3270 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	20'9"	N/A	28'11"	(1)Fiber/Strand			
10	500-33	510W	3270 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'4"	N/A	29'11"	(1)Fiber/Strand			
11	500-32	511W	101 PROSPEROUS PL, 290, Lexington, KY 40509	50, 2, WXM	25'10"	N/A	34'1"	(1)Fiber/Strand			
12	26982-3160	512W	3071 RICHMOND RD, Lexington, KY 40509	55, 2, WXM	26'5"	N/A	34'1"	(1)Fiber/Strand			
13	26982-3150	513W	3043 RICHMOND RD, Lexington, KY 40509	60, 2, WXM	23'11"	N/A	29'6"	(1)Fiber/Strand			
14	26982-3130	514W	3029 RICHMOND RD, Lexington, KY 40509	60, 2, WXM	29'3"	N/A	37'4"	(1)Fiber/Strand			
15	26982-3120	515W	3110 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	24'8"	N/A	31'1"	(1)Fiber/Strand			
16	26982-3110	516W	3100 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	20'10"	N/A	28'0"	(1)Fiber/Strand			
17	26982-3104	517W	3100 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	21'11"	N/A	27'8"	(1)Fiber/Strand			
18	26982-3190	518W	3100 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'3"	21'8"	29'3"	(1)Fiber/Strand			
19	26982-3098	519W	3098 RICHMOND RD, Lexington, KY 40509	55, 2, WXM	23'5"	N/A	31'4"	(1)Fiber/Strand			

20	26982-3094	520W	2965 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'8"	N/A	28'1"		(1)Fiber/Strand		
21	26982-3090	521W	3090 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	23'1"	N/A	29'11"		(1)Fiber/Strand		
22	26982-3050	522W	3080 RICHMOND RD, 120, Lexington, KY 4	50, 2, WXM	22'5"	N/A	34'11"		(1)Fiber/Strand		
23	26982-3040	523W	3030 RICHMOND RD, Lexington, KY 40509	60, 1, WXM	23'6"	N/A	35'6"		(1)Fiber/Strand		
24	26982-3024	524W	3030 RICHMOND RD, Lexington, KY 40509	60, 2, WXM	24'9"	N/A	31'1"		(1)Fiber/Strand		
25	26982-3010	525W	3010 RICHMOND RD, Lexington, KY 40509	60, 1, WXM	25'9"	N/A	32'8"		(1)Fiber/Strand		
ESTIMATED TOTAL COSTS											
PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM											

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



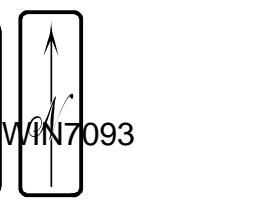
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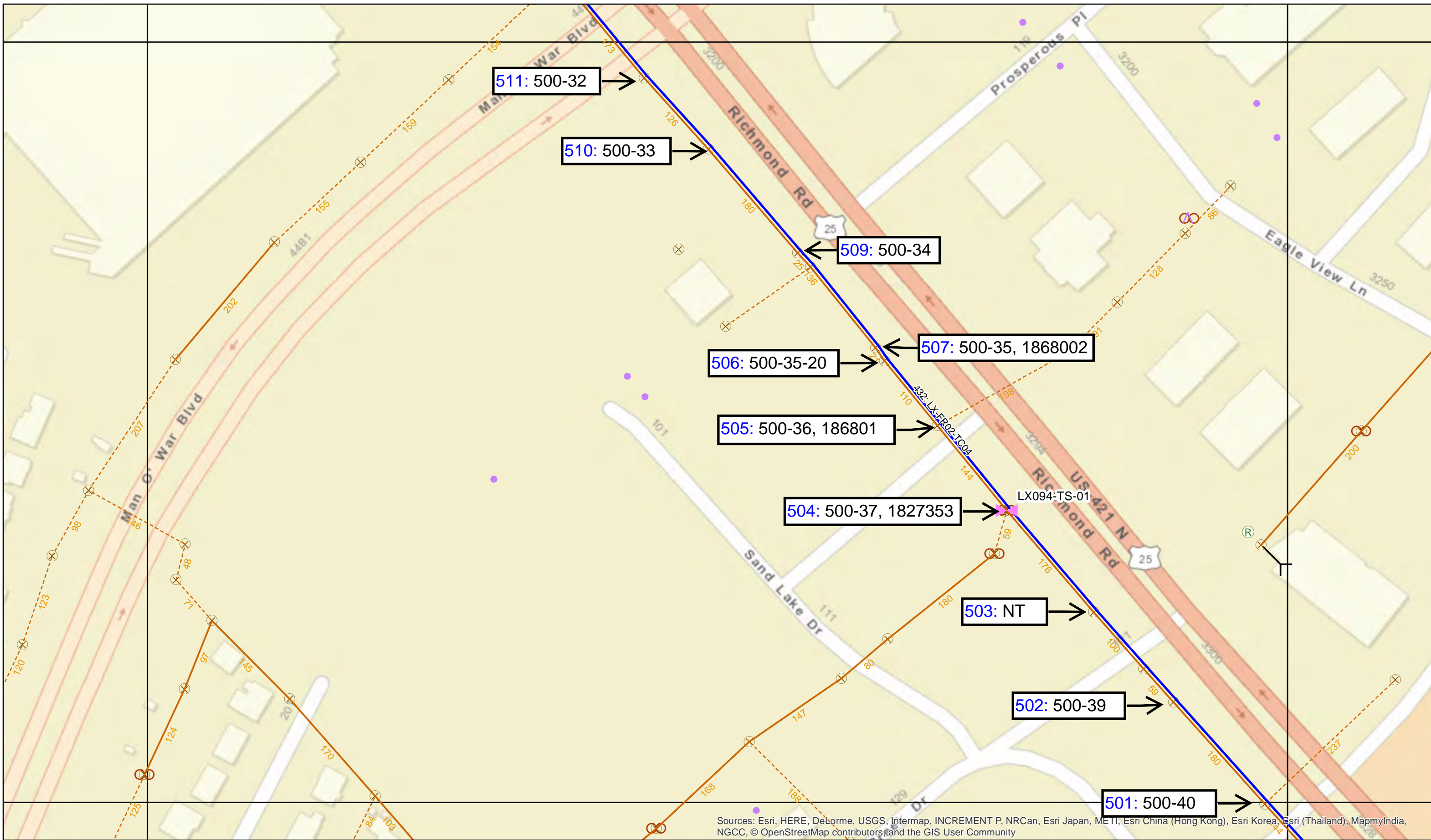
LXAP36
 PROJECT NUMBER:
 LXTNXY00497.CB

STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXAN37

PROJECT NUMBER:
LXTNXY00497.CB

DATE
1/16/2018

USER NAME:
argis

DESIGN ENG

STAKING GRID DRAWING

ROUTE: LX-FR02 Q1
PROJECT: Lexington City Build
LOCATION: Lexington, KY

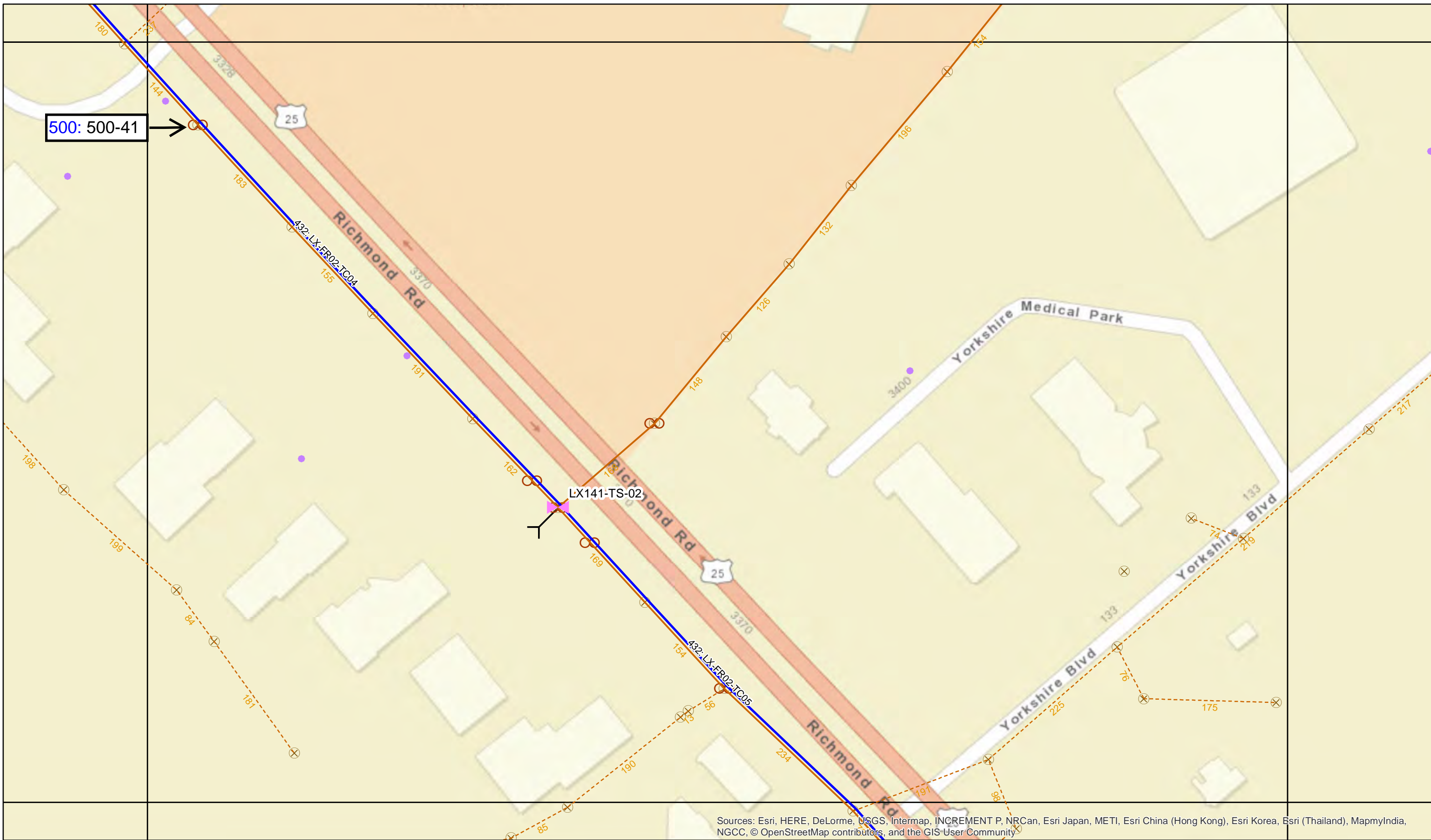
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LXAM38

PROJECT NUMBER:
LXTNXY.00497.CB

DATE: 1/16/2018

USER NAME: arcgis

DESIGN ENG

STAKING GRID DRAWING

ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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 Evansville, In 47715



1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

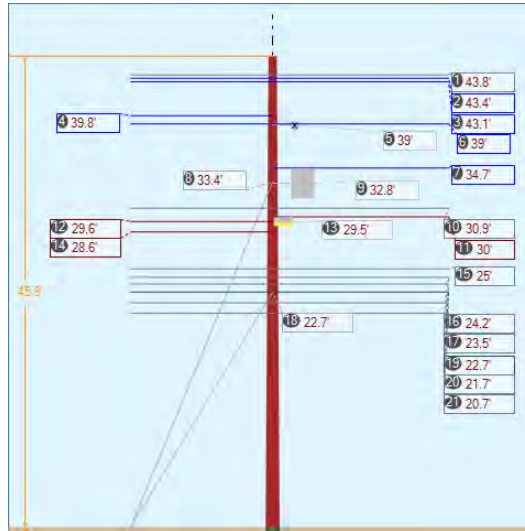
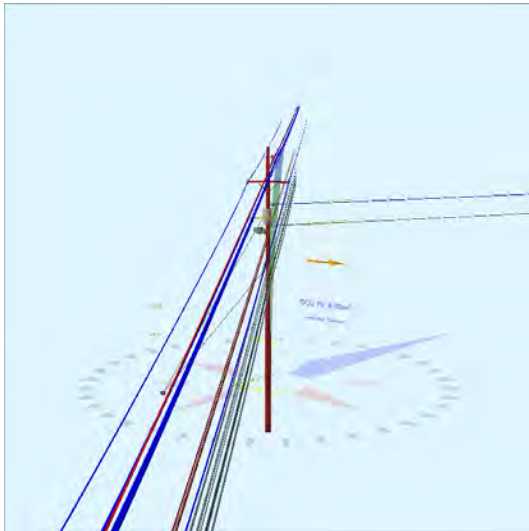
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX02-03	DROP POLE
HIP CABINET XX001A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN) Footage	ROADS
AERIAL (SLACK SPAN) Footage	WORK POINTS
NEW / PROPOSED TRENCH Footage	RAILROADS
EXISTING INHERITED TRENCH Footage	

Pole Num:	500W - 500-41	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.43	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.20	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.997804 Deg	Longitude:	-84.442686 Deg	Elevation:	869.096002288264		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	74.8
Groundline	0.0	74.8
Vertical	30.8	28.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	110.0	74.8
Groundline	110.0	74.8
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	20.5	208.5		54.5	74.8	57.0	50.0
? EHS 3/8 (Down)			33.4	61.7	74.8	70.9	50.0
? EHS 1/4 (Down)			22.7	40.0	74.8	45.9	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 110.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,402	111.2	46,152	120.0	34.2	2,462	2,682	19	2,481	36.5
Comms	413	32.8	8,971	23.3	6.7	479	1,718	12	491	7.2
GuyBraces	-880	-69.8	-25,468	-66.2	-18.9	-1,359	13,709	97	-1,262	-18.6
PowerEquipments	30	2.4	1,866	4.9	1.4	100	636	4	104	1.5
Pole	232	18.4	4,910	12.8	3.6	262	3,312	23	285	4.2
Crossarms	14	1.1	476	1.2	0.4	25	95	1	26	0.4
Streetlights	29	2.3	741	1.9	0.6	40	342	2	42	0.6
Insulators	22	1.7	799	2.1	0.6	43	142	1	44	0.6
Pole Load	1,262	100.0	38,447	100.0	28.5	2,051	22,638	160	2,211	32.5
Pole Reserve Capacity			96,428		71.5	4,749			4,589	67.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 110.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	235	18.6	9,889	25.7	7.3	528	1,581	11	539	7.9
KU, UTILITY	598	47.4	19,161	49.8	14.2	1,022	13,163	93	1,115	16.4
Unknown, COMMUNICATION	182	14.4	4,012	10.4	3.0	214	4,486	32	246	3.6
Pole	232	18.4	4,910	12.8	3.6	262	3,312	23	285	4.2
<Undefined>	14	1.1	476	1.2	0.4	25	95	1	26	0.4
Totals:	1,262	100.0	38,447	100.0	28.5	2,051	22,638	160	2,211	32.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.75	15.59	0.5630	0.39	0.291	178.3	138.0	178.3	5,010	251,505	16	1,015	252,536
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.75	15.59	0.5630	0.25	0.291	144.4	318.0	144.4	5,010	-251,505	13	822	-250,670
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.42	11.59	1.1080	2.35	1.093	178.3	138.0	178.3	3,200	159,418	44	1,524	160,986
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.42	19.59	1.1080	2.35	1.093	178.3	138.0	178.3	3,200	159,418	44	1,524	160,986

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.42	11.59	1.1080	1.76	1.093	144.4	318.0	144.4	3,200	-159,418	36	1,234	-158,148
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.42	19.59	1.1080	1.76	1.093	144.4	318.0	144.4	3,200	-159,418	36	1,234	-158,148
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.08	15.59	1.1080	2.35	1.093	178.3	138.0	178.3	3,200	158,194	44	1,512	159,750
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.08	15.59	1.1080	1.76	1.093	144.4	318.0	144.4	3,200	-158,194	36	1,225	-156,934
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.80	21.46	0.7200	2.09	0.462	178.3	138.0	178.4	1,750	79,921	41	1,060	81,022
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.99	46.40	0.7200	2.09	0.462	178.3	138.0	178.4	1,750	78,300	31	1,038	79,369
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.99	46.25	0.7200	2.09	0.462	178.3	138.0	178.4	1,750	78,300	-11	1,038	79,327
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.99	50.72	0.7200	1.57	0.462	144.4	318.0	144.4	1,750	-78,300	0	841	-77,458
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.99	50.58	0.7200	1.57	0.462	144.4	318.0	144.4	1,750	-78,300	-31	841	-77,490
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.99	23.25	0.7200	1.57	0.462	144.4	318.0	144.4	1,750	-78,300	-34	841	-77,492
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.73	17.38	0.3250	0.59	0.107	211.0	26.9	211.0	1,684	9,183	3	1,298	10,483
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	30.85	7.36	0.3250	0.59	0.107	211.0	26.9	211.0	1,684	8,157	16	1,153	9,326
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	30.85	7.36	0.5630	0.70	0.291	178.3	138.0	178.3	3,410	120,716	26	716	121,458
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	30.85	7.36	0.5630	0.47	0.291	144.4	318.0	144.4	3,410	-120,716	21	580	-120,115
Secondary	TRIPLEX 4 AWG	KU, UTILITY	30.04	7.41	0.6800	1.61	0.164	144.4	318.0	144.4	916	-31,572	-34	627	-30,979
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	29.58	7.44	0.2570	1.14	0.067	178.3	138.0	178.3	600	20,364	21	489	20,873
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	28.57	7.50	0.2570	1.14	0.067	178.3	138.0	178.3	600	19,668	21	472	20,161
Totals:											27,420	339	21,082	48,842	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.00	7.71	0.6570	2.60	0.190	178.3	138.0	178.4	750	21,513	24	631	22,168
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.00	7.71	0.6570	2.00	0.190	144.4	318.0	144.4	750	-21,513	19	511	-20,982
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.16	7.77	0.6570	2.60	0.190	178.3	138.0	178.4	750	20,788	24	610	21,422
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.16	7.77	0.6570	2.00	0.190	144.4	318.0	144.4	750	-20,788	20	494	-20,274

Telco	TELE 1.5	Unknown, COMMUNICATION	23.54	7.80	1.5000	3.17	0.900	178.3	138.0	178.4	2,000	54,018	-74	1,028	54,971
Telco	TELE 1.5	Unknown, COMMUNICATION	23.54	7.80	1.5000	2.40	0.900	144.4	318.0	144.5	2,000	-54,018	-60	832	-53,246
CATV	CATV 1.0	Unknown, COMMUNICATION	22.75	7.85	1.3300	2.67	0.337	178.3	138.0	178.4	925	24,141	43	909	25,093
CATV	CATV 1.0	Unknown, COMMUNICATION	22.75	7.85	1.3300	2.04	0.337	144.4	318.0	144.4	925	-24,141	35	736	-23,371
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.72	7.91	0.6570	2.60	0.190	178.3	138.0	178.4	750	18,692	25	549	19,265
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.72	7.91	0.6570	2.00	0.190	144.4	318.0	144.4	750	-18,692	20	444	-18,228
Telco	TELE 1.5	Unknown, COMMUNICATION	20.71	7.97	1.5000	3.17	0.900	178.3	138.0	178.4	2,000	47,527	76	904	48,507
Telco	TELE 1.5	Unknown, COMMUNICATION	20.71	7.97	1.5000	2.40	0.900	144.4	318.0	144.5	2,000	-47,527	61	732	-46,734
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.71	7.97	0.6570	2.60	0.190	178.3	138.0	178.4	750	17,823	-25	523	18,321
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.71	7.97	0.6570	2.00	0.190	144.4	318.0	144.4	750	-17,823	-20	424	-17,419
Totals:											0	167	9,327	9,494	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer 1PH-15KVA	KU, UTILITY	32.85	21.74	140.0	140.0	335.00	34.00	--	22.00	--	998	976	1,974
Totals:											998	976	1,974

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		38.99	6.12	317.7	317.7	50.00	4.50	3.50	96.00	-43	547	504	
Totals:											-43	547	504

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	29.48	4.95	180.0	180.0	45.00	6.00	18.00	3.00	12.00	42	211	253
General Streetlight - 3 ft. Arm	KU, UTILITY	29.48	4.95	150.0	150.0	45.00	6.00	18.00	3.00	12.00	94	211	305

General	Streetlight - 3 ft. Arm	KU, UTILITY	29.48	4.95	240.0	240.0	45.00	6.00	18.00	3.00	12.00	-79	211	131
General	Streetlight - 3 ft. Arm	KU, UTILITY	29.48	4.95	270.0	270.0	45.00	6.00	18.00	3.00	12.00	-116	211	95
Totals:												-59	843	784

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	43.75	0.00	50.0	50.0	11.00	4.75	11.50	14	95	109
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	39.80	0.00	137.5	137.5	3.00	3.90	17.13	9	106	115
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	38.99	45.00	40.0	-180.3	3.00	3.90	17.13	15	103	118
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	38.99	-45.00	235.5	-180.3	3.00	3.90	17.13	-5	103	98
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	38.99	45.00	40.0	0.3	3.00	3.90	17.13	0	103	104
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	38.99	-45.00	235.5	0.3	3.00	3.90	17.13	-20	103	84
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	38.99	0.00	317.7	0.3	3.00	3.90	17.13	-10	103	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	34.73	0.00	26.9	26.9	3.00	3.80	12.75	1	67	68
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.85	0.00	47.7	317.7	2.00	3.00	3.19	1	12	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.04	0.00	318.0	318.0	2.00	3.00	3.19	-2	11	9
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.58	0.00	137.5	137.5	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.57	0.00	137.5	137.5	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	25.00	0.00	47.7	317.7	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	24.16	0.00	47.7	317.7	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	23.54	0.00	227.7	317.7	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	22.75	0.00	47.7	317.7	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	21.72	0.00	47.7	317.7	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	20.71	0.00	47.7	317.7	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	20.71	0.00	227.7	317.7	5.00	3.00	0.00	-3	0	-3
Totals:										16	830	846

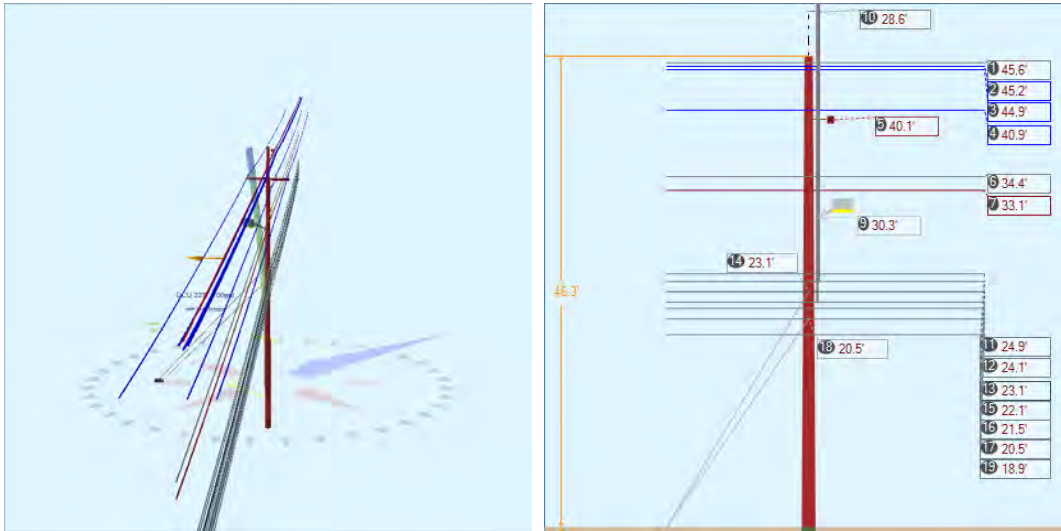
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	33.42	0.00	20.52	0.375	75.00	208.5	58.2	0.273	37.51	2.02
EHS 1/4	Down	Unknown, COMMUNICATION	22.74	0.00	20.52	0.25	75.00	208.5	47.8	0.121	28.84	0.98

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,831	8,938	8,557	7,276	4,504	-669	-21,695
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,749	2,499	2,397	1,775	1,610	-239	-5,257
Totals:										9,051	6,115	-909	-26,952

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	20.52	208.5	20,000	1.00	20,000	11,389	10,909	56.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.78	34.13	12.17	24.84	7.96	13.44	1.60e+6	60.00	57.00	45.57	212,020	2115.69	9.35

Pole Num:	501W - 500-40	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.75	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.46	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.998114 Deg	Longitude:	-84.442978 Deg	Elevation:	875.488998174869		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.7	0.0
Groundline	56.7	0.0
Vertical	3.5	29.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	76,697	228.0
Groundline	76,697	228.0
GL Allowable	137,370	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	22.0	231.0		0.0	227.0	15.2	50.0
? EHS 1/4 (Down)			23.1	0.0	227.0	55.8	50.0
? Single Helix Anchor	21.1	231.0		0.0	227.0	10.4	50.0
? EHS 1/4 (Down)			20.5	0.0	227.0	38.3	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 228.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,114	43.8	45,456	59.3	33.1	2,248	2,579	18	2,266	33.3
Comms	989	38.9	20,650	26.9	15.0	1,021	1,726	12	1,033	15.2
GuyBraces	2	0.1	49	0.1	0.0	2	11	0	3	0.0
Pole	290	11.4	6,575	8.6	4.8	325	3,389	24	349	5.1
Crossarms	1	0.0	49	0.1	0.0	2	95	1	3	0.0
Streetlights	40	1.6	1,610	2.1	1.2	80	171	1	81	1.2
Risers	101	4.0	2,093	2.7	1.5	104	173	1	105	1.5
Insulators	7	0.3	215	0.3	0.2	11	129	1	12	0.2
Pole Load	2,544	100.0	76,697	100.0	55.8	3,794	8,274	58	3,851	56.6
Pole Reserve Capacity			60,673		44.2	3,007			2,949	43.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 228.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	559	22.0	24,747	32.3	18.0	1,224	1,588	11	1,235	18.2
KU, UTILITY	704	27.7	24,670	32.2	18.0	1,220	1,398	10	1,230	18.1
Unknown, COMMUNICATION	991	38.9	20,655	26.9	15.0	1,022	1,803	13	1,034	15.2
Pole	290	11.4	6,575	8.6	4.8	325	3,389	24	349	5.1
<Undefined>	1	0.0	49	0.1	0.0	2	95	1	3	0.0
Totals:	2,544	100.0	76,697	100.0	55.8	3,794	8,274	58	3,851	56.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.58	15.52	0.5630	0.27	0.291	144.4	138.0	144.4	5,010	144	-25	2,040	2,160
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.58	15.52	0.5630	0.41	0.291	179.7	318.0	179.7	5,010	-144	-31	2,539	2,364
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.25	11.52	1.1080	1.76	1.093	144.4	138.0	144.4	3,200	92	-70	3,064	3,086
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.25	19.52	1.1080	1.76	1.093	144.4	138.0	144.4	3,200	92	-70	3,064	3,086

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.25	11.52	1.1080	2.38	1.093	179.7	318.0	179.7	3,200	-92	-87	3,813	3,634
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.25	19.52	1.1080	2.38	1.093	179.7	318.0	179.7	3,200	-92	-87	3,813	3,634
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.92	15.52	1.1080	1.76	1.093	144.4	138.0	144.4	3,200	91	-70	3,041	3,062
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.92	15.52	1.1080	2.38	1.093	179.7	318.0	179.7	3,200	-91	-87	3,785	3,607
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.95	19.00	0.7200	1.58	0.462	144.4	138.0	144.4	1,750	45	-157	2,105	1,994
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.95	19.00	0.7200	2.12	0.462	179.7	318.0	179.7	1,750	-45	-196	2,620	2,379
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.95	45.41	0.7200	1.58	0.462	144.4	138.0	144.4	1,750	45	-393	2,105	1,758
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.95	45.41	0.7200	2.12	0.462	179.7	318.0	179.7	1,750	-45	-489	2,620	2,085
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.95	45.41	0.7200	1.58	0.462	144.4	138.0	144.4	1,750	45	393	2,105	2,544
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.95	45.41	0.7200	2.12	0.462	179.7	318.0	179.7	1,750	-45	489	2,620	3,063
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.43	7.19	0.5630	0.49	0.291	144.4	138.0	144.4	3,410	74	-45	1,541	1,571
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	34.43	7.19	0.5630	0.74	0.291	179.7	318.0	179.7	3,410	-74	-56	1,918	1,788
Secondary	TRIPLEX 4 AWG	KU, UTILITY	33.07	7.27	0.6800	1.63	0.164	144.4	138.0	144.4	916	19	-38	1,643	1,625
Secondary	TRIPLEX 4 AWG	KU, UTILITY	33.07	7.27	0.6800	2.11	0.164	179.7	318.0	179.7	916	-19	-47	2,045	1,979
Totals:											0	-1,065	46,483	45,418	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.87	7.76	0.6570	2.03	0.190	144.4	138.0	144.4	750	12	-42	1,212	1,182
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.87	7.76	0.6570	2.67	0.190	179.7	318.0	179.7	750	-12	-52	1,508	1,444
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.13	7.81	0.6570	2.03	0.190	144.4	138.0	144.4	750	11	-42	1,176	1,145
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.13	7.81	0.6570	2.67	0.190	179.7	318.0	179.7	750	-11	-52	1,463	1,399
CATV	CATV 1.0	Unknown,	23.13	7.87	1.3300	2.05	0.337	144.4	138.0	144.4	925	14	-75	1,783	1,722
CATV	CATV 1.0	Unknown,	23.13	7.87	1.3300	2.71	0.337	179.7	318.0	179.7	925	-14	-93	2,218	2,112

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.10	7.93	0.6570	2.03	0.190	144.4	138.0	144.4	750	10	-43	1,077	1,045
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.10	7.93	0.6570	2.67	0.190	179.7	318.0	179.7	750	-10	-53	1,340	1,276
Telco	TELE 1.5	Unknown, COMMUNICATION	21.50	7.97	1.5000	2.40	0.900	144.4	138.0	144.5	2,000	27	-132	1,811	1,707
Telco	TELE 1.5	Unknown, COMMUNICATION	21.50	7.97	1.5000	3.21	0.900	179.7	318.0	179.8	2,000	-27	-164	2,254	2,063
Telco	TELE 1.5	Unknown, COMMUNICATION	20.46	8.03	1.5000	2.40	0.900	144.4	138.0	144.5	2,000	26	-133	1,723	1,617
Telco	TELE 1.5	Unknown, COMMUNICATION	20.46	8.03	1.5000	3.21	0.900	179.7	318.0	179.8	2,000	-26	-165	2,144	1,953
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.90	8.12	0.6570	2.03	0.190	144.4	138.0	144.4	750	9	-44	921	886
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	18.90	8.12	0.6570	2.67	0.190	179.7	318.0	179.7	750	-9	-55	1,146	1,082
Totals:											0	-1,143	21,776	20,633	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		40.13	6.10	318.0	318.0	50.00	4.50	3.50	96.00	0	49	49
Totals:										0	49	49

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	30.28	4.94	185.0	185.0	45.00	24.00	20.00	3.00	36.00	177	601	778
General Streetlight - 3 ft. Arm	KU, UTILITY	30.28	4.94	210.0	210.0	45.00	24.00	20.00	3.00	36.00	230	601	831
Totals:										407	1,201	1,608	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 180.0°	KU, UTILITY	28.56	7.04	180.0	180.0	28.56	342.75	2.50	2.50	342.75	11	580	591
Riser 260.0°	KU, UTILITY	31.24	7.04	260.0	260.0	31.24	374.85	4.00	4.00	374.85	15	826	841
Riser 270.0°	KU, UTILITY	31.24	7.04	270.0	270.0	31.24	374.85	2.50	2.50	374.85	13	647	660
Totals:										39	2,053	2,091	

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension	Suspension 11.50"	Power, UTILITY	45.58	0.00	50.0	50.0	11.00	4.75	11.50	-27	121	94
Pin	Pin Insulator - 5 kV	KU, UTILITY	40.32	18.00	29.2	0.0	6.00	3.50	7.50	-17	52	35
Pin	Pin Insulator - 5 kV	KU, UTILITY	40.32	45.00	40.2	0.0	6.00	3.50	7.50	-43	52	9
Pin	Pin Insulator - 5 kV	KU, UTILITY	40.32	-45.00	235.7	0.0	6.00	3.50	7.50	43	52	94
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.43	0.00	48.0	138.0	2.00	3.00	3.19	-2	16	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.07	0.00	48.0	138.0	2.00	3.00	3.19	-2	15	13
Bolt	Three Bolt	Unknown, COMMUNICATION	24.87	0.00	48.0	138.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.13	0.00	48.0	138.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.13	0.00	48.0	138.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.10	0.00	48.0	138.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.50	0.00	48.0	138.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	20.46	0.00	48.0	138.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.90	0.00	48.0	138.0	5.00	3.00	0.00	-6	0	-6
Totals:										-93	307	215

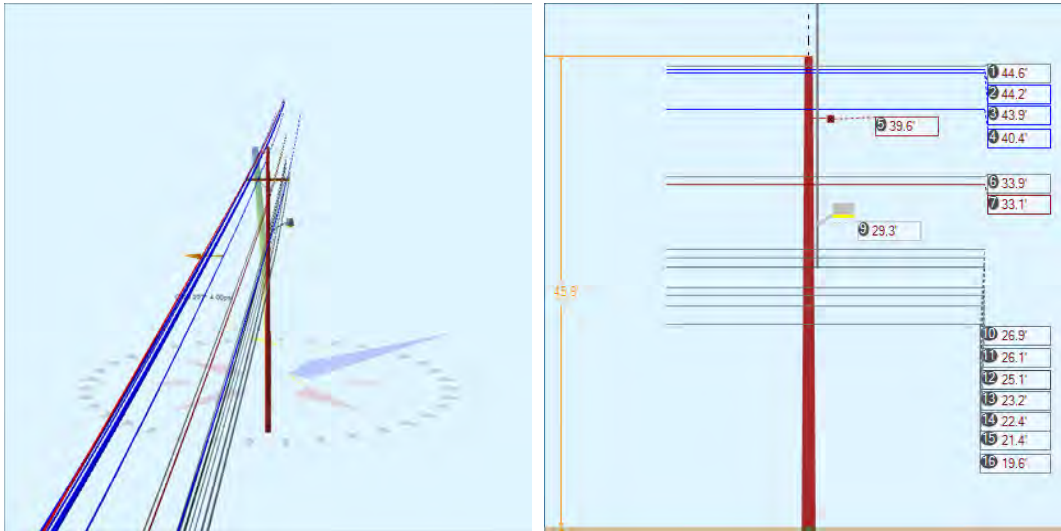
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Unknown, COMMUNICATION	23.13	0.00	21.95	0.25	75.00	231.0	46.4	0.121	30.08	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	20.46	0.00	21.14	0.25	75.00	231.0	43.9	0.121	27.59	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,338	3,035	0	0	0	0	26
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,290	2,082	0	0	0	0	23
Totals:										0	0	0	49

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.95	231.0	20,000	1.00	20,000	3,035	0	15.2
Single Helix Anchor		18.00	21.14	231.0	20,000	1.00	20,000	2,082	0	10.4

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.79	33.97	12.30	15.02	7.96	13.52	1.60e+6	60.00	57.00	46.25	236,095	2363.92	28.57

Pole Num:	502W - 500-39	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.20	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.998467 Deg	Longitude:	-84.443419 Deg	Elevation:	878.597451812319		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	73.4	0.0
Groundline	73.4	0.0
Vertical	28.5	29.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	97,815	227.4
Groundline	97,815	227.4
GL Allowable	134,836	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,496	50.0	62,731	64.1	46.5	3,160	2,682	19	3,179	46.8
Comms	1,139	38.0	26,992	27.6	20.0	1,360	1,794	13	1,372	20.2
Pole	284	9.5	6,363	6.5	4.7	321	3,311	23	344	5.1
Crossarms	1	0.0	49	0.1	0.0	3	95	1	3	0.0
Streetlights	20	0.7	351	0.4	0.3	18	86	1	18	0.3
Risers	45	1.5	947	1.0	0.7	48	61	0	48	0.7
Insulators	7	0.2	382	0.4	0.3	19	129	1	20	0.3
Pole Load	2,992	100.0	97,815	100.0	72.5	4,928	8,158	58	4,985	73.3
Pole Reserve Capacity			37,021		27.5	1,872			1,815	26.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	785	26.2	35,355	36.1	26.2	1,781	1,651	12	1,793	26.4
KU, UTILITY	783	26.2	29,026	29.7	21.5	1,462	1,241	9	1,471	21.6
Unknown, COMMUNICATION	1,139	38.0	27,023	27.6	20.0	1,361	1,861	13	1,374	20.2
Pole	284	9.5	6,363	6.5	4.7	321	3,311	23	344	5.1
<Undefined>	1	0.0	49	0.1	0.0	3	95	1	3	0.0
Totals:	2,992	100.0	97,815	100.0	72.5	4,928	8,158	58	4,985	73.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.58	15.54	0.5630	0.41	0.291	179.7	138.0	179.7	5,010	2,513	31	2,483	5,028
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.58	15.54	0.5630	0.32	0.291	157.3	317.2	157.3	5,010	606	27	2,174	2,807
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.25	11.54	1.1080	2.38	1.093	179.7	138.0	179.7	3,200	1,593	87	3,729	5,409
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.25	19.54	1.1080	2.38	1.093	179.7	138.0	179.7	3,200	1,593	87	3,729	5,409

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.25	11.54	1.1080	1.98	1.093	157.3	317.2	157.3	3,200	384	76	3,264	3,725
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	44.25	19.54	1.1080	1.98	1.093	157.3	317.2	157.3	3,200	384	76	3,264	3,725
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.92	15.54	1.1080	2.38	1.093	179.7	138.0	179.7	3,200	1,581	88	3,701	5,369
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.92	15.54	1.1080	1.98	1.093	157.3	317.2	157.3	3,200	381	77	3,240	3,698
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.41	19.00	0.7200	2.12	0.462	179.7	138.0	179.7	1,750	796	196	2,585	3,577
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.41	19.00	0.7200	1.77	0.462	157.3	317.2	157.3	1,750	192	171	2,264	2,627
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.41	45.41	0.7200	2.12	0.462	179.7	138.0	179.7	1,750	796	489	2,585	3,871
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.41	45.41	0.7200	1.77	0.462	157.3	317.2	157.3	1,750	192	428	2,264	2,884
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.41	45.41	0.7200	2.12	0.462	179.7	138.0	179.7	1,750	796	-489	2,585	2,893
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	40.41	45.41	0.7200	1.77	0.462	157.3	317.2	157.3	1,750	192	-428	2,264	2,028
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	33.87	7.18	0.5630	0.74	0.291	179.7	138.0	179.7	3,410	1,300	56	1,887	3,242
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	33.87	7.18	0.5630	0.58	0.291	157.3	317.2	157.3	3,410	313	49	1,652	2,014
Secondary	TRIPLEX 4 AWG	KU, UTILITY	33.15	7.22	0.6800	2.11	0.164	179.7	138.0	179.7	916	342	47	2,049	2,438
Secondary	TRIPLEX 4 AWG	KU, UTILITY	33.15	7.22	0.6800	1.80	0.164	157.3	317.2	157.3	916	82	41	1,795	1,918
Totals:											14,036	1,111	47,515	62,662	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.87	7.60	0.6570	2.67	0.190	179.7	138.0	179.7	750	227	51	1,629	1,907
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.87	7.60	0.6570	2.26	0.190	157.3	317.2	157.3	750	55	45	1,427	1,526
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.06	7.65	0.6570	2.67	0.190	179.7	138.0	179.7	750	220	51	1,580	1,851
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.06	7.65	0.6570	2.26	0.190	157.3	317.2	157.3	750	53	45	1,383	1,481
CATV	CATV 1.0	Unknown,	25.14	7.71	1.3300	2.71	0.337	179.7	138.0	179.7	925	262	91	2,411	2,764
CATV	CATV 1.0	Unknown,	25.14	7.71	1.3300	2.28	0.337	157.3	317.2	157.3	925	63	79	2,111	2,254

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.18	7.82	0.6570	2.67	0.190	179.7	138.0	179.7	750	196	53	1,405	1,653
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.18	7.82	0.6570	2.26	0.190	157.3	317.2	157.3	750	47	46	1,231	1,324
Telco	TELE 1.5	Unknown, COMMUNICATION	22.42	7.87	1.5000	3.21	0.900	179.7	138.0	179.8	2,000	505	-162	2,350	2,693
Telco	TELE 1.5	Unknown, COMMUNICATION	22.42	7.87	1.5000	2.69	0.900	157.3	317.2	157.4	2,000	122	-142	2,058	2,038
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.39	7.93	0.6570	2.67	0.190	179.7	138.0	179.7	750	180	53	1,297	1,531
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.39	7.93	0.6570	2.26	0.190	157.3	317.2	157.3	750	44	47	1,136	1,226
Telco	TELE 1.5	Unknown, COMMUNICATION	19.63	8.04	1.5000	3.21	0.900	179.7	138.0	179.8	2,000	442	165	2,057	2,663
Telco	TELE 1.5	Unknown, COMMUNICATION	19.63	8.04	1.5000	2.69	0.900	157.3	317.2	157.4	2,000	106	145	1,801	2,052
Totals:											2,520	567	23,875	26,962	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		39.60	6.09	137.6	137.6	50.00	4.50	3.50	96.00	0	49	49	
Totals:											0	49	49

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 3 ft. Arm	KU, UTILITY	29.32	4.95	30.0	30.0	45.00	24.00	20.00	3.00	36.00	-231	581	350
Totals:											-231	581	350

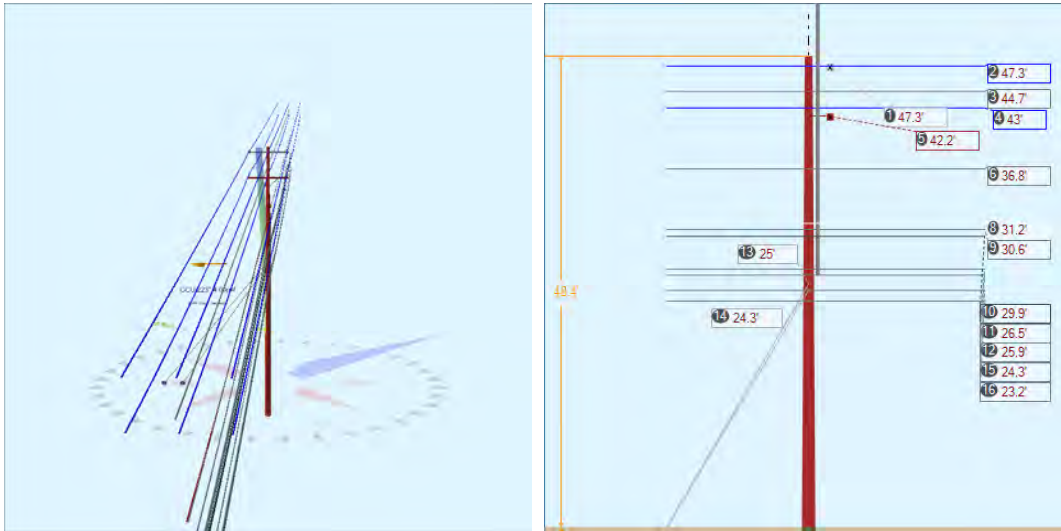
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 120.0°	KU, UTILITY	32.00	7.04	120.0	120.0	32.00	383.96	2.50	2.50	383.96	-5	952	946
Totals:											-5	952	946

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension Suspension 11.50"	Power, UTILITY	44.58	0.00	230.0	230.0	11.00	4.75	11.50	27	118	145

Pin	Pin Insulator - 5 kV	KU, UTILITY	39.79	18.00	208.9	0.0	6.00	3.50	7.50	17	51	68
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.79	45.00	219.9	0.0	6.00	3.50	7.50	43	51	94
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.79	-45.00	55.3	0.0	6.00	3.50	7.50	-43	51	8
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.87	0.00	227.6	137.6	2.00	3.00	3.19	2	16	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.15	0.00	227.6	137.6	2.00	3.00	3.19	2	15	18
Bolt	Three Bolt	Unknown, COMMUNICATION	26.87	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	26.06	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.14	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.18	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.42	0.00	47.6	137.6	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.39	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	19.63	0.00	227.6	137.6	5.00	3.00	0.00	6	0	6
Totals:										80	302	382

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.84	34.00	12.21	25.09	7.96	13.44	1.60e+6	60.00	57.00	45.56	28,579	286.23	3.51

Pole Num:	503W - NT	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.63	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.26	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.998814 Deg	Longitude:	-84.443767 Deg	Elevation:	879.339311495203		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	59.3	0.0
Groundline	59.3	0.0
Vertical	3.0	30.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	85,065	197.8
Groundline	85,065	197.8
GL Allowable	145,285	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.3	227.0		0.0	223.4	13.8	50.0
? EHS 1/4 (Down)			25.0	0.0	223.4	50.7	50.0
? Single Helix Anchor	17.5	227.0		0.0	223.4	12.5	50.0
? EHS 1/4 (Down)			24.3	0.0	223.4	46.0	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 197.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,357	53.6	54,722	64.3	37.7	2,571	1,799	12	2,583	38.0
Comms	818	32.3	21,572	25.4	14.9	1,013	1,742	12	1,025	15.1
GuyBraces	2	0.1	58	0.1	0.0	3	11	0	3	0.0
Pole	277	10.9	6,491	7.6	4.5	305	3,635	24	329	4.8
Crossarms	4	0.2	148	0.2	0.1	7	190	1	8	0.1
Risers	51	2.0	1,162	1.4	0.8	55	67	0	55	0.8
Insulators	21	0.8	913	1.1	0.6	43	160	1	44	0.6
Pole Load	2,530	100.0	85,065	100.0	58.6	3,996	7,603	51	4,047	59.5
Pole Reserve Capacity			60,220		41.4	2,804			2,753	40.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 197.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,428	56.5	56,818	66.8	39.1	2,669	1,949	13	2,682	39.4
Unknown, COMMUNICATION	821	32.4	21,608	25.4	14.9	1,015	1,830	12	1,027	15.1
Pole	277	10.9	6,491	7.6	4.5	305	3,635	24	329	4.8
<Undefined>	4	0.2	148	0.2	0.1	7	190	1	8	0.1
Totals:	2,530	100.0	85,065	100.0	58.6	3,996	7,603	51	4,047	59.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.34	6.96	0.7200	0.45	0.462	157.3	137.2	157.3	6,210	187,396	19	2,304	189,719
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.34	45.54	0.7200	0.45	0.462	157.3	137.2	157.3	6,210	187,396	-30	2,304	189,670
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.34	45.53	0.7200	0.45	0.462	157.3	137.2	157.3	6,210	187,396	36	2,304	189,736
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.34	18.54	0.7200	0.56	0.462	175.7	317.3	175.7	6,210	-187,977	-21	2,571	-185,427
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.34	48.68	0.7200	0.56	0.462	175.7	317.3	175.7	6,210	-187,977	-43	2,571	-185,449

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	47.34	48.66	0.7200	0.56	0.462	175.7	317.3	175.7	6,210	-187,977	27	2,571	-185,379
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	44.73	16.95	0.3980	0.46	0.145	157.3	137.2	157.3	2,128	60,681	9	1,603	62,293
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	44.73	16.95	0.3980	0.57	0.145	175.7	317.3	175.7	2,128	-60,869	-10	1,788	-59,091
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.04	6.10	0.7200	1.77	0.462	157.3	137.2	157.3	1,750	48,046	-28	2,097	50,114
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.04	6.10	0.7200	2.06	0.462	175.7	317.3	175.7	1,750	-48,195	-32	2,339	-45,887
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.04	45.41	0.7200	1.77	0.462	157.3	137.2	157.3	1,750	48,046	-401	2,097	49,741
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.04	45.41	0.7200	2.06	0.462	175.7	317.3	175.7	1,750	-48,195	-448	2,339	-46,304
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.04	45.41	0.7200	1.77	0.462	157.3	137.2	157.3	1,750	48,046	344	2,097	50,487
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.04	45.41	0.7200	2.06	0.462	175.7	317.3	175.7	1,750	-48,195	385	2,339	-45,471
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.81	7.17	0.5630	0.58	0.291	157.3	137.2	157.3	3,410	80,004	-42	1,561	81,523
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.81	7.17	0.5630	0.71	0.291	175.7	317.3	175.7	3,410	-80,252	-47	1,742	-78,558
Secondary	TRIPLEX 4 AWG	KU, UTILITY	36.81	7.17	0.6800	1.80	0.164	157.3	137.2	157.3	916	21,511	-35	1,732	23,208
											Totals:	18,885	-319	36,360	54,926

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Overlashed Bundle	1/4" EHS	Unknown,	31.20	7.51	0.2500	1.04	0.121	175.7	317.3	175.7	800	-15,962	-15	1,084	-14,893
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	31.20	7.51	0.6570	2.26	0.190	157.3	137.2	157.3	750	14,918	22	1,441	16,380
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	30.58	7.55	0.6570	2.26	0.190	157.3	137.2	157.3	750	14,621	-39	1,412	15,995
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	30.58	7.55	0.6570	2.59	0.190	175.7	317.3	175.7	750	-14,667	-43	1,575	-13,135
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	29.88	7.59	1.3300	2.28	0.337	157.3	137.2	157.3	925	17,619	-68	2,182	19,732
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	29.88	7.59	1.3300	2.63	0.337	175.7	317.3	175.8	925	-17,673	-76	2,434	-15,315
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.51	7.79	0.6570	2.26	0.190	157.3	137.2	157.3	750	12,673	-40	1,224	13,857
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.51	7.79	0.6570	2.59	0.190	175.7	317.3	175.7	750	-12,712	-45	1,365	-11,391
Telco	TELE 1.5	Unknown,	25.88	7.83	1.5000	2.69	0.900	157.3	137.2	157.4	2,000	32,995	123	2,065	35,183
Telco	TELE 1.5	Unknown,	25.88	7.83	1.5000	3.11	0.900	175.7	317.3	175.8	2,000	-33,097	137	2,304	-30,656
Telco	TELE 1.5	Unknown,	24.32	7.92	1.5000	2.69	0.900	157.3	137.2	157.4	2,000	31,003	-124	1,941	32,819
Telco	TELE 1.5	Unknown,	24.32	7.92	1.5000	3.11	0.900	175.7	317.3	175.8	2,000	-31,099	-139	2,165	-29,073
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.23	7.99	0.6570	2.26	0.190	157.3	137.2	157.3	750	11,107	-41	1,072	12,138
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.23	7.99	0.6570	2.59	0.190	175.7	317.3	175.7	750	-11,141	-46	1,197	-9,990
Totals:											-1,416	-394	23,461	21,652	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	47.34	5.79	317.2	317.2	50.00	4.50	3.50	96.00	-22	103	80
Normal	Crossarm	42.23	6.10	317.2	317.2	50.00	4.50	3.50	96.00	-24	92	68
Totals:										-46	195	149

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser KU, UTILITY	35.07	7.04	360.0	360.0	35.07	420.83	4.00	4.00	420.83	-19	1,185	1,166
Totals:										-19	1,185	1,166	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	47.34	0.00	317.2	-180.0	3.00	3.80	12.75	2	101	102
Deadend	Deadend Insulator - 15 kV KU, UTILITY	47.34	45.00	39.9	-180.0	3.00	3.80	12.75	-17	101	84
Deadend	Deadend Insulator - 15 kV KU, UTILITY	47.34	-45.00	234.6	-180.0	3.00	3.80	12.75	20	101	121
Deadend	Deadend Insulator - 15 kV KU, UTILITY	47.34	0.00	317.2	0.0	3.00	3.80	12.75	-4	101	96
Deadend	Deadend Insulator - 15 kV KU, UTILITY	47.34	45.00	39.9	0.0	3.00	3.80	12.75	-23	101	78
Deadend	Deadend Insulator - 15 kV KU, UTILITY	47.34	-45.00	234.6	0.0	3.00	3.80	12.75	14	101	115

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	44.73	0.00	137.2	137.2	3.00	3.80	12.75	4	95	99
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	44.73	0.00	317.3	317.3	3.00	3.80	12.75	-4	95	91
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.42	0.00	317.2	0.0	6.00	3.50	7.50	-3	49	46
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.42	45.00	39.5	0.0	6.00	3.50	7.50	-40	49	9
Pin	Pin Insulator - 5 kV	KU, UTILITY	42.42	-45.00	234.9	0.0	6.00	3.50	7.50	34	49	83
Spool	Spool Insulator - 25 kV	KU, UTILITY	36.81	0.00	47.2	317.2	2.00	3.00	3.19	-2	15	13
Bolt	Single Bolt	Unknown, COMMUNICATION	31.20	0.00	317.3	407.3	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	31.20	0.00	137.2	137.2	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	30.58	0.00	47.2	317.2	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	29.88	0.00	47.2	317.2	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	26.51	0.00	47.2	317.2	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	25.88	0.00	227.2	317.2	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	24.32	0.00	47.2	317.2	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	23.23	0.00	47.2	317.2	5.00	3.00	0.00	-6	0	-6
Totals:										-40	956	916

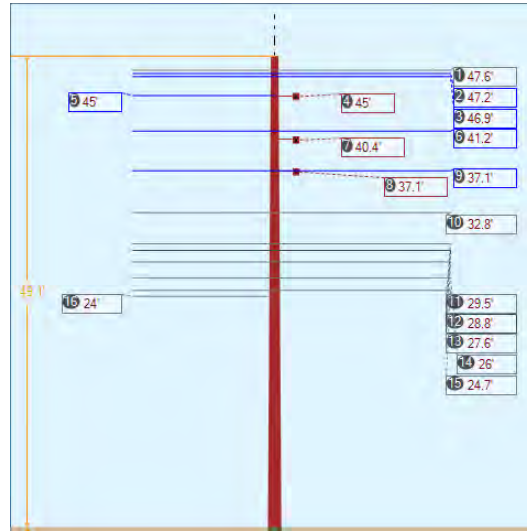
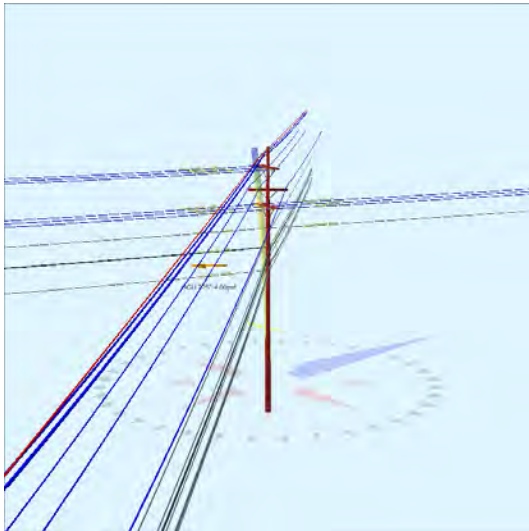
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Down	Unknown, COMMUNICATION	24.97	0.00	21.30	0.25	75.00	227.0	49.4	0.121	31.03	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	24.32	0.00	17.53	0.25	75.00	227.0	54.0	0.121	28.22	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	3,033	2,757	0	0	0	0	29
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,752	2,502	0	0	0	0	28
Totals:										0	0	0	58

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.30	227.0	20,000	1.00	20,000	2,757	0	13.8
Single Helix Anchor		18.00	17.53	227.0	20,000	1.00	20,000	2,502	0	12.5

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.05	33.93	12.55	14.54	7.96	13.78	1.60e+6	60.00	57.00	48.37	251,072	2534.43	33.33

Pole Num:	504W - 500-37 & 1827353	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status:	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.94	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.52	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.999184 Deg	Longitude:	-84.444195 Deg	Elevation:	876.884204954167		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	73.2	33.7
Groundline	56.3	0.0
Vertical	32.3	32.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	37,994	205.3
Groundline	81,093	215.8
GL Allowable	147,925	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 215.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-559	-32.0	17,830	22.0	12.1	817	2,936	19	836	12.3
Comms	1,848	105.7	49,593	61.2	33.5	2,272	1,199	8	2,280	33.5
Pole	308	17.6	7,378	9.1	5.0	338	3,717	25	363	5.3
Crossarms	119	6.8	4,871	6.0	3.3	223	475	3	226	3.3
Insulators	34	1.9	1,421	1.8	1.0	65	180	1	66	1.0
Pole Load	1,749	100.0	81,093	100.0	54.8	3,715	8,507	56	3,771	55.5
Pole Reserve Capacity			66,832		45.2	3,085			3,029	44.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 215.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	151	8.7	7,706	9.5	5.2	353	1,578	10	363	5.3
KU, UTILITY	-677	-38.7	11,562	14.3	7.8	530	1,472	10	539	7.9
Unknown, COMMUNICATION	1,848	105.7	49,575	61.1	33.5	2,271	1,266	8	2,279	33.5
Pole	308	17.6	7,378	9.1	5.0	338	3,717	25	363	5.3
<Undefined>	119	6.8	4,871	6.0	3.3	223	475	3	226	3.3
Totals:	1,749	100.0	81,093	100.0	54.8	3,715	8,507	56	3,771	55.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	47.58	15.57	0.5630	0.40	0.291	177.3	139.1	177.3	5,010	71,531	31	2,538	74,100
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	47.58	15.57	0.5630	0.27	0.291	144.7	320.3	144.7	5,010	-77,830	25	2,057	-75,748
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.25	11.57	1.1080	2.34	1.093	177.3	139.1	177.3	3,200	45,368	87	3,813	49,268
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.25	19.57	1.1080	2.34	1.093	177.3	139.1	177.3	3,200	45,368	87	3,813	49,268
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.25	11.57	1.1080	1.77	1.093	144.7	320.3	144.7	3,200	-49,364	71	3,090	-46,203
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	47.25	19.57	1.1080	1.77	1.093	144.7	320.3	144.7	3,200	-49,364	71	3,090	-46,203

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.92	15.57	1.1080	2.34	1.093	177.3	139.1	177.3	3,200	45,048	87	3,786	48,921
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.92	15.57	1.1080	1.77	1.093	144.7	320.3	144.7	3,200	-49,015	71	3,068	-45,876
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.96	23.11	0.7200	0.64	0.462	57.6	200.3	57.6	950	53,519	14	102	53,635
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.96	50.59	0.7200	0.64	0.462	57.6	200.3	57.6	950	53,519	10	102	53,631
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.96	50.59	0.7200	0.64	0.462	57.6	200.3	57.6	950	53,519	3	102	53,624
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.25	19.05	0.7200	2.08	0.462	177.3	139.1	177.4	1,750	21,674	172	2,528	24,374
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.25	19.05	0.7200	1.59	0.462	144.7	320.3	144.7	1,750	-23,583	140	2,047	-21,395
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.25	45.43	0.7200	2.08	0.462	177.3	139.1	177.4	1,750	21,674	-485	2,528	23,717
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.25	45.43	0.7200	1.59	0.462	144.7	320.3	144.7	1,750	-23,583	-395	2,047	-21,931
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.25	45.43	0.7200	2.08	0.462	177.3	139.1	177.4	1,750	21,674	454	2,528	24,656
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.25	45.43	0.7200	1.59	0.462	144.7	320.3	144.7	1,750	-23,583	370	2,047	-21,166
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.13	48.92	0.3250	0.59	0.107	223.3	20.9	223.3	1,684	-78,558	-15	208	-78,365
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.13	19.20	0.3250	0.59	0.107	223.3	20.9	223.3	1,684	-78,558	-23	208	-78,372
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	37.13	48.92	0.3250	0.59	0.107	223.3	20.9	223.3	1,684	-78,558	-3	208	-78,352
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.13	23.58	0.7200	0.64	0.462	57.6	200.3	57.6	950	44,191	16	84	44,292
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.13	50.80	0.7200	0.64	0.462	57.6	200.3	57.6	950	44,191	11	84	44,287
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	37.13	50.80	0.7200	0.64	0.462	57.6	200.3	57.6	950	44,191	3	84	44,279
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.76	7.46	0.3980	0.63	0.145	57.6	200.3	57.6	300	12,313	11	55	12,379
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.76	7.46	0.3250	0.59	0.107	223.3	20.9	223.3	1,684	-69,312	-37	184	-69,165
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	32.76	7.46	0.5630	0.72	0.291	177.3	139.1	177.3	3,410	33,515	-55	1,748	35,208
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	32.76	7.46	0.5630	0.49	0.291	144.7	320.3	144.7	3,410	-36,467	-45	1,416	-35,096
											Totals:	-26,477	676	43,568	17,767

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.51	7.65	0.6570	2.62	0.190	177.3	139.1	177.4	750	6,640	-49	1,713	8,304
	COMMUNICATION														

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	29.51	7.65	0.6570	2.03	0.190	144.7	320.3	144.7	750	-7,225	-40	1,388	-5,877
CATV	CATV 1.0	Unknown, COMMUNICATION	28.82	7.69	1.3300	0.74	0.337	57.6	200.3	57.6	650	23,476	28	98	23,602
CATV	CATV 1.0	Unknown, COMMUNICATION	28.82	7.69	1.3300	2.66	0.337	177.3	139.1	177.4	925	8,000	-87	2,648	10,561
CATV	CATV 1.0	Unknown, COMMUNICATION	28.82	7.69	1.3300	2.05	0.337	144.7	320.3	144.7	925	-8,705	-71	2,145	-6,631
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	27.63	7.77	0.6570	2.62	0.190	177.3	139.1	177.4	750	6,217	-50	1,604	7,771
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	27.63	7.77	0.6570	2.03	0.190	144.7	320.3	144.7	750	-6,764	-41	1,300	-5,506
Telco	TELE 1.5	Unknown, COMMUNICATION	25.97	7.87	1.5000	3.15	0.900	177.3	139.1	177.4	2,000	15,584	-155	2,607	18,036
Telco	TELE 1.5	Unknown, COMMUNICATION	25.97	7.87	1.5000	2.41	0.900	144.7	320.3	144.7	2,000	-16,957	-127	2,112	-14,972
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.68	7.94	0.6570	2.62	0.190	177.3	139.1	177.4	750	5,553	-51	1,433	6,935
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.68	7.94	0.6570	2.03	0.190	144.7	320.3	144.7	750	-6,042	-42	1,161	-4,923
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.04	7.98	0.6570	0.82	0.190	57.6	200.3	57.6	400	12,051	16	52	12,119
Totals:											31,828	-669	18,260	49,420	

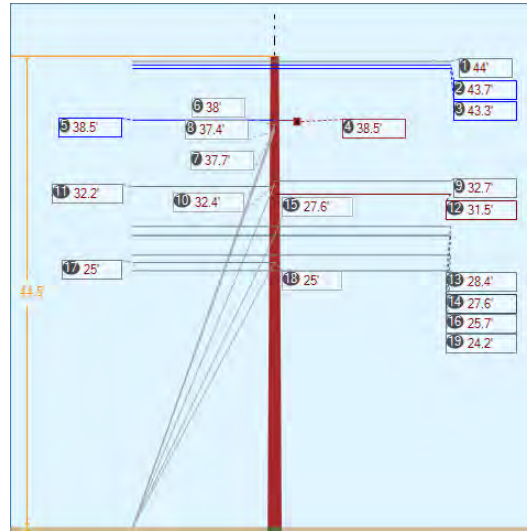
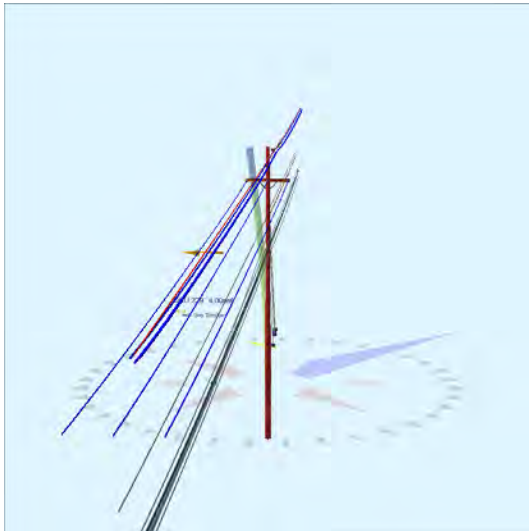
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal	Crossarm	44.96	5.98	199.3	199.3	50.00	4.50	3.50	96.00	0	2,626	2,626
Normal	Crossarm	40.43	6.25	319.2	319.2	50.00	4.50	3.50	96.00	-11	71	60
Normal	Crossarm	37.13	6.45	199.3	199.3	50.00	4.50	3.50	96.00	0	2,168	2,168
Totals:										-11	4,865	4,854

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension	Suspension 11.50" Power, UTILITY	47.58	0.00	220.0	220.0	11.00	4.75	11.50	27	125	152
Deadend	Deadend Insulator - 25 kV KU, UTILITY	44.96	0.00	199.3	0.0	3.00	3.90	17.13	11	144	155
Deadend	Deadend Insulator - 25 kV KU, UTILITY	44.96	45.00	281.7	0.0	3.00	3.90	17.13	17	144	161

Deadend	Deadend Insulator - 25 kV	KU, UTILITY	44.96	-45.00	116.9	0.0	3.00	3.90	17.13	4	144	149
Pin	Pin Insulator - 5 kV	KU, UTILITY	40.62	-18.00	248.3	0.0	6.00	3.50	7.50	15	51	67
Pin	Pin Insulator - 5 kV	KU, UTILITY	40.62	45.00	41.3	0.0	6.00	3.50	7.50	-43	51	8
Pin	Pin Insulator - 5 kV	KU, UTILITY	40.62	-45.00	237.1	0.0	6.00	3.50	7.50	40	51	92
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.13	-45.00	101.1	180.0	3.00	3.80	12.75	-15	86	72
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.13	0.00	19.3	180.0	3.00	3.80	12.75	-9	86	78
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.13	45.00	297.4	180.0	3.00	3.80	12.75	-3	86	84
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	37.13	0.00	199.3	0.0	3.00	3.90	17.13	11	119	130
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	37.13	45.00	281.1	0.0	3.00	3.90	17.13	17	119	136
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	37.13	-45.00	117.4	0.0	3.00	3.90	17.13	5	119	124
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.76	0.00	199.3	199.3	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.76	0.00	49.2	319.2	2.00	3.00	3.19	-2	15	13
Bolt	Three Bolt	Unknown, COMMUNICATION	29.51	0.00	49.2	319.2	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	28.82	0.00	199.3	289.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	28.82	0.00	49.2	319.2	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	27.63	0.00	49.2	319.2	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	25.97	0.00	49.2	409.2	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.68	0.00	49.3	319.3	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	24.04	0.00	199.3	289.3	5.00	3.00	0.00	6	0	6
Totals:										59	1,357	1,416

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	32.61	34.24	12.51	26.79	7.96	13.86	1.60e+6	60.00	57.00	49.06	26,354	263.38	3.10

Pole Num:	505W - 500-36	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	10.48	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.999506 Deg	Longitude:	-84.444528 Deg	Elevation:	880.407037781916		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	52.8	0.0
Groundline	52.8	0.0
Vertical	8.9	33.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	67,250	227.8
Groundline	67,250	227.8
GL Allowable	131,116	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	43.8	317.0		25.1	228.6	25.9	130.0
? EHS 3/8 (Down)			38.0	18.5	228.6	21.0	130.0
? EHS 3/8 (Down)			37.7	17.7	228.6	20.1	130.0
? Single Helix Anchor	41.9	317.0		11.9	228.6	12.3	130.0
? EHS 3/8 (Down)			37.4	17.2	228.6	19.5	130.0
? Single Helix Anchor	38.8	317.0		3.6	228.6	4.1	130.0
? EHS 3/8 (Down)			32.4	5.2	228.6	6.5	130.0
? Single Helix Anchor	10.2	230.0		0.0	228.6	11.7	50.0
? EHS 1/4 (Down)			27.6	0.0	228.6	43.0	50.0
? Single Helix Anchor	29.0	317.0		0.0	228.6	0.2	130.0
? EHS 1/4 (Down)			25.0	0.0	228.6	0.6	130.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 227.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	997	49.7	40,314	60.0	30.8	2,086	1,681	12	2,098	30.8
Comms	564	28.1	14,711	21.9	11.2	761	832	6	767	11.3
GuyBraces	153	7.6	5,542	8.2	4.2	287	8,122	58	345	5.1
Pole	276	13.8	6,087	9.1	4.6	315	3,195	23	338	5.0
Crossarms	3	0.1	95	0.1	0.1	5	190	1	6	0.1
Insulators	14	0.7	500	0.7	0.4	26	97	1	27	0.4
Pole Load	2,006	100.0	67,250	100.0	51.3	3,479	14,118	102	3,581	52.7
Pole Reserve Capacity			63,866		48.7	3,321			3,219	47.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 227.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	566	28.2	24,344	36.2	18.6	1,259	1,235	9	1,268	18.7
KU, UTILITY	588	29.3	21,785	32.4	16.6	1,127	8,606	62	1,189	17.5
Unknown, COMMUNICATION	573	28.6	14,939	22.2	11.4	773	892	6	779	11.5
Pole	276	13.8	6,087	9.1	4.6	315	3,195	23	338	5.0
<Undefined>	3	0.1	95	0.1	0.1	5	190	1	6	0.1
Totals:	2,006	100.0	67,250	100.0	51.3	3,479	14,118	102	3,581	52.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.00	15.51	0.5630	0.27	0.291	144.7	139.3	144.7	5,010	7,431	-25	1,973	9,380
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	44.00	15.51	0.5630	0.15	0.291	106.4	318.9	106.4	5,010	-5,431	-18	1,451	-3,998
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.67	11.51	1.1080	1.77	1.093	144.7	139.3	144.7	3,200	4,711	-70	2,962	7,603
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.67	19.51	1.1080	1.77	1.093	144.7	139.3	144.7	3,200	4,711	-70	2,962	7,603
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.67	11.51	1.1080	1.19	1.093	106.4	318.9	106.4	3,200	-3,443	-51	2,179	-1,316
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.67	19.51	1.1080	1.19	1.093	106.4	318.9	106.4	3,200	-3,443	-51	2,179	-1,316
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.33	15.51	1.1080	1.77	1.093	144.7	139.3	144.7	3,200	4,675	-70	2,940	7,544
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.33	15.51	1.1080	1.19	1.093	106.4	318.9	106.4	3,200	-3,416	-52	2,162	-1,306
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.47	23.22	0.7200	1.59	0.462	144.7	139.3	144.7	1,750	2,270	1	1,979	4,250
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.47	50.64	0.7200	1.59	0.462	144.7	139.3	144.7	1,750	2,270	34	1,979	4,283
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.47	50.64	0.7200	1.59	0.462	144.7	139.3	144.7	1,750	2,270	-33	1,979	4,216
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	32.72	7.19	0.5630	0.27	0.291	106.4	318.9	106.4	3,410	-2,749	-1	1,079	-1,670
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	32.19	7.22	0.5630	0.49	0.291	144.7	139.3	144.7	3,410	3,701	1	1,443	5,145
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	31.46	7.26	0.2570	0.18	0.067	106.4	318.9	106.4	1,216	-943	0	739	-204
Totals:											12,612	-406	28,007	40,214	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	28.43	7.45	0.6570	2.04	0.190	144.7	139.3	144.7	750	719	-40	1,387	2,066
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	28.43	7.45	0.6570	1.41	0.190	106.4	318.9	106.4	750	-525	-30	1,021	466
CATV	CATV 1.0	Unknown,	27.56	7.50	1.3300	2.05	0.337	144.7	139.3	144.7	925	859	-71	2,127	2,915
CATV	CATV 1.0	Unknown,	27.56	7.50	1.3300	1.42	0.337	106.4	318.9	106.4	925	-628	-52	1,565	885
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.71	7.61	0.6570	2.04	0.190	144.7	139.3	144.7	750	650	-41	1,254	1,863
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.71	7.61	0.6570	1.41	0.190	106.4	318.9	106.4	750	-475	-30	923	418
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.03	7.65	0.6570	2.04	0.190	144.7	139.3	144.7	750	633	1	1,221	1,855
Telco	TELE 1.5	Unknown,	24.22	7.70	1.5000	2.41	0.900	144.7	139.3	144.7	2,000	1,633	127	2,043	3,803
Telco	TELE 1.5	Unknown,	24.22	7.70	1.5000	1.65	0.900	106.4	318.9	106.4	2,000	-1,194	94	1,504	404
Totals:											1,672	-43	13,045	14,675	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.47	6.09	139.3	139.3	50.00	4.50	3.50	96.00	0	95	95	
Totals:											0	95	95

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	44.00	0.00	50.0	50.0	11.00	4.75	11.50	-27	117	90
Deadend	Deadend 17.13"	KU, UTILITY	38.47	0.00	139.3	0.0	3.00	3.90	17.13	0	125	125
Deadend	Deadend 17.13"	KU, UTILITY	38.47	45.00	221.6	0.0	3.00	3.90	17.13	22	125	147
Deadend	Deadend 17.13"	KU, UTILITY	38.47	-45.00	57.0	0.0	3.00	3.90	17.13	-21	125	104
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.72	0.00	318.9	318.9	2.00	3.00	3.19	0	15	15

Spool	Spool Insulator - 25 kV	KU, UTILITY	32.19	0.00	139.3	139.3	2.00	3.00	3.19	0	15	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.46	0.00	318.9	318.9	2.00	3.00	3.19	0	15	15
Bolt	Three Bolt	Unknown, COMMUNICATION	28.43	0.00	49.1	139.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	27.56	0.00	49.1	139.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.71	0.00	49.1	139.1	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.03	0.00	139.3	139.3	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	24.22	0.00	229.3	229.3	5.00	3.00	0.00	6	0	6
Totals:										-38	536	499

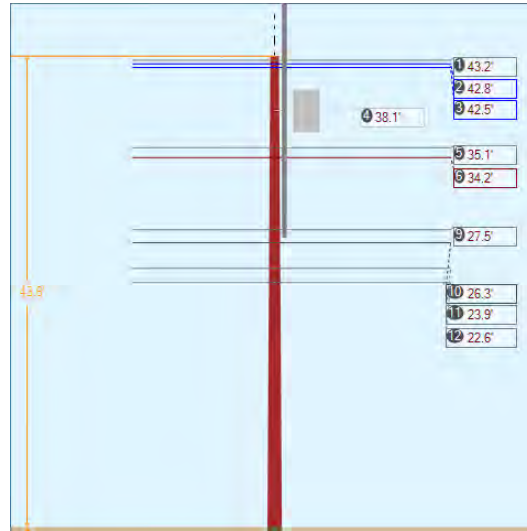
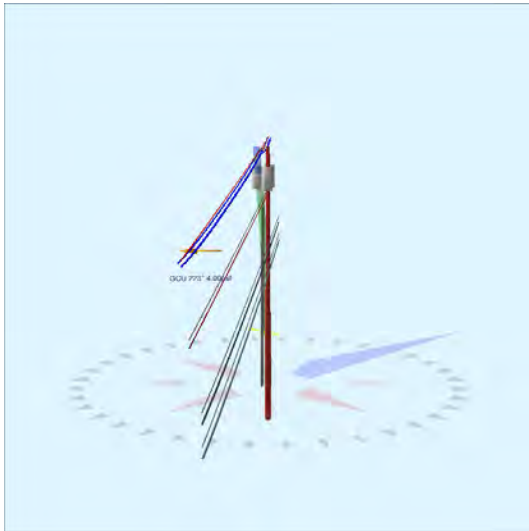
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	37.97	0.00	43.75	0.375	75.00	317.0	40.8	0.273	56.16	0.91
EHS 3/8	Down	KU, UTILITY	37.68	0.00	43.75	0.375	75.00	317.0	40.6	0.273	55.96	0.86
EHS 3/8	Down	KU, UTILITY	37.44	0.00	41.86	0.375	75.00	317.0	41.7	0.273	54.39	0.82
EHS 3/8	Down	KU, UTILITY	32.39	0.00	38.78	0.375	75.00	317.0	39.8	0.273	48.73	0.22
EHS 1/4	Down	Unknown, COMMUNICATION	27.56	0.00	10.23	0.25	75.00	230.0	69.4	0.121	27.75	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	25.03	0.00	29.00	0.25	75.00	317.0	40.7	0.121	36.48	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,905	2,641	2,562	1,675	1,938	28	1,599
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,784	2,531	2,452	1,596	1,861	26	1,544
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	2,709	2,463	2,384	1,585	1,780	25	1,476
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	905	823	727	465	559	8	671
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,576	2,342	0	0	0	0	30
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	37	33	0	0	0	0	208
Totals:										5,321	6,138	87	5,529

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	43.75	317.0	20,000	1.00	20,000	5,172	5,013	25.9
Single Helix Anchor		18.00	41.86	317.0	20,000	1.00	20,000	2,463	2,384	12.3
Single Helix Anchor		18.00	38.78	317.0	20,000	1.00	20,000	823	727	4.1
Single Helix Anchor		18.00	10.23	230.0	20,000	1.00	20,000	2,342	0	11.7
Single Helix Anchor		18.00	29.00	317.0	20,000	1.00	20,000	33	0	0.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	33.94	34.60	11.90	20.64	7.96	13.31	1.60e+6	60.00	57.00	44.52	159,183	1586.30	11.24

Pole Num:	506W - 500-35-20	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.83	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.999750 Deg	Longitude:	-84.444775 Deg	Elevation:	882.309384738304		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	31.3	0.0
Groundline	31.3	0.0
Vertical	33.7	31.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	39,930	226.8
Groundline	39,930	226.8
GL Allowable	131,326	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 226.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	426	35.8	17,704	44.3	13.5	916	727	5	921	13.5
Comms	263	22.1	6,290	15.8	4.8	326	399	3	328	4.8
PowerEquipments	164	13.8	8,508	21.3	6.5	440	3,648	26	466	6.9
Pole	270	22.7	5,805	14.5	4.4	300	3,129	22	323	4.7
Risers	63	5.3	1,468	3.7	1.1	76	126	1	77	1.1
Insulators	4	0.3	154	0.4	0.1	8	66	0	8	0.1
Pole Load	1,189	100.0	39,930	100.0	30.4	2,066	8,096	58	2,124	31.2
Pole Reserve Capacity			91,396		69.6	4,734			4,676	68.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 226.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	327	27.5	14,271	35.7	10.9	738	652	5	743	10.9
KU, UTILITY	329	27.7	13,587	34.0	10.4	703	3,877	28	731	10.7
Unknown, COMMUNICATION	263	22.1	6,266	15.7	4.8	324	437	3	327	4.8
Pole	270	22.7	5,805	14.5	4.4	300	3,129	22	323	4.7
Totals:	1,189	100.0	39,930	100.0	30.4	2,066	8,096	58	2,124	31.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.17	15.50	0.5630	0.15	0.291	106.4	138.9	106.4	5,010	7,862	18	1,415	9,295
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.17	15.50	0.5630	0.01	0.291	24.2	318.5	24.2	5,010	-6,353	4	322	-6,027
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	11.50	1.1080	1.19	1.093	106.4	138.9	106.4	3,200	4,983	51	2,123	7,157
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	19.50	1.1080	1.19	1.093	106.4	138.9	106.4	3,200	4,983	51	2,123	7,157
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	11.50	1.1080	0.22	1.093	24.2	318.5	24.3	3,200	-4,026	12	483	-3,531
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.83	19.50	1.1080	0.22	1.093	24.2	318.5	24.3	3,200	-4,026	12	483	-3,531

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	15.50	1.1080	1.19	1.093	106.4	138.9	106.4	3,200	4,944	52	2,107	7,102
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	15.50	1.1080	0.22	1.093	24.2	318.5	24.3	3,200	-3,995	12	480	-3,504
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.09	7.00	0.5630	0.27	0.291	106.4	138.9	106.4	3,410	4,350	32	1,150	5,532
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.09	7.00	0.5630	0.01	0.291	24.2	318.5	24.2	3,410	-3,515	7	261	-3,246
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.19	7.06	0.2570	0.18	0.067	106.4	138.9	106.4	1,216	1,511	13	798	2,323
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.19	7.06	0.2570	0.01	0.067	24.2	318.5	24.2	1,216	-1,221	3	181	-1,037
Totals:											5,496	267	11,928	17,690	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	27.52	7.47	0.6570	1.41	0.190	106.4	138.9	106.4	750	750	-30	982	1,703
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	27.52	7.47	0.6570	0.27	0.190	24.2	318.5	24.2	750	-606	-7	223	-390
CATV	CATV 1.0	Unknown,	26.30	7.54	1.3300	1.42	0.337	106.4	138.9	106.4	925	884	-53	1,484	2,316
CATV	CATV 1.0	Unknown,	26.30	7.54	1.3300	0.29	0.337	24.2	318.5	24.2	925	-715	-12	337	-389
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.93	7.69	0.6570	1.41	0.190	106.4	138.9	106.4	750	652	-31	854	1,476
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.93	7.69	0.6570	0.27	0.190	24.2	318.5	24.2	750	-527	-7	194	-340
Telco	TELE 1.5	Unknown,	22.61	7.77	1.5000	1.65	0.900	106.4	138.9	106.4	2,000	1,644	-94	1,395	2,944
Telco	TELE 1.5	Unknown,	22.61	7.77	1.5000	0.33	0.900	24.2	318.5	24.2	2,000	-1,328	-21	317	-1,033
Totals:											755	-254	5,785	6,286	

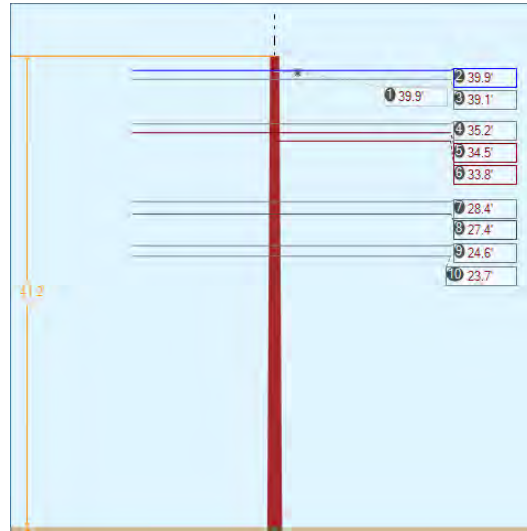
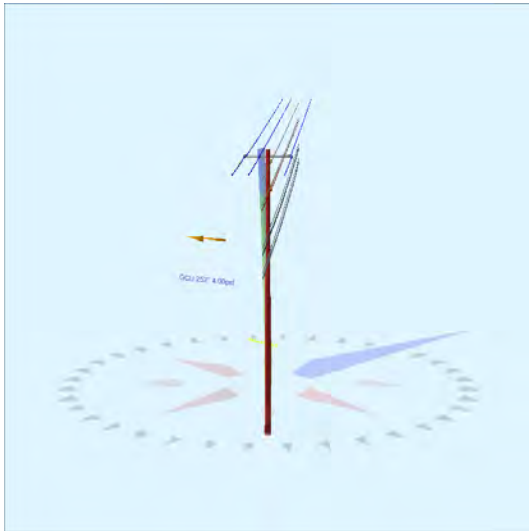
PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	38.06	22.32	230.0	230.0	640.00	47.00	--	24.00	--	2,258	6,244	8,502
Totals:											2,258	6,244	8,502	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 230.0°	Riser	KU, UTILITY	32.73	6.81	230.0	230.0	32.73	392.74	4.00	4.00	392.74	34	212	247
Riser 265.0°	Riser	KU, UTILITY	33.78	6.81	265.0	265.0	33.78	405.35	4.00	4.00	405.35	28	1,192	1,220
Totals:											62	1,405	1,467	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	43.17	0.00	230.0	230.0	11.00	4.75	11.50	27	114	141
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.09	0.00	228.7	138.7	2.00	3.00	3.19	2	16	18
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.19	0.00	228.7	138.7	2.00	3.00	3.19	2	16	18
Bolt	Three Bolt	Unknown, COMMUNICATION	27.52	0.00	48.7	138.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	26.30	0.00	48.7	138.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.93	0.00	48.7	138.7	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.61	0.00	48.7	138.7	5.00	3.00	0.00	-6	0	-6
Totals:										7	146	154

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	31.37	34.35	11.99	25.51	7.96	13.32	1.60e+6	60.00	57.00	43.56	24,029	240.23	2.97

Pole Num:	507W - 500-35	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.83	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.91	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	37.999769 Deg	Longitude:	-84.444806 Deg	Elevation:	879.147778911877		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.4	0.0
Groundline	43.4	0.0
Vertical	9.2	23.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	52,805	285.5
Groundline	52,805	285.5
GL Allowable	122,828	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 285.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,254	76.4	43,640	82.6	35.5	2,402	534	4	2,406	35.4
Comms	151	9.2	3,771	7.1	3.1	208	477	4	211	3.1
Pole	210	12.8	4,337	8.2	3.5	239	2,872	22	260	3.8
Crossarms	12	0.7	519	1.0	0.4	29	95	1	29	0.4
Insulators	13	0.8	538	1.0	0.4	30	87	1	30	0.4
Pole Load	1,640	100.0	52,805	100.0	43.0	2,906	4,065	31	2,936	43.2
Pole Reserve Capacity			70,023		57.0	3,894			3,864	56.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 285.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,267	77.2	44,191	83.7	36.0	2,432	583	4	2,436	35.8
Unknown, COMMUNICATION	151	9.2	3,758	7.1	3.1	207	515	4	211	3.1
Pole	210	12.8	4,337	8.2	3.5	239	2,872	22	260	3.8
<Undefined>	12	0.7	519	1.0	0.4	29	95	1	29	0.4
Totals:	1,640	100.0	52,805	100.0	43.0	2,906	4,065	31	2,936	43.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.91	48.50	0.7200	0.01	0.462	24.2	138.5	24.2	6,210	-207,790	-4	172	-207,622
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.91	19.29	0.7200	0.01	0.462	24.2	138.5	24.2	6,210	-207,790	1	172	-207,616
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.91	48.50	0.7200	0.01	0.462	24.2	138.5	24.2	6,210	-207,790	2	172	-207,615
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.91	25.85	0.7200	0.31	0.462	132.1	318.2	132.1	6,210	208,494	32	929	209,454
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.91	48.68	0.7200	0.31	0.462	132.1	318.2	132.1	6,210	208,494	-6	929	209,417
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.91	48.68	0.7200	0.31	0.462	132.1	318.2	132.1	6,210	208,494	27	929	209,449
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.14	6.60	0.3980	0.01	0.145	24.2	138.5	24.2	2,128	-69,821	-2	124	-69,700

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.14	6.60	0.3980	0.30	0.145	132.1	318.2	132.1	2,128	70,058	-13	670	70,715
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.25	6.84	0.5630	0.01	0.291	24.2	138.5	24.2	3,410	-100,762	-4	132	-100,634
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.25	6.84	0.5630	0.40	0.291	132.1	318.2	132.1	3,410	101,104	-21	714	101,797
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.46	6.89	0.2570	0.01	0.067	24.2	138.5	24.2	1,216	-35,130	-2	92	-35,040
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	34.46	6.89	0.2570	0.25	0.067	132.1	318.2	132.1	1,216	35,250	-9	497	35,738
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	33.76	6.93	0.2570	0.25	0.067	132.1	318.2	132.1	1,216	34,534	14	487	35,035
Totals:											37,345	15	6,019	43,379	

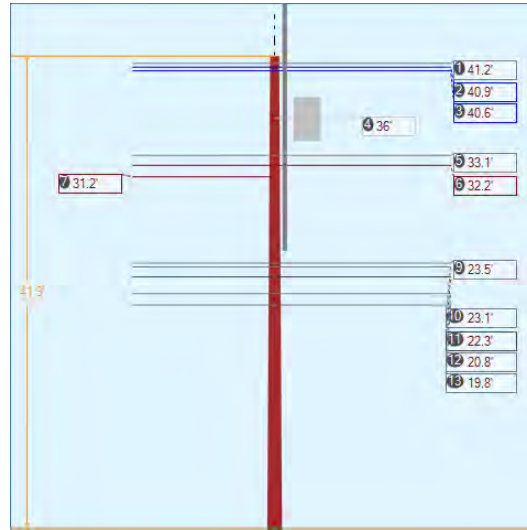
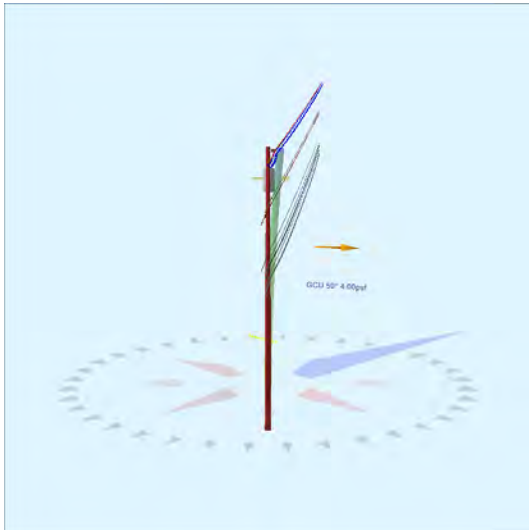
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	28.45	7.26	0.6570	0.27	0.190	24.2	138.5	24.2	750	-17,886	-4	116	-17,774
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	28.45	7.26	0.6570	1.80	0.190	132.1	318.2	132.1	750	17,947	-19	628	18,555
CATV	CATV 1.0	Unknown,	27.38	7.33	1.3300	0.29	0.337	24.2	138.5	24.2	925	-21,229	-6	176	-21,059
CATV	CATV 1.0	Unknown,	27.38	7.33	1.3300	1.83	0.337	132.1	318.2	132.1	925	21,301	-34	955	22,222
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.60	7.50	0.6570	0.27	0.190	24.2	138.5	24.2	750	-15,465	-4	100	-15,368
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.60	7.50	0.6570	1.80	0.190	132.1	318.2	132.1	750	15,518	-20	543	16,040
Telco	TELE 1.5	Unknown,	23.70	7.55	1.5000	0.33	0.900	24.2	138.5	24.2	2,000	-39,738	-11	167	-39,582
Telco	TELE 1.5	Unknown,	23.70	7.55	1.5000	2.14	0.900	132.1	318.2	132.1	2,000	39,873	-62	904	40,715
Totals:											320	-161	3,589	3,748	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	39.91	5.81	318.2	318.2	50.00	4.50	3.50	96.00	39	478	516	
Totals:											39	478	516

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	39.91	48.00	41.3	180.0	3.00	3.80	12.75	-15	78	63
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	39.91	-18.00	246.1	180.0	3.00	3.80	12.75	2	78	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	39.91	-48.00	235.1	180.0	3.00	3.80	12.75	10	78	88
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	39.91	-18.00	246.1	0.0	3.00	3.80	12.75	12	78	90
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	39.91	45.00	40.9	0.0	3.00	3.80	12.75	-4	78	74
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	39.91	-45.00	235.6	0.0	3.00	3.80	12.75	19	78	97
Spool	Spool Insulator - 25 kV	KU, UTILITY	39.14	0.00	48.2	318.2	2.00	3.00	3.19	-1	15	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.25	0.00	48.4	138.4	2.00	3.00	3.19	-1	14	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	34.46	0.00	48.4	138.4	2.00	3.00	3.19	-1	13	12
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.76	0.00	318.2	318.2	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	28.45	0.00	48.4	138.4	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	27.38	0.00	48.4	138.4	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	24.60	0.00	48.4	138.4	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	23.70	0.00	48.4	138.4	5.00	3.00	0.00	-3	0	-3
Totals:									9	526	534	

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	23.36	33.31	12.06	16.16	7.96	13.03	1.60e+6	60.00	57.00	41.17	44,406	441.85	10.87

Pole Num:	509W - 500-34	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.10	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.19	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.000091 Deg	Longitude:	-84.445148 Deg	Elevation:	880.652958522618		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	49.7	58.6
Groundline	49.7	58.6
Vertical	20.2	58.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	61,459	58.6
Groundline	61,459	58.6
GL Allowable	125,384	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 86.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,322	64.3	46,125	75.1	36.8	2,498	1,142	8	2,507	36.9
Comms	402	19.5	8,995	14.6	7.2	487	717	5	493	7.2
PowerEquipments	49	2.4	405	0.7	0.3	22	1,216	9	31	0.5
Pole	228	11.1	4,762	7.8	3.8	258	2,949	22	280	4.1
Risers	52	2.6	987	1.6	0.8	54	55	0	54	0.8
Insulators	4	0.2	185	0.3	0.2	10	89	1	11	0.2
Pole Load	2,056	100.0	61,459	100.0	49.0	3,329	6,168	46	3,374	49.6
Pole Reserve Capacity			63,925		51.0	3,471			3,426	50.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 86.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	442	21.5	18,425	30.0	14.7	998	1,010	7	1,005	14.8
KU, UTILITY	239	11.6	5,993	9.8	4.8	325	1,428	11	335	4.9
Unknown, COMMUNICATION	1,147	55.8	32,279	52.5	25.7	1,748	781	6	1,754	25.8
Pole	228	11.1	4,762	7.8	3.8	258	2,949	22	280	4.1
Totals:	2,056	100.0	61,459	100.0	49.0	3,329	6,168	46	3,374	49.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.25	15.52	0.5630	0.04	0.291	16.4	138.7	16.4	5,010	126,143	2	164	126,309
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.25	15.52	0.5630	0.45	0.291	188.2	319.5	188.2	5,010	-123,845	28	1,903	-121,914
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	11.52	1.1080	0.15	1.093	16.4	138.7	16.6	3,200	79,919	7	246	80,172
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	19.52	1.1080	0.15	1.093	16.4	138.7	16.6	3,200	79,919	7	246	80,172
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	11.52	1.1080	2.54	1.093	188.2	319.5	188.2	3,200	-78,463	78	2,855	-75,530
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	19.52	1.1080	2.54	1.093	188.2	319.5	188.2	3,200	-78,463	78	2,855	-75,530

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.58	15.52	1.1080	0.15	1.093	16.4	138.7	16.6	3,200	79,268	7	244	79,518
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.58	15.52	1.1080	2.54	1.093	188.2	319.5	188.2	3,200	-77,824	78	2,832	-74,914
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	33.08	7.02	0.5630	0.03	0.291	16.4	138.7	16.4	3,410	68,853	4	132	68,988
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	33.08	7.02	0.5630	0.80	0.291	188.2	319.5	188.2	3,410	-67,598	45	1,526	-66,027
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	32.18	7.08	0.2570	0.03	0.067	16.4	138.7	16.4	1,216	23,888	2	91	23,981
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	32.18	7.08	0.2570	0.54	0.067	188.2	319.5	188.2	1,216	-23,453	19	1,057	-22,377
Secondary	ACSR 4 AWG 7/1 SWANATE	Unknown, COMMUNICATION	31.16	7.14	0.2570	0.03	0.067	16.4	138.7	16.4	1,216	23,130	1	88	23,219
											Totals:	31,473	356	14,236	46,065

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	23.51	7.61	0.6570	2.82	0.190	188.2	319.5	188.2	750	-10,566	-32	1,180	-9,418	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	23.51	7.61	0.6570	0.18	0.190	16.4	138.7	16.4	750	10,762	3	102	10,867	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	23.14	7.63	0.6570	0.18	0.190	16.4	138.7	16.4	750	10,595	4	100	10,699	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	23.14	7.63	0.6570	2.82	0.190	188.2	319.5	188.2	750	-10,402	43	1,162	-9,197	
CATV	CATV 1.0 COMMUNICATION	22.26	7.69	1.3300	0.20	0.337	16.4	138.7	16.4	925	12,569	7	152	12,728	
CATV	CATV 1.0 COMMUNICATION	22.26	7.69	1.3300	2.88	0.337	188.2	319.5	188.2	925	-12,340	76	1,768	-10,497	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	20.78	7.78	0.6570	0.18	0.190	16.4	138.7	16.4	750	9,514	4	90	9,607	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	20.78	7.78	0.6570	2.82	0.190	188.2	319.5	188.2	750	-9,340	44	1,043	-8,253	
Telco	TELE 1.5 COMMUNICATION	19.76	7.84	1.5000	0.22	0.900	16.4	138.7	16.4	2,000	24,124	12	148	24,284	
Telco	TELE 1.5 COMMUNICATION	19.76	7.84	1.5000	3.42	0.900	188.2	319.5	188.3	2,000	-23,685	134	1,715	-21,836	
											Totals:	1,231	293	7,460	8,984

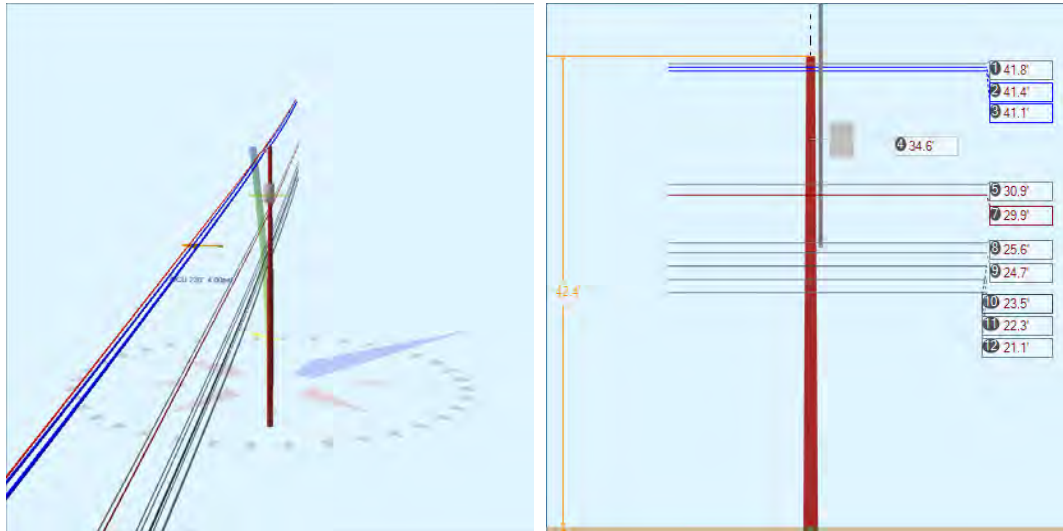
PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-50KVA	KU, UTILITY	35.96	22.34	320.0	320.0	640.00	47.00	--	24.00	--	-1,341	1,746	405
Totals:												-1,341	1,746	405

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 300.0°	Riser	KU, UTILITY	28.92	6.81	300.0	300.0	28.92	347.01	4.00	4.00	347.01	-25	1,011	986
Totals:												-25	1,011	986

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	41.25	0.00	55.0	55.0	11.00	4.75	11.50	23	97	120	
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.08	0.00	49.1	319.1	2.00	3.00	3.19	2	14	15	
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.18	0.00	49.1	319.1	2.00	3.00	3.19	2	13	15	
Spool	Spool Insulator - 25 kV	Unknown, COMMUNICATION	31.16	0.00	138.7	138.7	2.00	3.00	3.19	1	13	14	
Bolt	Single Bolt	Unknown, COMMUNICATION	23.51	0.00	319.5	409.5	5.00	3.00	0.00	-4	0	-4	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.51	0.00	138.7	138.7	5.00	3.00	0.00	4	0	4	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.14	0.00	49.1	319.1	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.26	0.00	49.1	319.1	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.78	0.00	49.1	319.1	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.76	0.00	49.1	319.1	5.00	3.00	0.00	5	0	5	
Totals:											48	137	184

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	27.68	33.89	11.96	21.11	7.96	13.12	1.60e+6	60.00	57.00	41.90	30,516	305.37	4.95

Pole Num:	510W - 500-33	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.57	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.39	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.000470 Deg	Longitude:	-84.445519 Deg	Elevation:	881.366751176749		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	51.2	230.0
Groundline	51.2	230.0
Vertical	22.0	230.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	64,242	228.2
Groundline	64,242	228.2
GL Allowable	127,257	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 228.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	966	46.9	38,259	59.6	30.1	2,039	1,728	13	2,051	30.2
Comms	733	35.6	17,732	27.6	13.9	945	1,088	8	953	14.0
PowerEquipments	42	2.0	1,484	2.3	1.2	79	694	5	84	1.2
Pole	261	12.7	5,504	8.6	4.3	293	3,006	22	315	4.6
Risers	54	2.6	1,062	1.7	0.8	57	57	0	57	0.8
Insulators	4	0.2	201	0.3	0.2	11	76	1	11	0.2
Pole Load	2,060	100.0	64,242	100.0	50.5	3,423	6,648	49	3,472	51.1
Pole Reserve Capacity			63,015		49.5	3,377			3,328	48.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 228.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	740	35.9	31,243	48.6	24.6	1,665	1,522	11	1,676	24.6
KU, UTILITY	326	15.8	9,733	15.2	7.7	519	985	7	526	7.7
Unknown, COMMUNICATION	733	35.6	17,762	27.7	14.0	947	1,135	8	955	14.0
Pole	261	12.7	5,504	8.6	4.3	293	3,006	22	315	4.6
Totals:	2,060	100.0	64,242	100.0	50.5	3,423	6,648	49	3,472	51.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.52	0.5630	0.45	0.291	188.2	139.5	188.2	5,010	4,651	32	2,435	7,119
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.52	0.5630	0.19	0.291	122.3	318.7	122.3	5,010	-1,731	21	1,583	-128
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.52	1.1080	2.54	1.093	188.2	139.5	188.2	3,200	2,947	91	3,655	6,692
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.52	1.1080	2.54	1.093	188.2	139.5	188.2	3,200	2,947	91	3,655	6,692
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.52	1.1080	1.42	1.093	122.3	318.7	122.3	3,200	-1,097	59	2,375	1,337
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.52	1.1080	1.42	1.093	122.3	318.7	122.3	3,200	-1,097	59	2,375	1,337

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.52	1.1080	2.54	1.093	188.2	139.5	188.2	3,200	2,924	91	3,625	6,640
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.52	1.1080	1.42	1.093	122.3	318.7	122.3	3,200	-1,088	59	2,356	1,327
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	30.86	7.19	0.5630	0.81	0.291	188.2	139.5	188.2	3,410	2,340	58	1,800	4,198
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	30.86	7.19	0.5630	0.36	0.291	122.3	318.7	122.3	3,410	-871	38	1,170	337
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	29.93	7.25	0.2570	0.55	0.067	188.2	139.5	188.2	1,216	809	24	1,243	2,077
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	29.93	7.25	0.2570	0.23	0.067	122.3	318.7	122.3	1,216	-301	16	808	522
Totals:											10,433	639	27,079	38,151	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.61	7.51	0.6570	2.83	0.190	188.2	139.5	188.2	750	427	53	1,626	2,105
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.61	7.51	0.6570	1.66	0.190	122.3	318.7	122.3	750	-159	34	1,057	932
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.71	7.57	0.6570	2.83	0.190	188.2	139.5	188.2	750	412	53	1,569	2,034
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.71	7.57	0.6570	1.66	0.190	122.3	318.7	122.3	750	-153	35	1,020	901
CATV	CATV 1.0	Unknown,	23.51	7.64	1.3300	2.88	0.337	188.2	139.5	188.2	925	484	94	2,361	2,939
CATV	CATV 1.0	Unknown,	23.51	7.64	1.3300	1.67	0.337	122.3	318.7	122.3	925	-180	61	1,534	1,416
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.31	7.72	0.6570	2.83	0.190	188.2	139.5	188.2	750	372	54	1,416	1,843
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.31	7.72	0.6570	1.66	0.190	122.3	318.7	122.3	750	-138	35	920	817
Telco	TELE 1.5	Unknown,	21.14	7.79	1.5000	3.42	0.900	188.2	139.5	188.3	2,000	940	168	2,320	3,428
Telco	TELE 1.5	Unknown,	21.14	7.79	1.5000	1.95	0.900	122.3	318.7	122.3	2,000	-350	109	1,508	1,267
Totals:											1,654	696	15,331	17,682	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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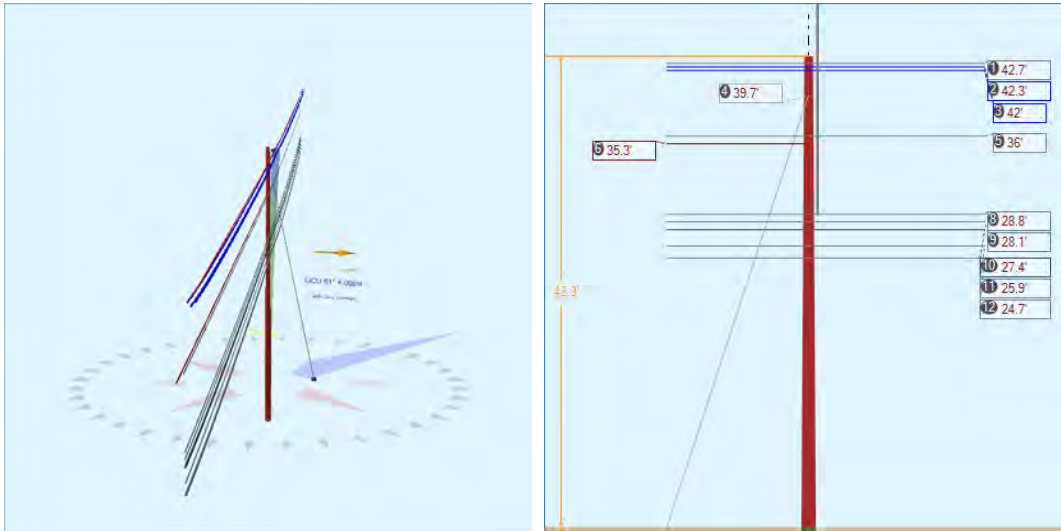
Transformer	1PH-25KVA	KU, UTILITY	34.59	21.46	140.0	140.0	365.00	39.00	--	22.00	--	38	1,442	1,480
Totals:												38	1,442	1,480

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	29.97	6.81	360.0	360.0	29.97	359.67	4.00	4.00	359.67	-11	1,070	1,059
Totals:												-11	1,070	1,059

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	41.75	0.00	235.0	235.0	11.00	4.75	11.50	27	111	138
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.86	0.00	229.1	139.1	2.00	3.00	3.19	2	14	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.93	0.00	229.1	139.1	2.00	3.00	3.19	2	14	16
Bolt	Single Bolt	Unknown, COMMUNICATION	25.61	0.00	229.5	229.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.71	0.00	229.5	139.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.51	0.00	229.1	139.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.31	0.00	229.1	139.1	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.14	0.00	229.1	139.1	5.00	3.00	0.00	6	0	6
Totals:										62	139	201

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.03	33.92	12.01	22.01	7.96	13.18	1.60e+6	60.00	57.00	42.43	30,250	302.19	4.55

Pole Num:	511W - 500-32	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.68	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.74	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.000747 Deg	Longitude:	-84.445841 Deg	Elevation:	888.272144026447		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	52.6	0.0
Groundline	52.6	0.0
Vertical	2.4	201.3

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	67,803	106.2
Groundline	67,803	106.2
GL Allowable	130,467	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	9.3	21.3		0.0	60.5	30.1	220.0
? EHS 3/8 (Down)			39.7	0.0	60.5	47.8	220.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 106.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,509	74.5	54,607	80.5	41.9	2,843	1,624	12	2,855	42.0
Comms	286	14.1	8,032	11.9	6.2	418	1,046	8	426	6.3
GuyBraces	7	0.3	265	0.4	0.2	14	13	0	14	0.2
Pole	188	9.3	4,021	5.9	3.1	209	3,103	22	232	3.4
Risers	33	1.6	742	1.1	0.6	39	66	0	39	0.6
Insulators	3	0.1	136	0.2	0.1	7	76	1	8	0.1
Pole Load	2,025	100.0	67,803	100.0	52.0	3,530	5,928	43	3,573	52.5
Pole Reserve Capacity			62,664		48.0	3,270			3,227	47.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 106.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	145	7.1	6,398	9.4	4.9	333	1,465	11	344	5.1
KU, UTILITY	1,407	69.5	49,336	72.8	37.8	2,569	267	2	2,571	37.8
Unknown, COMMUNICATION	286	14.1	8,047	11.9	6.2	419	1,094	8	427	6.3
Pole	188	9.3	4,021	5.9	3.1	209	3,103	22	232	3.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	2,025	100.0	67,803	100.0	52.0	3,530	5,928	43	3,573	52.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.67	15.52	0.5630	0.19	0.291	122.3	138.7	122.3	5,010	234,357	12	851	235,220
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.67	15.52	0.5630	0.39	0.291	176.3	318.0	176.3	5,010	-236,164	17	1,200	-234,947
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	11.52	1.1080	1.42	1.093	122.3	138.7	122.3	3,200	148,520	33	1,277	149,830
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	19.52	1.1080	1.42	1.093	122.3	138.7	122.3	3,200	148,520	33	1,277	149,830
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	11.52	1.1080	2.32	1.093	176.3	318.0	176.3	3,200	-149,665	48	1,801	-147,817

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	19.52	1.1080	2.32	1.093	176.3	318.0	176.3	3,200	-149,665	48	1,801	-147,817
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.00	15.52	1.1080	1.42	1.093	122.3	138.7	122.3	3,200	147,350	33	1,267	148,650
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.00	15.52	1.1080	2.32	1.093	176.3	318.0	176.3	3,200	-148,486	48	1,787	-146,652
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.97	6.93	0.5630	0.35	0.291	122.3	138.7	122.3	3,410	134,473	19	717	135,210
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	35.97	6.93	0.5630	0.71	0.291	176.3	318.0	176.3	3,410	-135,510	28	1,011	-134,471
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	35.25	6.98	0.2570	0.23	0.067	122.3	138.7	122.3	1,216	47,000	13	501	47,513
Totals:											40,730	331	13,489	54,550	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	28.79	7.37	0.6570	1.66	0.190	122.3	138.7	122.3	750	23,672	18	625	24,315
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	28.79	7.37	0.6570	2.59	0.190	176.3	318.0	176.3	750	-23,855	26	881	-22,948
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	28.10	7.41	0.6570	1.66	0.190	122.3	138.7	122.3	750	23,108	18	610	23,737
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	28.10	7.41	0.6570	2.59	0.190	176.3	318.0	176.3	750	-23,287	26	860	-22,400
CATV	CATV 1.0 COMMUNICATION	Unknown,	27.35	7.46	1.3300	1.67	0.337	122.3	138.7	122.3	925	27,741	32	939	28,712
CATV	CATV 1.0 COMMUNICATION	Unknown,	27.35	7.46	1.3300	2.64	0.337	176.3	318.0	176.4	925	-27,955	46	1,324	-26,584
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.87	7.55	0.6570	1.66	0.190	122.3	138.7	122.3	750	21,273	18	562	21,853
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	25.87	7.55	0.6570	2.59	0.190	176.3	318.0	176.3	750	-21,437	27	792	-20,618
Telco	TELE 1.5 COMMUNICATION	Unknown,	24.74	7.62	1.5000	1.95	0.900	122.3	138.7	122.3	2,000	54,257	57	928	55,242
Telco	TELE 1.5 COMMUNICATION	Unknown,	24.74	7.62	1.5000	3.13	0.900	176.3	318.0	176.4	2,000	-54,675	82	1,309	-53,284
Totals:											-1,157	349	8,831	8,023	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 307.0°	Riser	KU, UTILITY	34.90	6.81	307.0	307.0	34.90	418.80	2.50	2.50	418.80	-18	759	741	
												Totals:	-18	759	741

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	42.67	0.00	50.0	50.0	11.00	4.75	11.50	15	79	94	
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.97	0.00	48.4	138.4	2.00	3.00	3.19	1	12	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.25	0.00	138.7	138.7	2.00	3.00	3.19	2	11	13	
Bolt	Three Bolt	Unknown, COMMUNICATION	28.79	0.00	48.4	138.4	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	28.10	0.00	48.4	138.4	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	27.35	0.00	48.4	138.4	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	25.87	0.00	48.4	138.4	5.00	3.00	0.00	3	0	3	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.74	0.00	48.4	138.4	5.00	3.00	0.00	3	0	3	
										Totals:	34	102	136

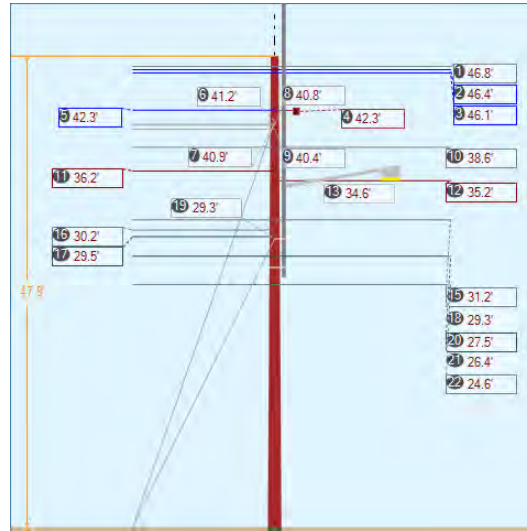
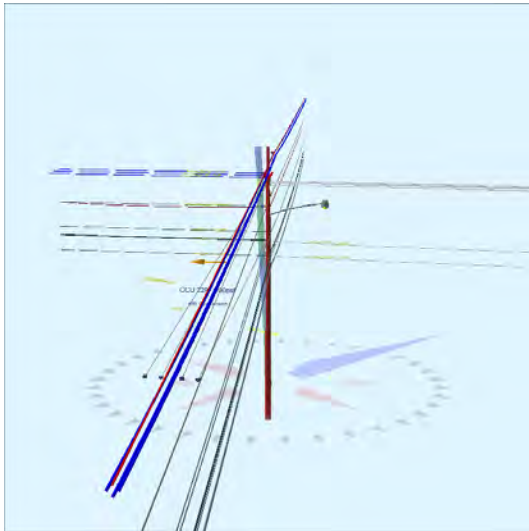
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	39.73	0.00	9.26	0.375	75.00	21.3	76.6	0.273	39.22	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension* ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)		
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	6,627	6,025	0	0	0	0	264	
										Totals:	0	0	0	264

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	9.26	21.3	20,000	1.00	20,000	6,025	0	30.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	28.16	33.91	12.11	12.45	7.96	13.29	1.60e+6	60.00	57.00	43.32	248,306	2470.20	41.67

Pole Num:	512W - 26982-3160	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.19	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.05	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.001086 Deg	Longitude:	-84.446172 Deg	Elevation:	880.263319779232		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	50.3	40.3
Groundline	30.3	0.0
Vertical	3.7	31.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	18,812	232.5
Groundline	26,147	240.2
GL Allowable	143,143	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	26.0	237.0		0.0	228.6	0.0	0.0
? EHS 3/8 (Down)			41.2	0.0	228.6	0.0	0.0
? Single Helix Anchor	174.8	55.2		53.2	228.6	53.2	229.8
? EHS 3/8 (Span/Head)			41.2	34.0	228.6	37.4	229.3
? EHS 3/8 (Span/Head)			40.9	33.7	228.6	37.1	230.0
? EHS 3/8 (Span/Head)			40.8	33.6	228.6	36.9	230.0
? EHS 3/8 (Span/Head)			40.4	33.2	228.6	36.5	230.0
? Single Helix Anchor	22.5	237.0		0.0	228.6	0.0	0.0
? EHS 3/8 (Down)			40.9	0.0	228.6	0.0	0.0
? EHS 3/8 (Down)			40.8	0.0	228.6	0.0	0.0
? Single Helix Anchor	18.1	237.0		0.0	228.6	0.0	0.0
? EHS 3/8 (Down)			40.4	0.0	228.6	0.0	0.0
? Single Helix Anchor	14.6	237.0		0.0	228.6	0.0	0.0
? EHS 1/4 (Down)			29.3	0.0	228.6	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 240.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	17,876	1362.1	735,477	2812.9	513.8	34,548	2,192	15	34,562	508.3
Comms	1,537	117.1	45,565	174.3	31.8	2,140	1,398	9	2,150	31.6
GuyBraces	-18,565	-1414.6	-766,531	-2931.6	-535.5	-36,006	227	2	-36,005	-529.5
Pole	296	22.5	7,000	26.8	4.9	329	3,568	24	353	5.2
Crossarms	66	5.0	2,825	10.8	2.0	133	190	1	134	2.0
Streetlights	31	2.4	-62	-0.2	0.0	-3	162	1	-2	0.0
Risers	58	4.4	1,330	5.1	0.9	63	65	0	63	0.9
Insulators	13	1.0	543	2.1	0.4	26	150	1	27	0.4
Pole Load	1,312	100.0	26,147	100.0	18.3	1,228	7,951	54	1,282	18.9
Pole Reserve Capacity			116,996		81.7	5,572			5,518	81.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 240.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	507	38.6	23,141	88.5	16.2	1,087	1,847	13	1,100	16.2
KU, UTILITY	-977	-74.4	-49,365	-188.8	-34.5	-2,319	1,026	7	-2,312	-34.0
Unknown, COMMUNICATION	1,420	108.2	42,546	162.7	29.7	1,999	1,320	9	2,007	29.5
Pole	296	22.5	7,000	26.8	4.9	329	3,568	24	353	5.2
<Undefined>	66	5.0	2,825	10.8	2.0	133	190	1	134	2.0
Totals:	1,312	100.0	26,147	100.0	18.3	1,228	7,951	54	1,282	18.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	46.75	15.54	0.5630	0.40	0.291	176.3	138.0	176.3	5,010	-64,127	-30	2,498	-61,660
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	46.75	15.54	0.5630	0.52	0.291	201.3	318.4	201.3	5,010	62,048	-34	2,856	64,870
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.42	11.54	1.1080	2.32	1.093	176.3	138.0	176.3	3,200	-40,668	-85	3,752	-37,000
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.42	19.54	1.1080	2.32	1.093	176.3	138.0	176.3	3,200	-40,668	-85	3,752	-37,000
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.42	11.54	1.1080	2.80	1.093	201.3	318.4	201.3	3,200	39,349	-97	4,290	43,542
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.42	19.54	1.1080	2.80	1.093	201.3	318.4	201.3	3,200	39,349	-97	4,290	43,542
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.08	15.54	1.1080	2.32	1.093	176.3	138.0	176.3	3,200	-40,375	-85	3,725	-36,736
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	46.08	15.54	1.1080	2.80	1.093	201.3	318.4	201.3	3,200	39,066	-97	4,259	43,228
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.31	18.81	0.7200	0.15	0.462	41.9	234.1	41.9	3,210	175,584	11	-6	175,588
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.31	48.77	0.7200	0.15	0.462	41.9	234.1	41.9	3,210	175,584	6	-6	175,584
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	42.31	48.77	0.7200	0.15	0.462	41.9	234.1	41.9	3,210	175,584	2	-6	175,580
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	38.55	7.04	0.5630	0.72	0.291	176.3	138.0	176.3	3,410	-35,992	-52	2,060	-33,984
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	38.55	7.04	0.5630	0.92	0.291	201.3	318.4	201.3	3,410	34,825	-60	2,355	37,120
Secondary	DUPLEX 4 AWG	KU, UTILITY	36.15	7.18	0.6300	0.39	0.107	41.9	234.1	41.9	50	2,337	9	-5	2,341

Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	36.15	17.43	0.5630	0.04	0.291	41.9	234.1	41.9	3,410	159,362	8	-5	159,365
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	35.16	7.24	0.2570	0.62	0.067	201.3	318.4	201.3	1,216	11,327	5	1,530	12,862
											Totals:	692,584	-679	35,338	727,242

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	31.20	7.48	0.6570	2.60	0.190	176.3	138.0	176.3	750	-6,406	-48	1,814	-4,640
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	31.20	7.48	0.6570	3.08	0.190	201.3	318.4	201.3	750	6,198	-55	2,074	8,217
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	31.20	7.48	0.6570	0.48	0.190	41.9	234.1	41.9	750	30,246	12	-4	30,253
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	30.17	7.54	0.6570	2.60	0.190	176.3	138.0	176.3	750	-6,195	-10	1,755	-4,451
CATV	CATV 1.0	Unknown,	29.48	7.58	1.3300	0.51	0.337	41.9	234.1	41.9	925	35,253	20	-7	35,267
Overlashed Bundle	1/4" EHS	Unknown,	29.25	7.59	0.2500	0.84	0.121	174.8	55.2	174.8	800	-30,310	-30	-12	-30,352
CATV	CATV 1.0	Unknown,	27.51	7.70	1.3300	2.64	0.337	176.3	138.0	176.4	925	-6,966	-87	2,530	-4,523
CATV	CATV 1.0	Unknown,	27.51	7.70	1.3300	3.15	0.337	201.3	318.4	201.3	925	6,740	-99	2,893	9,534
Overlashed Bundle	1/4" EHS	Unknown,	26.36	7.77	0.2500	0.84	0.121	174.8	55.2	174.8	800	-27,308	-31	-10	-27,349
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	KU, UTILITY	26.36	7.77	0.6570	2.60	0.190	176.3	138.0	176.3	750	-5,412	-50	1,533	-3,929
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	KU, UTILITY	26.36	7.77	0.6570	3.08	0.190	201.3	318.4	201.3	750	5,237	-57	1,752	6,932
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.36	7.77	0.6570	0.48	0.190	41.9	234.1	41.9	750	25,554	12	-4	25,562
Telco	TELE 1.5	Unknown,	24.62	7.87	1.5000	3.13	0.900	176.3	138.0	176.4	2,000	-13,479	-155	2,475	-11,160
Telco	TELE 1.5	Unknown,	24.62	7.87	1.5000	3.75	0.900	201.3	318.4	201.3	2,000	13,042	-177	2,829	15,694
											Totals:	26,193	-756	19,618	45,055

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		42.31	6.06	229.5	229.5	50.00	4.50	3.50	96.00	0	2,793	2,793
Totals:										0	2,793	2,793

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 10 ft. Arm	KU, UTILITY	34.59	4.77	42.0	42.0	85.00	24.00	20.00	3.00	120.00	-1,149	1,087	-62
Totals:										-1,149	1,087	-62	

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	KU, UTILITY	34.05	7.04	360.0	360.0	34.05	408.59	4.00	4.00	408.59	-10	1,325	1,316
Totals:										-10	1,325	1,316	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension	Power, UTILITY	46.75	0.00	50.0	50.0	11.00	4.75	11.50	-27	122	95
Deadend	KU, UTILITY	42.31	0.00	229.5	0.0	3.00	3.80	12.75	9	98	106
Deadend	KU, UTILITY	42.31	45.00	311.8	0.0	3.00	3.80	12.75	13	98	110
Deadend	KU, UTILITY	42.31	-45.00	147.1	0.0	3.00	3.80	12.75	5	98	102
Spool	KU, UTILITY	38.55	0.00	48.2	318.2	2.00	3.00	3.19	-2	18	15
Spool	KU, UTILITY	36.15	0.00	229.5	229.5	2.00	3.00	3.19	2	16	19
Deadend	KU, UTILITY	36.15	0.00	229.5	229.5	3.00	3.80	12.75	8	83	92
Spool	KU, UTILITY	35.16	0.00	318.4	318.4	2.00	3.00	3.19	0	16	16
Bolt	Unknown, COMMUNICATION	31.20	0.00	48.2	318.2	5.00	3.00	0.00	-6	0	-6
Bolt	Unknown, COMMUNICATION	31.20	0.00	229.5	319.5	5.00	3.00	0.00	6	0	6
Bolt	Unknown, COMMUNICATION	30.17	0.00	138.0	228.0	5.00	3.00	0.00	-1	0	-1
Bolt	Unknown, COMMUNICATION	29.48	0.00	229.5	319.5	5.00	3.00	0.00	6	0	6
Bolt	Unknown, COMMUNICATION	29.25	0.00	55.2	145.2	5.00	3.00	0.00	-6	0	-6
Bolt	Unknown, COMMUNICATION	27.51	0.00	48.2	318.2	5.00	3.00	0.00	-6	0	-6

Bolt	Single Bolt	Unknown, COMMUNICATION	26.36	0.00	55.2	145.2	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	KU, UTILITY	26.36	0.00	48.2	318.2	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	26.36	0.00	229.5	319.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.62	0.00	48.2	318.2	5.00	3.00	0.00	-6	0	-6
Totals:										-11	548	537

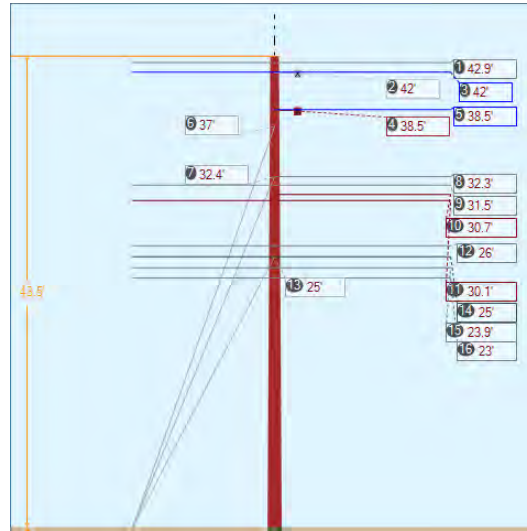
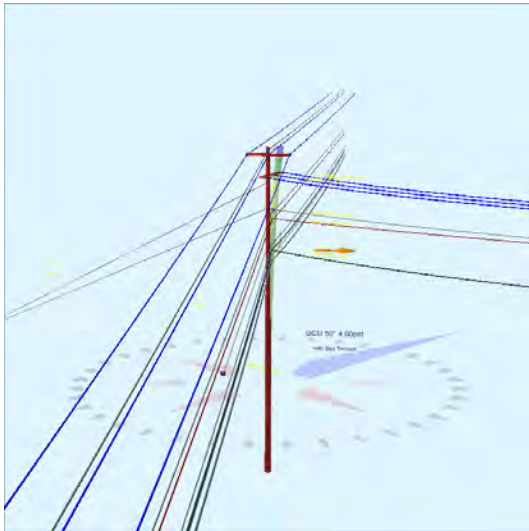
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	41.20	0.00	26.00	0.375	75.00	237.0	57.5	0.273	47.02	0.00
EHS 3/8	Span/Head	KU, UTILITY	41.18	41.18	174.84	0.375	75.00	55.2	0.0	0.273	172.98	5.13
EHS 3/8	Span/Head	KU, UTILITY	40.92	40.92	174.84	0.375	75.00	55.2	0.0	0.273	172.97	5.09
EHS 3/8	Span/Head	KU, UTILITY	40.80	40.80	174.84	0.375	75.00	55.2	0.0	0.273	172.97	5.07
EHS 3/8	Span/Head	KU, UTILITY	40.39	40.39	174.84	0.375	75.00	55.2	0.0	0.273	172.97	5.01
EHS 3/8	Down	KU, UTILITY	40.92	0.00	22.52	0.375	75.00	237.0	61.0	0.273	45.03	0.00
EHS 3/8	Down	KU, UTILITY	40.79	0.00	22.52	0.375	75.00	237.0	60.9	0.273	44.92	0.00
EHS 3/8	Down	KU, UTILITY	40.39	0.00	18.07	0.375	75.00	237.0	65.7	0.273	42.60	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	29.25	0.00	14.62	0.25	75.00	237.0	63.2	0.121	31.02	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	41
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,183	4,712	4,712	0	4,712	-4,694	-193,381
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,138	4,671	4,671	0	4,671	-4,653	-190,481
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,118	4,653	4,653	0	4,653	-4,635	-189,175
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,059	4,599	4,599	0	4,599	-4,581	-185,105
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	41
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	41
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	41
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	30
Totals:										0	18,634	-18,564	-757,948

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	26.00	237.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	174.84	55.2	35,000	1.00	35,000	18,634	18,634	53.2
Single Helix Anchor		18.00	22.52	237.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	18.07	237.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	14.62	237.0	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	31.75	34.18	12.40	15.21	7.96	13.71	1.60e+6	60.00	57.00	47.81	214,582	2149.05	27.03

Pole Num:	513W - 26982-3150	Pole Length / Class:	60 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	16.55	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.09	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.001537 Deg	Longitude:	-84.446704 Deg	Elevation:	885.196178873491		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	63.2	37.0
Groundline	56.9	0.0
Vertical	9.4	79.2

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	22,229	58.8
Groundline	62,272	343.3
GL Allowable	124,505	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	72.6	252.0		66.6	50.0	66.6	52.8
? EHS 3/8 (Down)			37.0	62.7	50.0	69.0	52.8
? EHS 3/8 (Down)			32.4	33.4	50.0	36.7	52.8
? Single Helix Anchor	11.2	266.3		0.0	50.0	0.0	0.0
? EHS 1/4 (Down)			25.0	0.0	50.0	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 343.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,438	81.2	56,746	91.1	45.6	3,092	2,057	15	3,108	45.7
Comms	467	26.4	11,681	18.8	9.4	637	1,274	9	646	9.5
GuyBraces	-254	-14.3	-9,041	-14.5	-7.3	-493	8,833	66	-427	-6.3
Pole	106	6.0	2,276	3.7	1.8	124	3,049	23	147	2.2
Crossarms	2	0.1	112	0.2	0.1	6	190	1	8	0.1
Insulators	12	0.7	498	0.8	0.4	27	118	1	28	0.4
Pole Load	1,770	100.0	62,272	100.0	50.0	3,394	15,520	115	3,509	51.6
Pole Reserve Capacity			62,233		50.0	3,407			3,291	48.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 343.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,192	67.4	48,102	77.2	38.6	2,621	10,965	82	2,703	39.7
Unknown, COMMUNICATION	471	26.6	11,782	18.9	9.5	642	1,317	10	652	9.6
Pole	106	6.0	2,276	3.7	1.8	124	3,049	23	147	2.2
<Undefined>	2	0.1	112	0.2	0.1	6	190	1	8	0.1
Totals:	1,770	100.0	62,272	100.0	50.0	3,394	15,520	115	3,509	51.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	42.86	16.76	0.3980	0.74	0.145	201.3	138.4	201.3	2,128	-107,542	-20	951	-106,610
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	42.86	16.76	0.3980	0.55	0.145	172.4	322.5	172.4	2,128	110,837	18	687	111,541
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.97	6.94	0.7200	0.72	0.462	201.3	138.4	201.3	6,210	-307,333	-44	1,265	-306,112
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.97	45.98	0.7200	0.72	0.462	201.3	138.4	201.3	6,210	-307,333	12	1,265	-306,055
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.97	45.08	0.7200	0.72	0.462	201.3	138.4	201.3	6,210	-307,333	-26	1,265	-306,093

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.97	18.56	0.7200	0.54	0.462	172.4	322.5	172.4	6,210	316,750	39	914	317,703
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.97	49.10	0.7200	0.54	0.462	172.4	322.5	172.4	6,210	316,750	30	914	317,694
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.97	48.25	0.7200	0.54	0.462	172.4	322.5	172.4	6,210	316,750	0	914	317,664
Primary	ACSR 795.0 KCM 26/7 DRAKE	KU, UTILITY	38.51	18.77	1.1080	1.91	1.093	168.0	72.3	168.2	1,500	1,321	2	1,151	2,473
Primary	ACSR 795.0 KCM 26/7 DRAKE	KU, UTILITY	38.51	48.76	1.1080	1.91	1.093	168.0	72.3	168.2	1,500	1,321	-79	1,151	2,393
Primary	ACSR 795.0 KCM 26/7 DRAKE	KU, UTILITY	38.51	48.76	1.1080	1.91	1.093	168.0	72.3	168.2	1,500	1,321	80	1,151	2,552
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	32.35	17.38	0.5630	0.78	0.291	168.0	72.3	168.1	650	481	1	639	1,121
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	31.54	7.18	0.5630	0.92	0.291	201.3	138.4	201.3	3,410	-126,825	24	829	-125,973
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	31.54	7.18	0.5630	0.69	0.291	172.4	322.5	172.4	3,410	130,711	21	599	131,331
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	30.70	7.23	0.2570	0.28	0.067	168.0	72.3	168.0	350	246	0	432	678
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	30.13	7.26	0.2570	0.62	0.067	201.3	138.4	201.3	1,216	-43,195	10	564	-42,621
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	30.13	7.26	0.2570	0.46	0.067	172.4	322.5	172.4	1,216	44,518	9	407	44,934
Totals:											41,444	76	15,099	56,619	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.97	7.51	0.6570	3.08	0.190	201.3	138.4	201.3	750	-22,963	22	742	-22,198
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.97	7.51	0.6570	2.53	0.190	172.4	322.5	172.5	750	23,666	19	536	24,221
CATV	CATV 1.0	Unknown,	24.96	7.57	1.3300	2.45	0.337	168.0	72.3	168.1	500	285	32	849	1,167
CATV	CATV 1.0	Unknown,	24.96	7.57	1.3300	3.15	0.337	201.3	138.4	201.3	925	-27,222	39	1,129	-26,054
CATV	CATV 1.0	Unknown,	24.96	7.57	1.3300	2.57	0.337	172.4	322.5	172.5	925	28,056	33	815	28,904
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.95	7.63	0.6570	3.08	0.190	201.3	138.4	201.3	750	-21,176	22	685	-20,469
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.95	7.63	0.6570	2.53	0.190	172.4	322.5	172.5	750	21,824	19	495	22,338

Telco	TELE 1.5	Unknown,	22.99	7.69	1.5000	3.75	0.900	201.3	138.4	201.3	2,000	-54,206	69	1,136	-53,001
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	22.99	7.69	1.5000	3.03	0.900	172.4	322.5	172.5	2,000	55,867	59	821	56,747
		COMMUNICATION													
Totals:												4,133	314	7,208	11,655

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		41.97	5.82	320.4	320.4	50.00	4.50	3.50	96.00	42	30	72	
Normal	Crossarm		38.51	6.02	72.3	72.3	50.00	4.50	3.50	96.00	1	39	40	
Totals:												43	69	112

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	42.86	0.00	138.4	138.4	3.00	3.80	12.75	-7	40	33
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	42.86	0.00	322.5	322.5	3.00	3.80	12.75	7	40	47
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.97	0.00	320.4	-182.1	3.00	3.80	12.75	-3	39	36
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.97	45.00	43.1	-182.1	3.00	3.80	12.75	5	39	44
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.97	-45.00	237.8	-182.1	3.00	3.80	12.75	-11	39	28
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.97	0.00	320.4	2.1	3.00	3.80	12.75	8	39	47
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.97	45.00	43.1	2.1	3.00	3.80	12.75	17	39	56
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.97	-45.00	237.8	2.1	3.00	3.80	12.75	0	39	39
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.51	0.00	72.3	0.0	3.00	3.80	12.75	0	36	36
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.51	45.00	154.7	0.0	3.00	3.80	12.75	-21	36	15
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	38.51	-45.00	349.9	0.0	3.00	3.80	12.75	22	36	57
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	32.35	0.00	72.3	72.3	3.00	3.80	12.75	0	30	30
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.54	0.00	50.4	320.4	2.00	3.00	3.19	1	6	7
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.70	0.00	72.3	72.3	2.00	3.00	3.19	0	6	6
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.13	0.00	50.4	320.4	2.00	3.00	3.19	1	6	6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.97	0.00	50.4	320.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	24.96	0.00	50.4	320.4	5.00	3.00	0.00	2	0	2

Bolt	Three Bolt	Unknown, COMMUNICATION	23.95	0.00	50.4	320.4	5.00	3.00	0.00	2	0	2
Bolt	Three Bolt	Unknown, COMMUNICATION	22.99	0.00	50.4	320.4	5.00	3.00	0.00	2	0	2
Totals:										28	469	497

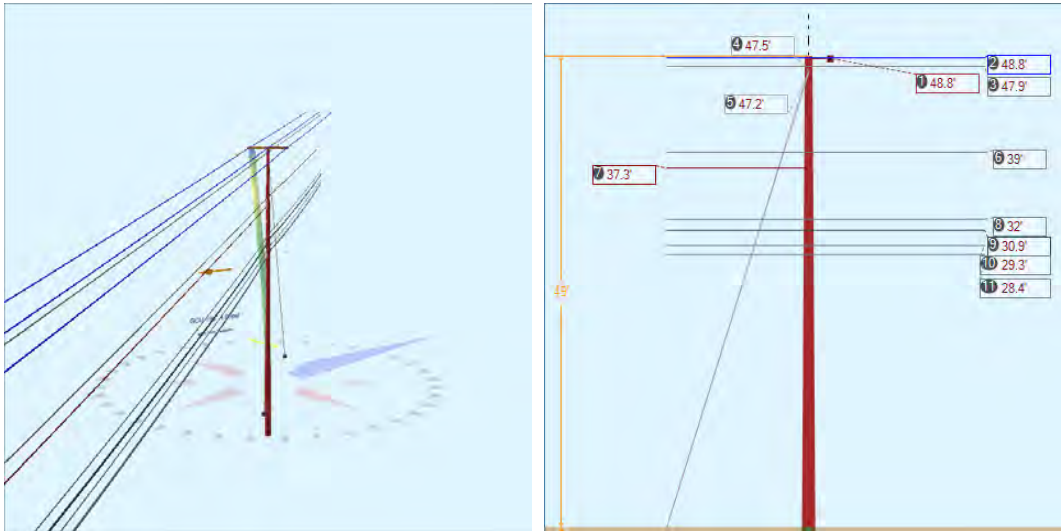
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	36.96	0.00	72.56	0.375	75.00	252.0	26.9	0.273	79.61	4.36
EHS 3/8	Down	KU, UTILITY	32.36	0.00	72.56	0.375	75.00	252.0	24.0	0.273	77.60	2.26
EHS 1/4	Down	Unknown, COMMUNICATION	24.96	0.00	11.24	0.25	75.00	266.3	65.5	0.121	25.70	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,561	8,692	8,690	3,937	7,747	-177	-6,240
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	5,088	4,625	4,624	1,880	4,224	-96	-2,873
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	0	92
Totals:										5,817	11,971	-273	-9,021

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	72.56	252.0	20,000	1.00	20,000	13,313	13,309	66.6
Single Helix Anchor		18.00	11.24	266.3	20,000	1.00	20,000	0	0	0.0

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	32.60	34.41	11.76	21.19	7.96	13.09	1.60e+6	60.00	57.00	43.45	164,607	1651.10	10.64

Pole Num:	514W - 26982-3130	Pole Length / Class:	60 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	11.03	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.14	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.001901 Deg	Longitude:	-84.446967 Deg	Elevation:	909.137598549029		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	67.9	39.0
Groundline	49.3	0.0
Vertical	14.4	231.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,678	317.7
Groundline	53,939	178.3
GL Allowable	144,016	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	21.6	325.0		36.0	195.6	36.6	150.0
? EHS 3/8 (Down)			47.5	52.0	195.6	58.1	150.0
? Single Helix Anchor	20.1	137.0		0.0	195.6	0.0	0.0
? EHS 3/8 (Down)			47.3	0.0	195.6	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 178.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	4,152	181.8	141,782	262.9	98.5	7,629	879	6	7,634	112.3
Comms	232	10.2	5,834	10.8	4.1	314	869	6	320	4.7
GuyBraces	-2,449	-107.3	-102,117	-189.3	-70.9	-5,494	9,898	67	-5,427	-79.8
Pole	296	12.9	6,190	11.5	4.3	333	3,665	25	358	5.3
Crossarms	34	1.5	1,449	2.7	1.0	78	190	1	79	1.2
Insulators	19	0.8	801	1.5	0.6	43	95	1	44	0.6
Pole Load	2,284	100.0	53,939	100.0	37.5	2,902	15,596	105	3,007	44.2
Pole Reserve Capacity			90,077		62.5	3,898			3,793	55.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 178.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,722	75.4	40,479	75.1	28.1	2,178	10,834	73	2,251	33.1
Unknown, COMMUNICATION	232	10.2	5,821	10.8	4.0	313	907	6	319	4.7
Pole	296	12.9	6,190	11.5	4.3	333	3,665	25	358	5.3
<Undefined>	34	1.5	1,449	2.7	1.0	78	190	1	79	1.2
Totals:	2,284	100.0	53,939	100.0	37.5	2,902	15,596	105	3,007	44.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.81	18.49	0.7200	0.51	0.462	172.4	142.5	172.4	6,210	319,542	34	1,402	320,977
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.81	48.65	0.7200	0.51	0.462	172.4	142.5	172.4	6,210	319,542	35	1,402	320,979
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.81	48.65	0.7200	0.51	0.462	172.4	142.5	172.4	6,210	319,542	-10	1,402	320,934
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.81	48.65	0.7200	0.22	0.462	112.1	322.5	112.1	6,210	-319,421	-23	912	-318,532
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.81	18.49	0.7200	0.22	0.462	112.1	322.5	112.1	6,210	-319,421	-22	912	-318,531
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.81	48.65	0.7200	0.22	0.462	112.1	322.5	112.1	6,210	-319,421	6	912	-318,502

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.94	16.79	0.3980	0.47	0.145	172.4	142.5	172.4	2,128	107,545	15	1,013	108,573
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.94	16.79	0.3980	0.20	0.145	112.1	322.6	112.1	2,128	-107,680	-10	656	-107,034
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	38.99	7.07	0.5630	0.63	0.291	172.4	142.5	172.4	3,410	140,164	43	976	141,182
Secondary	DUPLEX 4 AWG	KU, UTILITY	38.99	7.07	0.6300	1.12	0.107	112.1	322.6	112.1	916	-37,698	-19	672	-37,046
Secondary	ACSR 4 AWG 7/1 SWANATE	KU, UTILITY	37.35	7.16	0.2570	0.37	0.067	172.4	142.5	172.4	1,216	47,879	18	665	48,562
Totals:											150,571	67	10,924	161,562	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	32.03	7.48	0.6570	2.46	0.190	172.4	142.5	172.5	750	25,326	-28	872	26,171
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	32.03	7.48	0.6570	1.46	0.190	112.1	322.6	112.1	750	-25,358	-18	565	-24,812
CATV	CATV 1.0	Unknown,	30.89	7.54	1.3300	2.55	0.337	172.4	142.5	172.5	925	30,123	-50	1,331	31,404
CATV	CATV 1.0	Unknown,	30.89	7.54	1.3300	1.50	0.337	112.1	322.6	112.1	925	-30,161	-32	862	-29,332
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.30	7.64	0.6570	2.46	0.190	172.4	142.5	172.5	750	23,167	-29	798	23,936
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	29.30	7.64	0.6570	1.46	0.190	112.1	322.6	112.1	750	-23,196	-19	517	-22,698
Telco	TELE 1.5	Unknown,	28.35	7.69	1.5000	3.02	0.900	172.4	142.5	172.5	2,000	59,781	-89	1,335	61,027
Telco	TELE 1.5	Unknown,	28.35	7.69	1.5000	1.75	0.900	112.1	322.6	112.1	2,000	-59,856	-58	865	-59,050
Totals:											-174	-322	7,144	6,647	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	48.81	5.74	142.5	142.5	50.00	4.50	3.50	96.00	0	1,651	1,651	
Totals:											0	1,651	1,651

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	48.81	0.00	142.5	0.0	3.00	3.80	12.75	7	110	117
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	48.81	45.00	225.2	0.0	3.00	3.80	12.75	20	110	129
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	48.81	-45.00	59.7	0.0	3.00	3.80	12.75	-5	110	104
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	48.81	-45.00	45.2	180.0	3.00	3.80	12.75	-20	110	90
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	48.81	0.00	322.5	180.0	3.00	3.80	12.75	-7	110	103
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	48.81	45.00	239.7	180.0	3.00	3.80	12.75	5	110	115
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	47.94	0.00	142.5	142.5	3.00	3.80	12.75	6	108	114
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	47.94	0.00	322.6	322.6	3.00	3.80	12.75	-6	108	101
Spool	Spool Insulator - 25 kV	KU, UTILITY	38.99	0.00	142.5	142.5	2.00	3.00	3.19	2	17	19
Spool	Spool Insulator - 25 kV	KU, UTILITY	38.99	0.00	322.6	322.6	2.00	3.00	3.19	-2	17	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	37.35	0.00	142.5	142.5	2.00	3.00	3.19	2	17	18
Bolt	Three Bolt	Unknown, COMMUNICATION	32.03	0.00	52.5	322.5	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	30.89	0.00	52.5	322.5	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	29.30	0.00	52.5	322.5	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	28.35	0.00	52.5	322.5	5.00	3.00	0.00	-4	0	-4
Totals:										-12	925	913

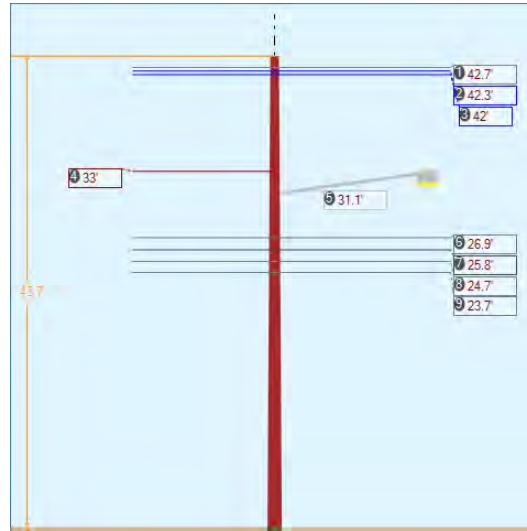
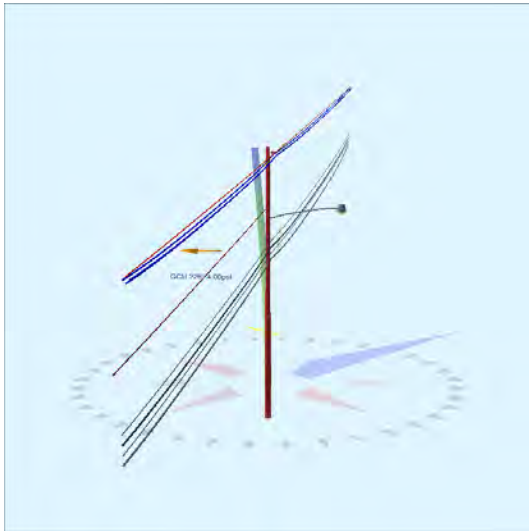
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	47.50	0.00	21.62	0.375	75.00	325.0	65.3	0.273	50.55	2.30
EHS 3/8	Down	KU, UTILITY	47.25	0.00	20.09	0.375	75.00	137.0	66.7	0.273	49.71	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	8,049	7,317	7,207	6,547	3,012	-2,517	-116,750
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	387
Totals:										6,547	3,012	-2,517	-116,363

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	21.62	325.0	20,000	1.00	20,000	7,317	7,207	36.6
Single Helix Anchor		18.00	20.09	137.0	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	41.73	35.37	11.99	24.01	7.96	13.74	1.60e+6	60.00	57.00	48.97	108,645	1083.08	6.94

Pole Num:	515W - 26982-3120	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.27	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.90	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.002178 Deg	Longitude:	-84.447299 Deg	Elevation:	883.358186852129		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	43.9	0.0
Groundline	43.9	0.0
Vertical	18.6	28.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	57,126	199.4
Groundline	57,126	199.4
GL Allowable	131,958	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 199.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,072	58.0	40,092	70.2	30.4	2,063	1,573	11	2,074	30.5
Comms	500	27.0	12,032	21.1	9.1	619	968	7	626	9.2
Pole	242	13.1	5,238	9.2	4.0	270	3,148	23	292	4.3
Streetlights	32	1.7	-310	-0.5	-0.2	-16	180	1	-15	-0.2
Insulators	3	0.2	74	0.1	0.1	4	63	0	4	0.1
Pole Load	1,849	100.0	57,126	100.0	43.3	2,939	5,933	42	2,981	43.8
Pole Reserve Capacity			74,832		56.7	3,861			3,819	56.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 199.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	542	29.3	22,531	39.4	17.1	1,159	1,554	11	1,170	17.2
KU, UTILITY	565	30.5	17,345	30.4	13.1	892	225	2	894	13.1
Unknown, COMMUNICATION	500	27.0	12,011	21.0	9.1	618	1,006	7	625	9.2
Pole	242	13.1	5,238	9.2	4.0	270	3,148	23	292	4.3
Totals:	1,849	100.0	57,126	100.0	43.3	2,939	5,933	42	2,981	43.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.67	15.54	0.5630	0.16	0.291	112.1	142.6	112.1	5,010	117,111	-16	1,233	118,329
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.67	15.54	0.5630	0.54	0.291	204.9	322.2	204.9	5,010	-115,860	-29	2,266	-113,623
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	11.54	1.1080	1.27	1.093	112.1	142.6	112.1	3,200	74,217	-44	1,851	76,024
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	19.54	1.1080	1.27	1.093	112.1	142.6	112.1	3,200	74,217	-44	1,851	76,024
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	11.54	1.1080	2.87	1.093	204.9	322.2	204.9	3,200	-73,424	-81	3,401	-70,105
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.33	19.54	1.1080	2.87	1.093	204.9	322.2	204.9	3,200	-73,424	-81	3,401	-70,105
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.00	15.54	1.1080	1.27	1.093	112.1	142.6	112.1	3,200	73,633	-45	1,836	75,424

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.00	15.54	1.1080	2.87	1.093	204.9	322.2	204.9	3,200	-72,846	-82	3,374	-69,554
Secondary	DUPLEX 4 AWG	KU, UTILITY	33.04	7.14	0.6300	1.15	0.107	112.1	142.6	112.1	916	16,581	13	1,015	17,610
Totals:											20,205	-409	20,228	40,024	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.87	7.52	0.6570	1.50	0.190	112.1	142.6	112.1	750	11,042	-26	845	11,860
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	26.87	7.52	0.6570	3.15	0.190	204.9	322.2	204.9	750	-10,924	-48	1,553	-9,419
CATV	CATV 1.0	Unknown,	25.76	7.58	1.3300	1.51	0.337	112.1	142.6	112.1	925	13,054	-47	1,282	14,290
CATV	CATV 1.0	Unknown,	25.76	7.58	1.3300	3.23	0.337	204.9	322.2	204.9	925	-12,915	-85	2,355	-10,646
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.67	7.65	0.6570	1.50	0.190	112.1	142.6	112.1	750	10,135	-27	776	10,884
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.67	7.65	0.6570	3.15	0.190	204.9	322.2	204.9	750	-10,027	-49	1,425	-8,650
Telco	TELE 1.5	Unknown,	23.65	7.71	1.5000	1.75	0.900	112.1	142.6	112.1	2,000	25,919	-83	1,286	27,122
Telco	TELE 1.5	Unknown,	23.65	7.71	1.5000	3.85	0.900	204.9	322.2	205.0	2,000	-25,642	-151	2,363	-23,430
Totals:											643	-517	11,886	12,011	

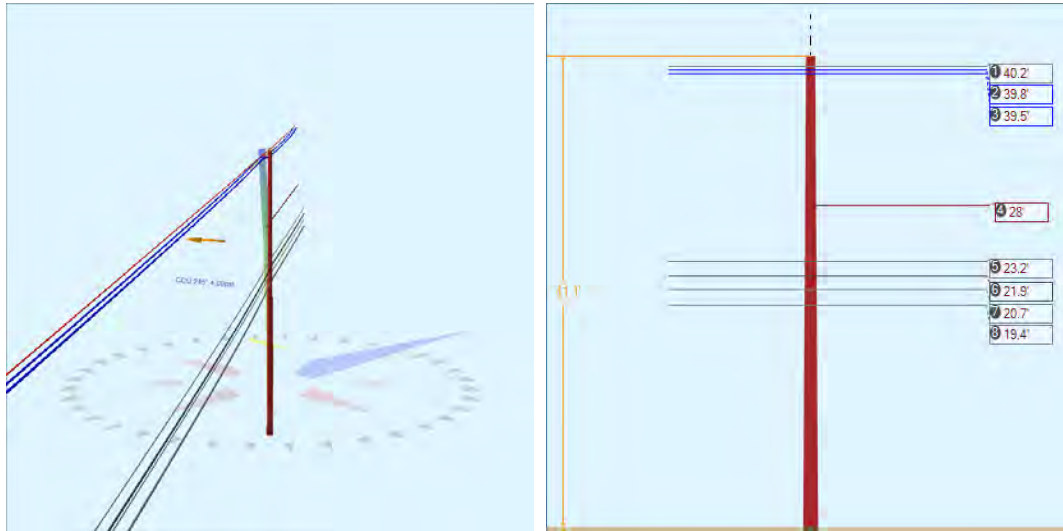
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 12 ft. Arm	KU, UTILITY	31.06	4.76	55.0	55.0	95.00	24.00	20.00	3.00	144.00	-1,294	985	-309
Totals:											-1,294	985	-309	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	42.67	0.00	55.0	55.0	11.00	4.75	11.50	-22	101	79
Spool	Spool Insulator - 25 kV	KU, UTILITY	33.04	0.00	142.6	142.6	2.00	3.00	3.19	1	14	15
Bolt	Three Bolt	Unknown, COMMUNICATION	26.87	0.00	52.4	142.4	5.00	3.00	0.00	-5	0	-5

Bolt	Three Bolt	Unknown, COMMUNICATION	25.76	0.00	52.4	142.4	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	24.67	0.00	52.4	142.4	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	23.65	0.00	52.4	142.4	5.00	3.00	0.00	-5	0	-5
Totals:										-41	115	74

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.06	33.88	12.17	20.93	7.96	13.34	1.60e+6	60.00	57.00	43.73	31,840	318.99	5.38

Pole Num:	516W - 26982-3110	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.95	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.86	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.002586 Deg	Longitude:	-84.447712 Deg	Elevation:	907.618922755699		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	244.8
Groundline	0.0	244.8
Vertical	25.5	244.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	287.8	244.8
Groundline	287.8	244.8
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 287.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,915	80.7	57,543	86.1	47.0	3,194	1,293	10	3,204	47.1
Comms	272	11.5	5,457	8.2	4.5	303	791	6	309	4.5
Pole	183	7.7	3,757	5.6	3.1	209	2,859	22	230	3.4
Insulators	2	0.1	90	0.1	0.1	5	63	0	5	0.1
Pole Load	2,374	100.0	66,846	100.0	54.6	3,711	5,006	38	3,748	55.1
Pole Reserve Capacity			55,568		45.4	3,089			3,052	44.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 287.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	304	12.8	12,341	18.5	10.1	685	1,273	10	695	10.2
KU, UTILITY	1,614	68.0	45,305	67.8	37.0	2,515	45	0	2,515	37.0
Unknown, COMMUNICATION	272	11.5	5,443	8.1	4.5	302	829	6	308	4.5
Pole	183	7.7	3,757	5.6	3.1	209	2,859	22	230	3.4
Totals:	2,374	100.0	66,846	100.0	54.6	3,711	5,006	38	3,748	55.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.17	15.53	0.5630	0.53	0.291	204.9	142.2	204.9	5,010	-166,095	19	1,406	-164,670
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.17	15.53	0.5630	0.04	0.291	54.1	321.8	54.1	5,010	166,884	5	367	167,256
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	11.53	1.1080	2.87	1.093	204.9	142.2	204.9	3,200	-105,208	53	2,109	-103,045
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	19.53	1.1080	2.87	1.093	204.9	142.2	204.9	3,200	-105,208	53	2,109	-103,045
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	11.53	1.1080	0.53	1.093	54.1	321.8	54.1	3,200	105,708	14	550	106,272
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	19.53	1.1080	0.53	1.093	54.1	321.8	54.1	3,200	105,708	14	550	106,272
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	15.53	1.1080	2.87	1.093	204.9	142.2	204.9	3,200	-104,328	53	2,092	-102,182
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.50	15.53	1.1080	0.53	1.093	54.1	321.8	54.1	3,200	104,823	14	546	105,383
Secondary	TRIPLEX 1/0	KU, UTILITY	28.04	7.28	1.0300	0.56	0.399	54.1	321.8	54.1	1,930	44,881	14	369	45,263
Totals:											47,165	239	10,099	57,503	

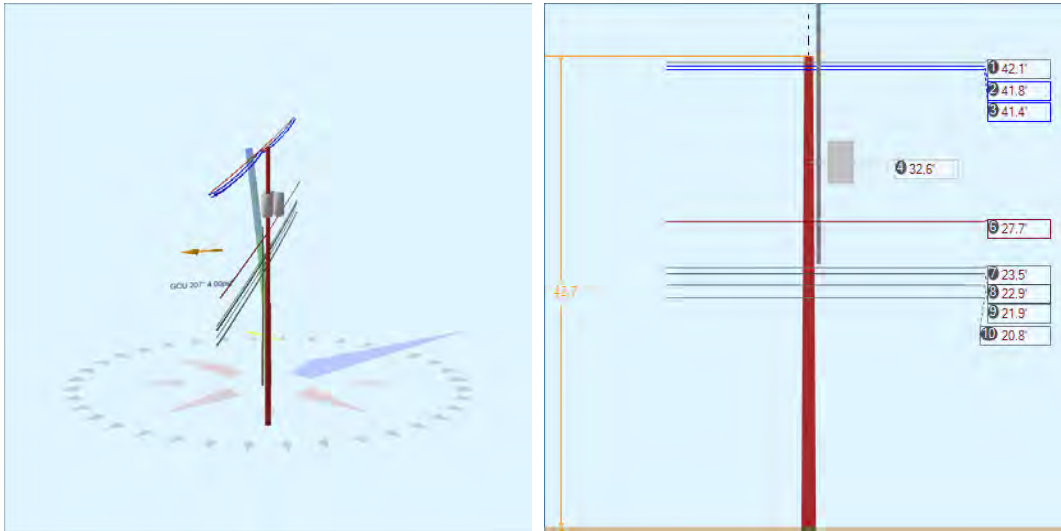
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.17	7.58	0.6570	3.14	0.190	204.9	142.2	204.9	750	-14,343	-33	883	-13,493
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.17	7.58	0.6570	0.65	0.190	54.1	321.8	54.1	750	14,411	-9	230	14,633

CATV	CATV 1.0	Unknown, COMMUNICATION	21.89	7.66	1.3300	3.23	0.337	204.9	142.2	204.9	925	-16,715	-58	1,319	-15,453
CATV	CATV 1.0	Unknown, COMMUNICATION	21.89	7.66	1.3300	0.68	0.337	54.1	321.8	54.1	925	16,794	-15	344	17,123
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.72	7.73	0.6570	3.14	0.190	204.9	142.2	204.9	750	-12,825	-33	789	-12,069
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.72	7.73	0.6570	0.65	0.190	54.1	321.8	54.1	750	12,886	-9	206	13,083
Telco	TELE 1.5	Unknown, COMMUNICATION	19.35	7.81	1.5000	3.85	0.900	204.9	142.2	205.0	2,000	-31,942	-103	1,274	-30,770
Telco	TELE 1.5	Unknown, COMMUNICATION	19.35	7.81	1.5000	0.77	0.900	54.1	321.8	54.1	2,000	32,094	-27	332	32,399
Totals:											360	-286	5,378	5,453	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	40.17	0.00	230.0	230.0	11.00	4.75	11.50	14	78	92
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.04	0.00	231.8	321.8	2.00	3.00	3.19	1	10	11
Bolt	Three Bolt	Unknown, COMMUNICATION	23.17	0.00	52.0	142.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	21.89	0.00	52.0	142.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	20.72	0.00	52.0	142.0	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	19.35	0.00	52.0	142.0	5.00	3.00	0.00	-3	0	-3
Totals:										2	87	89

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.54	33.62	11.95	18.44	7.96	13.01	1.60e+6	60.00	57.00	41.05	35,776	357.59	7.14

Pole Num:	517W - 26982-3104	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.34	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.48	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.002715 Deg	Longitude:	-84.447840 Deg	Elevation:	885.519618529354		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	38.2	207.0
Groundline	38.2	207.0
Vertical	25.9	207.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	47,849	187.8
Groundline	47,849	187.8
GL Allowable	128,063	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 187.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,051	61.5	33,513	70.0	26.2	1,781	659	5	1,786	26.3
Comms	196	11.4	4,492	9.4	3.5	239	375	3	242	3.6
PowerEquipments	155	9.1	3,371	7.0	2.6	179	3,648	27	206	3.0
Pole	249	14.5	5,238	11.0	4.1	279	3,030	22	301	4.4
Risers	56	3.3	1,069	2.2	0.8	57	54	0	57	0.8
Insulators	3	0.2	166	0.4	0.1	9	66	0	9	0.1
Pole Load	1,710	100.0	47,849	100.0	37.4	2,544	7,832	57	2,601	38.2
Pole Reserve Capacity			80,214		62.6	4,257			4,199	61.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 187.8°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	308	18.0	12,999	27.2	10.2	691	614	4	695	10.2
KU, UTILITY	958	56.0	25,101	52.5	19.6	1,334	3,776	28	1,362	20.0
Unknown, COMMUNICATION	196	11.4	4,510	9.4	3.5	240	413	3	243	3.6
Pole	249	14.5	5,238	11.0	4.1	279	3,030	22	301	4.4
Totals:	1,710	100.0	47,849	100.0	37.4	2,544	7,832	57	2,601	38.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.08	15.51	0.5630	0.04	0.291	54.1	141.8	54.1	5,010	146,518	6	461	146,986
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.08	15.51	0.5630	0.06	0.291	68.5	320.9	68.5	5,010	-144,119	8	597	-143,514
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.75	11.51	1.1080	0.53	1.093	54.1	141.8	54.1	3,200	92,843	18	692	93,553
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.75	19.51	1.1080	0.53	1.093	54.1	141.8	54.1	3,200	92,843	18	692	93,553
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.75	11.51	1.1080	0.70	1.093	68.5	320.9	68.5	3,200	-91,323	23	895	-90,405
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.75	19.51	1.1080	0.70	1.093	68.5	320.9	68.5	3,200	-91,323	23	895	-90,405

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	15.51	1.1080	0.53	1.093	54.1	141.8	54.1	3,200	92,102	18	686	92,806
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	15.51	1.1080	0.70	1.093	68.5	320.9	68.5	3,200	-90,594	23	888	-89,683
Secondary	TRIPLEX 1/0	KU, UTILITY	27.69	7.40	1.0300	0.55	0.399	54.1	141.8	54.1	1,930	37,134	18	436	37,588
Secondary	DUPLEX 4 AWG	KU, UTILITY	27.69	7.40	0.6300	0.67	0.107	68.5	320.9	68.5	916	-17,336	-10	417	-16,929
Totals:											26,747	143	6,659	33,549	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.51	7.66	0.6570	0.65	0.190	54.1	141.8	54.1	750	12,252	11	280	12,543
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.51	7.66	0.6570	0.84	0.190	68.5	320.9	68.5	750	-12,051	14	363	-11,674
CATV	CATV 1.0	Unknown,	22.95	7.69	1.3300	0.67	0.337	54.1	141.8	54.1	925	14,752	20	433	15,204
CATV	CATV 1.0	Unknown,	22.95	7.69	1.3300	0.87	0.337	68.5	320.9	68.5	925	-14,510	25	560	-13,925
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.94	7.75	0.6570	0.65	0.190	54.1	141.8	54.1	750	11,434	11	261	11,707
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.94	7.75	0.6570	0.84	0.190	68.5	320.9	68.5	750	-11,247	14	339	-10,894
Telco	TELE 1.5	Unknown,	20.79	7.82	1.5000	0.76	0.900	54.1	141.8	54.1	2,000	28,892	35	428	29,355
Telco	TELE 1.5	Unknown,	20.79	7.82	1.5000	0.99	0.900	68.5	320.9	68.5	2,000	-28,419	44	555	-27,820
Totals:											1,103	175	3,219	4,497	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	32.65	22.59	50.0	50.0	640.00	47.00	--	24.00	--	-1,696	5,070	3,374
Totals:											-1,696	5,070	3,374	

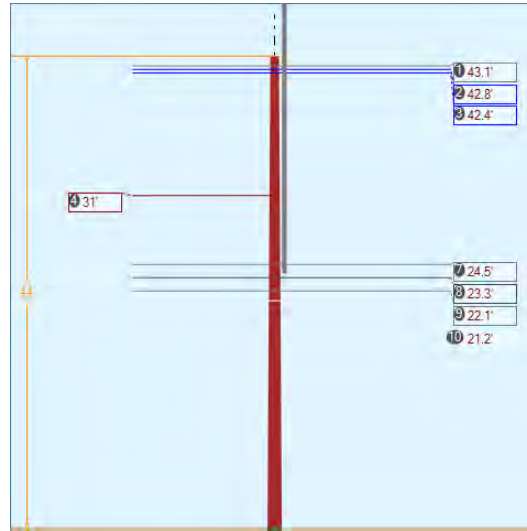
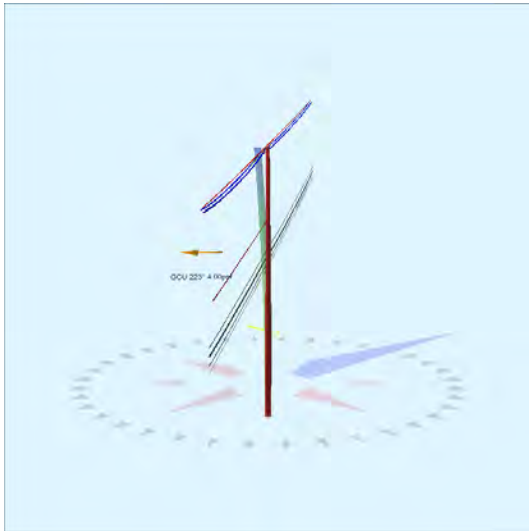
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 270.0°	Riser	KU, UTILITY	28.54	6.81	270.0	270.0	28.54	342.47	4.00	4.00	342.47	5	1,065	1,070
Totals:												5	1,065	1,070

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	42.08	0.00	235.0	235.0	11.00	4.75	11.50	18	105	124
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.69	0.00	141.8	141.8	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.69	0.00	320.9	320.9	2.00	3.00	3.19	-2	12	11
Bolt	Three Bolt	Unknown, COMMUNICATION	23.51	0.00	231.3	141.3	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	22.95	0.00	231.3	141.3	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	21.94	0.00	231.3	141.3	5.00	3.00	0.00	4	0	4
Bolt	Three Bolt	Unknown, COMMUNICATION	20.79	0.00	231.3	141.3	5.00	3.00	0.00	4	0	4
Totals:										36	130	166

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.13	33.93	12.03	23.85	7.96	13.21	1.60e+6	60.00	57.00	42.66	30,273	302.40	3.86

Pole Num:	518W - 26982-3190	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.99	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.00	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.002873 Deg	Longitude:	-84.448016 Deg	Elevation:	882.439724232651		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	35.4	0.0
Groundline	35.4	0.0
Vertical	12.3	26.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	46,336	191.2
Groundline	46,336	191.2
GL Allowable	132,952	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 191.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	950	63.0	33,813	73.0	25.4	1,728	1,015	7	1,735	25.5
Comms	242	16.1	5,765	12.4	4.3	295	400	3	297	4.4
Pole	234	15.5	5,076	11.0	3.8	259	3,178	23	282	4.1
Risers	80	5.3	1,530	3.3	1.2	78	112	1	79	1.2
Insulators	3	0.2	152	0.3	0.1	8	63	0	8	0.1
Pole Load	1,508	100.0	46,336	100.0	34.9	2,368	4,768	34	2,402	35.3
Pole Reserve Capacity			86,616		65.1	4,432			4,398	64.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 191.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	350	23.2	15,242	32.9	11.5	779	1,011	7	786	11.6
KU, UTILITY	682	45.3	20,234	43.7	15.2	1,034	141	1	1,035	15.2
Unknown, COMMUNICATION	242	16.1	5,784	12.5	4.4	296	438	3	299	4.4
Pole	234	15.5	5,076	11.0	3.8	259	3,178	23	282	4.1
Totals:	1,508	100.0	46,336	100.0	34.9	2,368	4,768	34	2,402	35.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.08	15.54	0.5630	0.06	0.291	68.5	140.9	68.5	5,010	137,937	9	697	138,643
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.08	15.54	0.5630	0.24	0.291	136.2	320.5	136.2	5,010	-136,775	18	1,394	-135,362
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	11.54	1.1080	0.70	1.093	68.5	140.9	68.5	3,200	87,422	26	1,045	88,493
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	19.54	1.1080	0.70	1.093	68.5	140.9	68.5	3,200	87,422	26	1,045	88,493
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	11.54	1.1080	1.63	1.093	136.2	320.5	136.2	3,200	-86,685	52	2,093	-84,541
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.75	19.54	1.1080	1.63	1.093	136.2	320.5	136.2	3,200	-86,685	52	2,093	-84,541
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.42	15.54	1.1080	0.70	1.093	68.5	140.9	68.5	3,200	86,740	26	1,037	87,804

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.42	15.54	1.1080	1.63	1.093	136.2	320.5	136.2	3,200	-86,009	52	2,076	-83,881
Secondary	DUPLEX 4 AWG	KU, UTILITY	30.97	7.28	0.6300	0.67	0.107	68.5	140.9	68.5	916	18,130	10	532	18,672
											Totals:	21,497	271	12,014	33,781

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.54	7.68	0.6570	0.85	0.190	68.5	140.9	68.5	750	11,760	15	432	12,207
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.54	7.68	0.6570	1.89	0.190	136.2	320.5	136.2	750	-11,661	30	864	-10,766
CATV	CATV 1.0	Unknown,	23.32	7.75	1.3300	0.87	0.337	68.5	140.9	68.5	925	13,782	27	649	14,459
CATV	CATV 1.0	Unknown,	23.32	7.75	1.3300	1.90	0.337	136.2	320.5	136.2	925	-13,666	53	1,299	-12,314
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.07	7.83	0.6570	0.85	0.190	68.5	140.9	68.5	750	10,577	15	388	10,981
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.07	7.83	0.6570	1.89	0.190	136.2	320.5	136.2	750	-10,488	31	777	-9,680
Overlashed Bundle	1/4" EHS	Unknown,	21.15	7.88	0.2500	0.17	0.121	68.5	140.9	68.5	800	10,814	9	251	11,074
Overlashed Bundle	1/4" EHS	Unknown,	21.15	7.88	0.2500	0.64	0.121	136.2	320.5	136.2	800	-10,722	19	503	-10,201
											Totals:	396	200	5,164	5,760

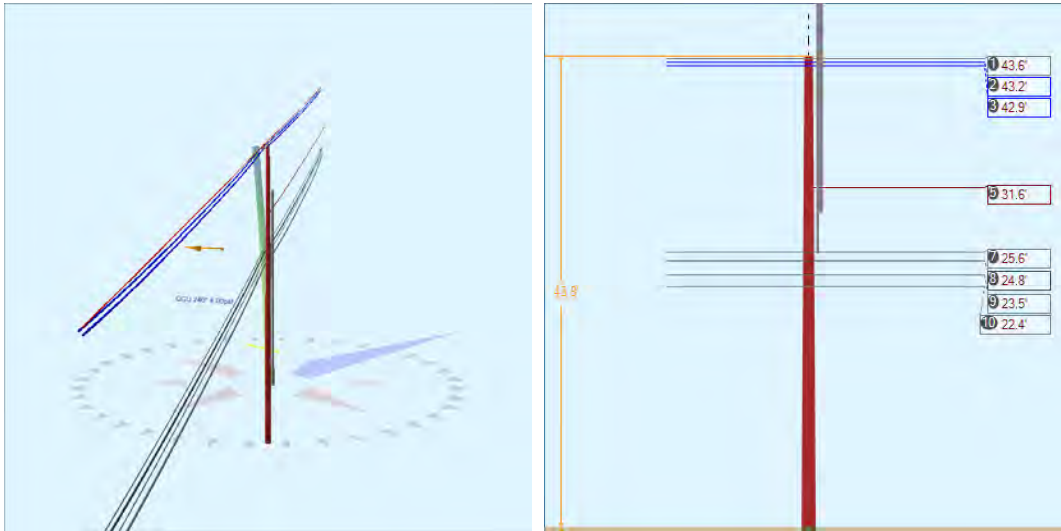
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	29.23	6.81	360.0	360.0	29.23	350.76	4.00	4.00	350.76	-16	768	752
Riser 360.0°	Riser	KU, UTILITY	29.70	6.81	360.0	360.0	29.70	356.45	4.00	4.00	356.45	-16	793	777
											Totals:	-32	1,561	1,529

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	43.08	0.00	230.0	230.0	11.00	4.75	11.50	21	98	119
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.97	0.00	140.9	140.9	2.00	3.00	3.19	1	12	14

Bolt	Three Bolt	Unknown, COMMUNICATION	24.54	0.00	230.7	140.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	23.32	0.00	230.7	140.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.07	0.00	230.7	140.7	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	21.15	0.00	230.7	140.7	5.00	3.00	0.00	5	0	5
Totals:										42	110	151

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	25.97	33.58	12.30	18.31	7.96	13.38	1.60e+6	60.00	57.00	44.01	38,771	387.63	8.13

Pole Num:	519W - 26982-3098	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	11.18	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.54	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.003139 Deg	Longitude:	-84.448267 Deg	Elevation:	883.386968602861		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.6	0.0
Groundline	45.6	0.0
Vertical	19.1	28.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	57,897	262.4
Groundline	57,897	262.4
GL Allowable	128,654	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 262.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	991	53.3	37,155	64.2	28.9	1,959	1,602	12	1,971	29.0
Comms	477	25.7	11,963	20.7	9.3	631	971	7	638	9.4
Pole	250	13.5	5,437	9.4	4.2	287	3,119	23	309	4.6
Risers	137	7.4	3,176	5.5	2.5	168	128	1	168	2.5
Insulators	3	0.2	166	0.3	0.1	9	63	0	9	0.1
Pole Load	1,858	100.0	57,897	100.0	45.0	3,053	5,883	43	3,096	45.5
Pole Reserve Capacity			70,757		55.0	3,747			3,704	54.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 262.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	460	24.7	20,364	35.2	15.8	1,074	1,558	11	1,085	16.0
KU, UTILITY	672	36.1	20,112	34.7	15.6	1,061	197	1	1,062	15.6
Unknown, COMMUNICATION	477	25.7	11,984	20.7	9.3	632	1,009	7	639	9.4
Pole	250	13.5	5,437	9.4	4.2	287	3,119	23	309	4.6
Totals:	1,858	100.0	57,897	100.0	45.0	3,053	5,883	43	3,096	45.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.58	15.49	0.5630	0.24	0.291	136.2	140.5	136.2	5,010	-115,282	20	1,542	-113,720
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	43.58	15.49	0.5630	0.42	0.291	181.6	320.5	181.6	5,010	115,282	26	2,055	117,364
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.25	11.49	1.1080	1.63	1.093	136.2	140.5	136.2	3,200	-73,070	55	2,314	-70,700
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.25	19.49	1.1080	1.63	1.093	136.2	140.5	136.2	3,200	-73,070	55	2,314	-70,700
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.25	11.49	1.1080	2.42	1.093	181.6	320.5	181.6	3,200	73,070	74	3,085	76,229
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	43.25	19.49	1.1080	2.42	1.093	181.6	320.5	181.6	3,200	73,070	74	3,085	76,229
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.92	15.49	1.1080	1.63	1.093	136.2	140.5	136.2	3,200	-72,507	56	2,296	-70,155

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.92	15.49	1.1080	2.42	1.093	181.6	320.5	181.6	3,200	72,507	74	3,062	75,643
Secondary	DUPLEX 4 AWG	KU, UTILITY	31.59	7.21	0.6300	2.00	0.107	181.6	320.5	181.6	916	15,278	21	1,583	16,882
											Totals:	15,278	455	21,338	37,071

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.61	7.57	0.6570	1.89	0.190	136.2	140.5	136.2	750	-10,140	33	986	-9,121
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.61	7.57	0.6570	2.70	0.190	181.6	320.5	181.6	750	10,140	44	1,314	11,498
CATV	CATV 1.0	Unknown,	24.78	7.62	1.3300	1.90	0.337	136.2	140.5	136.2	925	-12,100	58	1,509	-10,533
CATV	CATV 1.0	Unknown,	24.78	7.62	1.3300	2.74	0.337	181.6	320.5	181.6	925	12,100	77	2,011	14,188
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.47	7.70	0.6570	1.89	0.190	136.2	140.5	136.2	750	-9,295	33	904	-8,358
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.47	7.70	0.6570	2.70	0.190	181.6	320.5	181.6	750	9,295	44	1,205	10,544
Telco	TELE 1.5	Unknown,	22.41	7.77	1.5000	2.23	0.900	136.2	140.5	136.2	2,000	-23,658	103	1,491	-22,064
Telco	TELE 1.5	Unknown,	22.41	7.77	1.5000	3.25	0.900	181.6	320.5	181.6	2,000	23,658	137	1,988	25,782
											Totals:	0	528	11,408	11,936

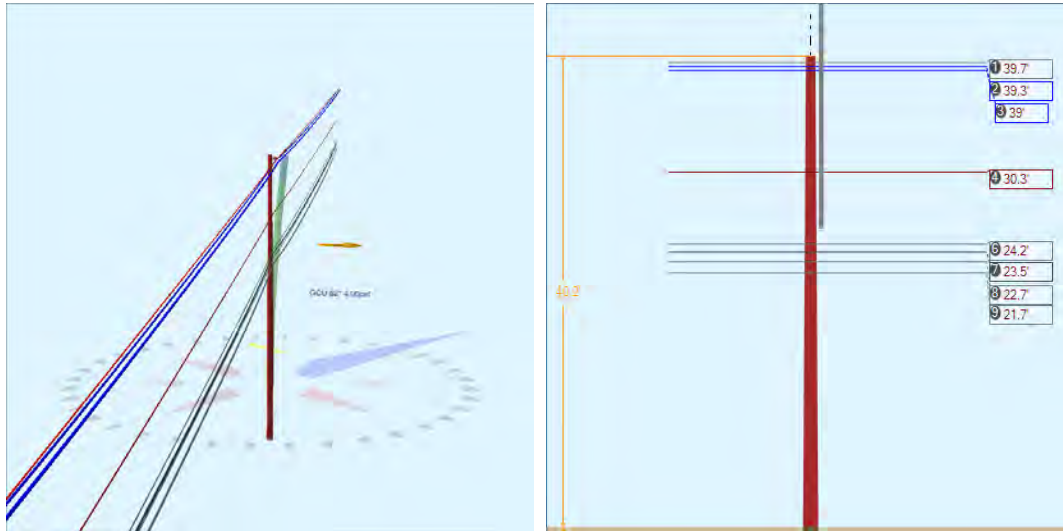
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	35.94	7.04	360.0	360.0	35.94	431.22	6.00	6.00	431.22	-5	2,413	2,408
Riser 360.0°	Riser	KU, UTILITY	31.31	7.04	360.0	360.0	31.31	375.69	2.50	2.50	375.69	-2	763	761
											Totals:	-7	3,176	3,169

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	43.58	0.00	230.0	230.0	11.00	4.75	11.50	23	107	130
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.59	0.00	320.5	320.5	2.00	3.00	3.19	1	14	15

Bolt	Three Bolt	Unknown, COMMUNICATION	25.61	0.00	230.5	140.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	24.78	0.00	230.5	140.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	23.47	0.00	230.5	140.5	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	22.41	0.00	230.5	140.5	5.00	3.00	0.00	5	0	5
Totals:										45	121	165

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.14	33.84	12.08	20.87	7.96	13.23	1.60e+6	60.00	57.00	43.82	30,769	308.01	5.24

Pole Num:	520W - 26982-3094	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.77	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.54	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.003533 Deg	Longitude:	-84.448690 Deg	Elevation:	890.609445803891		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	48.1	0.0
Groundline	48.1	0.0
Vertical	19.4	27.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	56,713	50.9
Groundline	56,713	50.9
GL Allowable	119,566	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 50.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	878	47.0	34,102	60.1	28.5	1,935	1,885	14	1,949	28.7
Comms	688	36.9	16,486	29.1	13.8	936	1,108	8	944	13.9
Pole	245	13.1	4,926	8.7	4.1	280	2,773	21	301	4.4
Risers	53	2.8	1,027	1.8	0.9	58	55	0	59	0.9
Insulators	3	0.2	173	0.3	0.1	10	63	0	10	0.2
Pole Load	1,867	100.0	56,713	100.0	47.4	3,218	5,883	45	3,263	48.0
Pole Reserve Capacity			62,853		52.6	3,582			3,537	52.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 50.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	753	40.3	30,281	53.4	25.3	1,718	1,775	14	1,732	25.5
KU, UTILITY	181	9.7	4,996	8.8	4.2	284	190	1	285	4.2
Unknown, COMMUNICATION	688	36.9	16,510	29.1	13.8	937	1,146	9	946	13.9
Pole	245	13.1	4,926	8.7	4.1	280	2,773	21	301	4.4
Totals:	1,867	100.0	56,713	100.0	47.4	3,218	5,883	45	3,263	48.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	39.67	15.51	0.5630	0.42	0.291	181.6	140.5	181.6	5,010	1,270	31	2,233	3,534
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	39.67	15.51	0.5630	0.42	0.291	181.1	321.0	181.1	5,010	464	31	2,227	2,722
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.33	11.51	1.1080	2.42	1.093	181.6	140.5	181.6	3,200	805	88	3,349	4,241
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.33	19.51	1.1080	2.42	1.093	181.6	140.5	181.6	3,200	805	88	3,349	4,241
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.33	11.51	1.1080	2.41	1.093	181.1	321.0	181.1	3,200	294	88	3,340	3,722
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.33	19.51	1.1080	2.41	1.093	181.1	321.0	181.1	3,200	294	88	3,340	3,722
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.00	15.51	1.1080	2.42	1.093	181.6	140.5	181.6	3,200	798	88	3,321	4,207

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.00	15.51	1.1080	2.41	1.093	181.1	321.0	181.1	3,200	291	88	3,312	3,691
Secondary	DUPLEX 4 AWG	KU, UTILITY	30.32	7.09	0.6300	2.00	0.107	181.6	140.5	181.6	916	178	39	1,814	2,030
Secondary	DUPLEX 4 AWG	KU, UTILITY	30.32	7.09	0.6300	2.00	0.107	181.1	321.0	181.1	916	65	39	1,810	1,914
Totals:											5,262	668	28,094	34,025	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.19	7.47	0.6570	2.70	0.190	181.6	140.5	181.6	750	116	51	1,481	1,648
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.19	7.47	0.6570	2.69	0.190	181.1	321.0	181.2	750	42	51	1,478	1,571
CATV	CATV 1.0	Unknown,	23.50	7.51	1.3300	2.75	0.337	181.6	140.5	181.6	925	139	89	2,277	2,505
CATV	CATV 1.0	Unknown,	23.50	7.51	1.3300	2.74	0.337	181.1	321.0	181.2	925	51	89	2,272	2,412
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.68	7.56	0.6570	2.70	0.190	181.6	140.5	181.6	750	109	51	1,389	1,549
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.68	7.56	0.6570	2.69	0.190	181.1	321.0	181.2	750	40	51	1,386	1,477
Telco	TELE 1.5	Unknown,	21.71	7.62	1.5000	3.25	0.900	181.6	140.5	181.6	2,000	278	158	2,299	2,735
Telco	TELE 1.5	Unknown,	21.71	7.62	1.5000	3.24	0.900	181.1	321.0	181.2	2,000	101	158	2,294	2,553
Totals:											875	698	14,876	16,449	

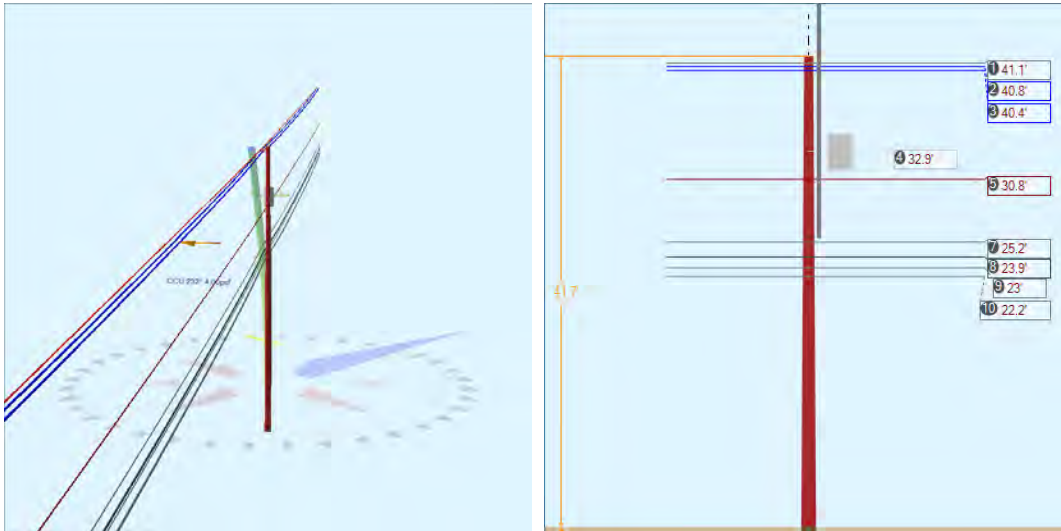
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 360.0°	Riser	KU, UTILITY	28.78	6.81	360.0	360.0	28.78	345.37	4.00	4.00	345.37	10	1,015	1,024
Totals:											10	1,015	1,024	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	39.67	0.00	51.0	51.0	11.00	4.75	11.50	27	105	132
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.32	0.00	50.7	320.7	2.00	3.00	3.19	2	14	16

Bolt	Three Bolt	Unknown, COMMUNICATION	24.19	0.00	50.7	320.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.50	0.00	50.7	320.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.68	0.00	50.7	320.7	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.71	0.00	50.7	320.7	5.00	3.00	0.00	6	0	6
Totals:										53	119	173

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	26.95	33.85	11.78	20.33	7.96	12.91	1.60e+6	60.00	57.00	40.23	30,355	303.27	5.15

Pole Num:	521W - 26982-3090	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.31	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.11	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.003908 Deg	Longitude:	-84.449049 Deg	Elevation:	895.775845303986		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	49.6	0.0
Groundline	49.6	0.0
Vertical	22.6	28.1

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	60,865	232.0
Groundline	60,865	232.0
GL Allowable	124,644	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 232.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	902	46.6	36,249	59.6	29.1	1,970	1,809	13	1,984	29.2
Comms	677	35.0	16,593	27.3	13.3	902	1,063	8	910	13.4
PowerEquipments	42	2.2	1,421	2.3	1.1	77	694	5	82	1.2
Pole	256	13.2	5,334	8.8	4.3	290	2,927	22	312	4.6
Risers	55	2.8	1,090	1.8	0.9	59	57	0	60	0.9
Insulators	3	0.2	177	0.3	0.1	10	63	0	10	0.1
Pole Load	1,935	100.0	60,865	100.0	48.8	3,308	6,612	49	3,357	49.4
Pole Reserve Capacity			63,779		51.2	3,492			3,443	50.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 232.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	778	40.2	32,421	53.3	26.0	1,762	1,704	13	1,775	26.1
KU, UTILITY	223	11.5	6,493	10.7	5.2	353	880	7	359	5.3
Unknown, COMMUNICATION	677	35.0	16,617	27.3	13.3	903	1,101	8	911	13.4
Pole	256	13.2	5,334	8.8	4.3	290	2,927	22	312	4.6
Totals:	1,935	100.0	60,865	100.0	48.8	3,308	6,612	49	3,357	49.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.08	15.52	0.5630	0.42	0.291	181.1	141.0	181.1	5,010	-3,612	31	2,306	-1,275
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.08	15.52	0.5630	0.36	0.291	166.9	320.3	166.9	5,010	6,126	29	2,124	8,279
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	11.52	1.1080	2.41	1.093	181.1	141.0	181.1	3,200	-2,288	88	3,460	1,259
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	19.52	1.1080	2.41	1.093	181.1	141.0	181.1	3,200	-2,288	88	3,460	1,259
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	11.52	1.1080	2.15	1.093	166.9	320.3	166.9	3,200	3,881	81	3,187	7,149
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.75	19.52	1.1080	2.15	1.093	166.9	320.3	166.9	3,200	3,881	81	3,187	7,149

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.42	15.52	1.1080	2.41	1.093	181.1	141.0	181.1	3,200	-2,270	88	3,432	1,250
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.42	15.52	1.1080	2.15	1.093	166.9	320.3	166.9	3,200	3,849	81	3,161	7,091
Secondary	DUPLEX 4 AWG	KU, UTILITY	30.79	7.15	0.6300	2.00	0.107	181.1	141.0	181.1	916	-495	39	1,838	1,382
Secondary	DUPLEX 4 AWG	KU, UTILITY	30.79	7.15	0.6300	1.82	0.107	166.9	320.3	166.9	916	840	36	1,693	2,568
Totals:											7,623	641	27,848	36,112	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.24	7.49	0.6570	2.69	0.190	181.1	141.0	181.2	750	-332	51	1,542	1,261
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.24	7.49	0.6570	2.43	0.190	166.9	320.3	166.9	750	563	47	1,421	2,031
CATV	CATV 1.0	Unknown,	23.92	7.57	1.3300	2.74	0.337	181.1	141.0	181.2	925	-388	90	2,311	2,013
CATV	CATV 1.0	Unknown,	23.92	7.57	1.3300	2.46	0.337	166.9	320.3	167.0	925	658	83	2,129	2,870
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.97	7.63	0.6570	2.69	0.190	181.1	141.0	181.2	750	-302	52	1,404	1,153
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.97	7.63	0.6570	2.43	0.190	166.9	320.3	166.9	750	513	48	1,293	1,853
Telco	TELE 1.5	Unknown,	22.18	7.68	1.5000	3.24	0.900	181.1	141.0	181.2	2,000	-779	159	2,343	1,723
Telco	TELE 1.5	Unknown,	22.18	7.68	1.5000	2.91	0.900	166.9	320.3	167.0	2,000	1,320	146	2,158	3,625
Totals:											1,254	675	14,601	16,530	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-25KVA	KU, UTILITY	32.90	21.52	320.0	320.0	365.00	39.00	--	22.00	--	44	1,372	1,416
Totals:											44	1,372	1,416	

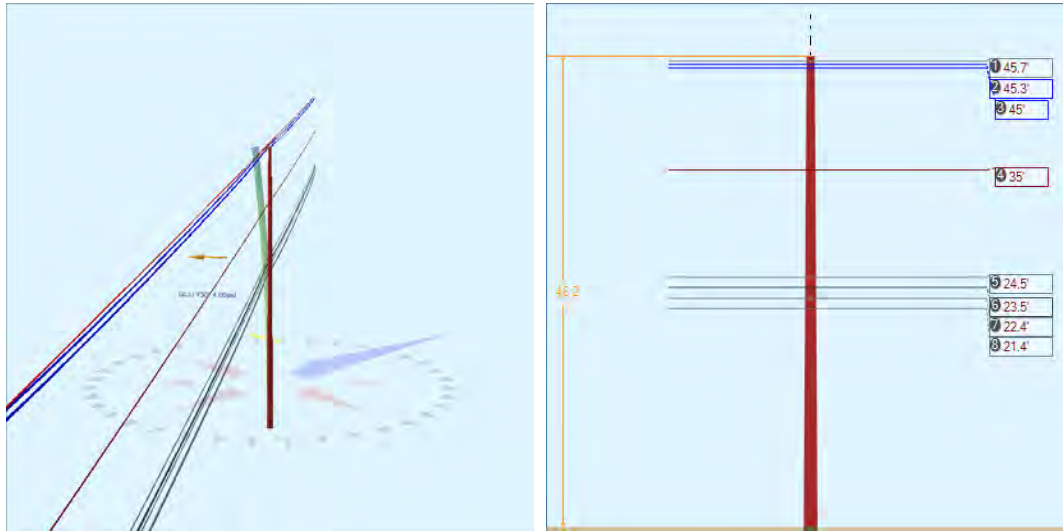
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 360.0°	Riser	KU, UTILITY	29.92	6.81	360.0	360.0	29.92	358.98	4.00	4.00	358.98	-10	1,096	1,086	
												Totals:	-10	1,096	1,086

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	41.08	0.00	230.0	230.0	11.00	4.75	11.50	27	109	136	
Spool	Spool Insulator - 25 kV	30.79	0.00	230.6	140.6	2.00	3.00	3.19	2	14	17	
Bolt	Three Bolt	25.24	0.00	230.6	140.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	23.92	0.00	230.6	140.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	22.97	0.00	230.6	140.6	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	22.18	0.00	230.6	140.6	5.00	3.00	0.00	6	0	6	
									Totals:	53	123	177

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.07	33.96	11.91	21.95	7.96	13.09	1.60e+6	60.00	57.00	41.69	29,231	292.55	4.42

Pole Num:	522W - 26982-3050	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	8.83	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.43	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.004260 Deg	Longitude:	-84.449416 Deg	Elevation:	896.815794229308		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	230.0
Groundline	0.0	230.0
Vertical	29.2	230.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	230.2	230.0
Groundline	230.2	230.0
GL Allowable		

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 230.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	742	44.9	33,155	60.6	24.2	1,640	1,746	12	1,652	24.3
Comms	618	37.4	14,807	27.1	10.8	732	1,027	7	740	10.9
Pole	289	17.5	6,564	12.0	4.8	325	3,380	24	348	5.1
Insulators	3	0.2	192	0.4	0.1	10	63	0	10	0.1
Pole Load	1,652	100.0	54,718	100.0	39.9	2,707	6,215	43	2,750	40.4
Pole Reserve Capacity			82,343		60.1	4,093			4,050	59.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 230.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	631	38.2	29,231	53.4	21.3	1,446	1,646	11	1,457	21.4
KU, UTILITY	114	6.9	4,091	7.5	3.0	202	125	1	203	3.0
Unknown, COMMUNICATION	618	37.4	14,832	27.1	10.8	734	1,065	7	741	10.9
Pole	289	17.5	6,564	12.0	4.8	325	3,380	24	348	5.1
Totals:	1,652	100.0	54,718	100.0	39.9	2,707	6,215	43	2,750	40.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.67	15.51	0.5630	0.36	0.291	166.9	140.3	166.9	5,010	507	29	2,363	2,899
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	45.67	15.51	0.5630	0.37	0.291	169.1	320.1	169.1	5,010	291	29	2,394	2,715
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	11.51	1.1080	2.15	1.093	166.9	140.3	166.9	3,200	322	81	3,548	3,951
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	19.51	1.1080	2.15	1.093	166.9	140.3	166.9	3,200	322	81	3,548	3,951
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	11.51	1.1080	2.19	1.093	169.1	320.1	169.1	3,200	185	82	3,595	3,862
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.33	19.51	1.1080	2.19	1.093	169.1	320.1	169.1	3,200	185	82	3,595	3,862
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.00	15.51	1.1080	2.15	1.093	166.9	140.3	166.9	3,200	319	81	3,522	3,923
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	45.00	15.51	1.1080	2.19	1.093	169.1	320.1	169.1	3,200	183	82	3,569	3,834
Secondary	DUPLEX 4 AWG	KU, UTILITY	35.00	7.15	0.6300	1.82	0.107	166.9	140.3	166.9	916	71	36	1,926	2,033
Secondary	DUPLEX 4 AWG	KU, UTILITY	35.00	7.15	0.6300	1.84	0.107	169.1	320.1	169.1	916	41	36	1,951	2,028
Totals:										2,426	618	30,012	33,057		

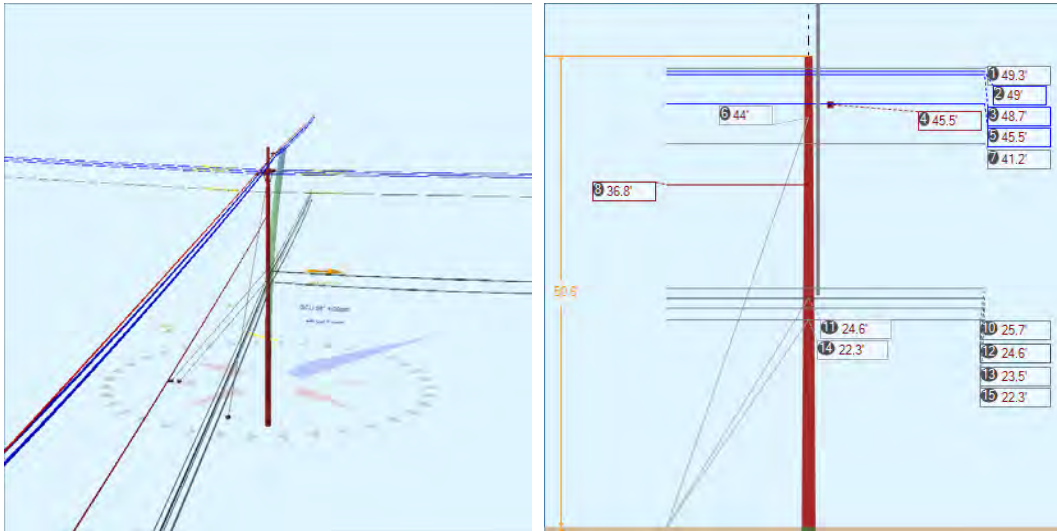
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.50	7.78	0.6570	2.43	0.190	166.9	140.3	166.9	750	41	49	1,380	1,469

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	24.50	7.78	0.6570	2.47	0.190	169.1	320.1	169.1	750	23	49	1,398	1,470
CATV	CATV 1.0	Unknown, COMMUNICATION	23.52	7.84	1.3300	2.46	0.337	166.9	140.3	167.0	925	48	86	2,095	2,229
CATV	CATV 1.0	Unknown, COMMUNICATION	23.52	7.84	1.3300	2.50	0.337	169.1	320.1	169.1	925	28	87	2,122	2,237
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.44	7.90	0.6570	2.43	0.190	166.9	140.3	166.9	750	37	49	1,264	1,351
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.44	7.90	0.6570	2.47	0.190	169.1	320.1	169.1	750	21	50	1,280	1,352
Telco	TELE 1.5	Unknown, COMMUNICATION	21.42	7.97	1.5000	2.91	0.900	166.9	140.3	167.0	2,000	95	152	2,086	2,333
Telco	TELE 1.5	Unknown, COMMUNICATION	21.42	7.97	1.5000	2.96	0.900	169.1	320.1	169.1	2,000	55	154	2,113	2,322
Totals:											348	676	13,739	14,763	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	45.67	0.00	230.0	230.0	11.00	4.75	11.50	27	121	148
Spool	Spool Insulator - 25 kV	KU, UTILITY	35.00	0.00	230.2	140.2	2.00	3.00	3.19	2	16	19
Bolt	Three Bolt	Unknown, COMMUNICATION	24.50	0.00	230.2	140.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.52	0.00	230.2	140.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.44	0.00	230.2	140.2	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.42	0.00	230.2	140.2	5.00	3.00	0.00	6	0	6
Totals:										54	138	192

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.25	33.90	12.31	21.89	7.96	13.51	1.60e+6	60.00	57.00	46.17	30,757	307.70	4.95

Pole Num:	523W - 26982-3040	Pole Length / Class:	60 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	9.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	46.70	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.004627 Deg	Longitude:	-84.449741 Deg	Elevation:	906.648828693497		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	29.9	24.7
Groundline	9.5	104.1
Vertical	9.5	26.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,199	43.6
Groundline	15,878	77.1
GL Allowable	182,705	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	23.8	154.0	44.1	29.1	56.3	33.7	340.0
? Single Helix Anchor ? EHS 1/4 (Down)	21.1	230.0	24.6	42.0	56.3	53.5	340.0
? Single Helix Anchor ? EHS 1/4 (Down)	19.3	230.0	22.3	24.0	56.3	24.0	54.2
				80.1	56.3	88.1	54.2
				20.8	56.3	20.8	54.2
				69.3	56.3	76.3	54.2
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 77.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	233	103.7	6,242	39.3	3.4	349	1,986	11	360	5.3
Comms	3,982	1771.3	61,918	390.0	33.9	3,460	1,268	7	3,467	51.0
GuyBraces	-4,486	-1995.3	-61,685	-388.5	-33.8	-3,447	18,004	104	-3,343	-49.2
Pole	324	144.1	5,322	33.5	2.9	297	4,436	26	323	4.7
Crossarms	64	28.6	1,950	12.3	1.1	109	190	1	110	1.6
Risers	77	34.3	1,219	7.7	0.7	68	67	0	68	1.0
Insulators	30	13.2	912	5.8	0.5	51	135	1	52	0.8
Pole Load	225	100.0	15,878	100.0	8.7	887	26,086	150	1,037	15.3
Pole Reserve Capacity			166,827		91.3	5,913			5,763	84.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 77.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	679	302.2	22,513	141.8	12.3	1,258	1,510	9	1,267	18.6
KU, UTILITY	294	130.7	4,420	27.8	2.4	247	8,363	48	295	4.3
Unknown, COMMUNICATION	-1,137	-505.6	-18,327	-115.4	-10.0	-1,024	11,588	67	-957	-14.1
Pole	324	144.1	5,322	33.5	2.9	297	4,436	26	323	4.7
<Undefined>	64	28.6	1,950	12.3	1.1	109	190	1	110	1.6
Totals:	225	100.0	15,878	100.0	8.7	887	26,086	150	1,037	15.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	49.33	15.88	0.5630	0.40	0.291	177.3	140.1	177.3	5,010	146,030	30	2,401	148,461
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	49.33	15.88	0.5630	0.22	0.291	130.6	320.8	130.6	5,010	-142,522	22	1,782	-140,718
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.00	11.88	1.1080	2.34	1.093	177.3	140.1	177.3	3,200	92,642	83	3,608	96,333
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.00	19.88	1.1080	2.34	1.093	177.3	140.1	177.3	3,200	92,642	83	3,608	96,333
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.00	11.88	1.1080	1.54	1.093	130.6	320.8	130.6	3,200	-90,417	61	2,677	-87,678
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	49.00	19.88	1.1080	1.54	1.093	130.6	320.8	130.6	3,200	-90,417	61	2,677	-87,678
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.67	15.88	1.1080	2.34	1.093	177.3	140.1	177.3	3,200	92,012	84	3,583	95,679
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	48.67	15.88	1.1080	1.54	1.093	130.6	320.8	130.6	3,200	-89,802	62	2,659	-87,081
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	45.52	6.57	0.3980	0.32	0.145	151.6	51.3	151.6	2,128	113,346	16	69	113,430
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	45.52	47.57	0.3980	0.32	0.145	151.6	51.3	151.6	2,128	113,346	-3	69	113,412
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	45.52	43.28	0.3980	0.32	0.145	151.6	51.3	151.6	2,128	113,346	8	69	113,423
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	45.52	19.05	0.3980	0.39	0.145	167.9	250.9	167.9	2,128	-125,185	-21	-55	-125,260
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	45.52	50.82	0.3980	0.39	0.145	167.9	250.9	167.9	2,128	-125,185	-13	-55	-125,252
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	45.52	46.83	0.3980	0.39	0.145	167.9	250.9	167.9	2,128	-125,185	-3	-55	-125,242
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.24	7.38	0.3980	0.32	0.145	151.6	51.3	151.6	2,128	102,674	-8	63	102,728

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	41.24	7.38	0.3980	0.39	0.145	167.9	250.9	167.9	2,128	-113,398	-9	-50	-113,457
Secondary	TRIPLEX 4 AWG	KU, UTILITY	36.82	7.65	0.6800	2.07	0.164	177.3	140.1	177.3	916	19,928	22	1,990	21,940
											Totals:	-16,146	474	25,042	9,371

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.68	8.34	0.6570	2.62	0.190	177.3	140.1	177.3	750	11,379	49	1,360	12,789
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.68	8.34	0.6570	1.80	0.190	130.6	320.8	130.6	750	-11,106	36	1,010	-10,060
CATV	CATV 1.0	Unknown,	24.62	8.41	1.3300	2.15	0.337	151.6	51.3	151.6	925	26,650	75	76	26,801
CATV	CATV 1.0	Unknown,	24.62	8.41	1.3300	2.66	0.337	177.3	140.1	177.3	925	13,457	87	2,063	15,607
CATV	CATV 1.0	Unknown,	24.62	8.41	1.3300	1.81	0.337	130.6	320.8	130.6	925	-13,133	64	1,531	-11,538
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.54	8.48	0.6570	2.62	0.190	177.3	140.1	177.3	750	10,431	50	1,247	11,728
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.54	8.48	0.6570	1.80	0.190	130.6	320.8	130.6	750	-10,180	37	926	-9,218
Telco	TELE 1.5	Unknown,	22.30	8.55	1.5000	2.54	0.900	151.6	51.3	151.6	2,000	52,177	132	75	52,384
Telco	TELE 1.5	Unknown,	22.30	8.55	1.5000	3.15	0.900	177.3	140.1	177.4	2,000	26,346	155	2,042	28,543
Telco	TELE 1.5	Unknown,	22.30	8.55	1.5000	2.12	0.900	130.6	320.8	130.6	2,000	-25,713	114	1,515	-24,084
											Totals:	80,307	801	11,846	92,953

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal	Crossarm	45.52	6.36	241.1	241.1	50.00	4.50	3.50	96.00	0	2,927	2,927		
											Totals:	0	2,927	2,927

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Riser 150.0°	Riser	KU, UTILITY	35.45	7.76	150.0	150.0	35.45	425.36	4.00	4.00	425.36	6	1,823	1,830
Totals:												6	1,823	1,830

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	49.33	0.00	50.0	50.0	11.00	4.75	11.50	25	122	147
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.52	0.00	241.1	-189.8	3.00	3.80	12.75	5	200	206
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.52	45.00	323.0	-189.8	3.00	3.80	12.75	-7	200	194
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.52	-45.00	159.1	-189.8	3.00	3.80	12.75	17	200	217
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.52	0.00	241.1	9.8	3.00	3.80	12.75	-18	200	183
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.52	45.00	323.0	9.8	3.00	3.80	12.75	-30	200	171
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	45.52	-45.00	159.1	9.8	3.00	3.80	12.75	-6	200	194
Spool	Spool Insulator - 25 kV	KU, UTILITY	41.24	0.00	331.1	241.1	2.00	3.00	3.19	-1	18	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	36.82	0.00	140.1	140.1	2.00	3.00	3.19	1	16	17
Bolt	Three Bolt	Unknown, COMMUNICATION	25.68	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.62	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.54	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.30	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6
Totals:										11	1,359	1,370

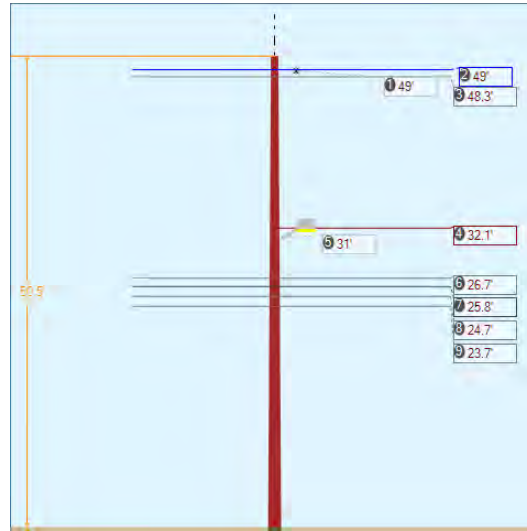
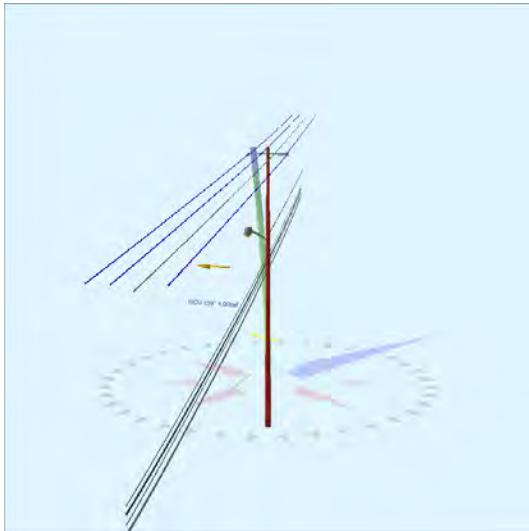
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	44.05	0.00	23.81	0.375	75.00	154.0	61.4	0.273	48.39	1.77
EHS 1/4	Down	Unknown, COMMUNICATION	24.62	0.00	21.09	0.25	75.00	230.0	49.3	0.121	30.60	2.08
EHS 1/4	Down	Unknown, COMMUNICATION	22.30	0.00	19.31	0.25	75.00	230.0	48.9	0.121	27.67	1.63

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension2 (lbs)	Applied Tension3 (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL3 (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	7,413	6,739	5,819	5,108	2,787	633	27,887
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	5,272	4,793	4,792	3,630	3,128	-2,784	-67,392
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	4,565	4,150	4,149	3,129	2,726	-2,426	-53,099
Totals:										11,866	8,641	-4,576	-92,603

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load2 (lbs)	Load at Pole MCU3 (lbs)	Max Required Capacity2 (%)
Single Helix Anchor		18.00	23.81	154.0	20,000	1.00	20,000	6,739	5,819	33.7
Single Helix Anchor		18.00	21.09	230.0	20,000	1.00	20,000	4,793	4,792	24.0
Single Helix Anchor		18.00	19.31	230.0	20,000	1.00	20,000	4,150	4,149	20.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	33.05	34.13	13.47	27.69	8.60	14.87	1.60e+6	60.00	57.00	50.65	275,595	2745.95	10.53

Pole Num:	524W - 26982-3024	Pole Length / Class:	60 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.50	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.70	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.004898 Deg	Longitude:	-84.450124 Deg	Elevation:	912.653639814514		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.0	0.0
Groundline	45.0	0.0
Vertical	13.8	27.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	66,562	258.6
Groundline	66,562	258.6
GL Allowable	149,785	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 258.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,066	56.3	44,318	66.6	29.6	2,005	701	5	2,009	29.5
Comms	468	24.7	12,236	18.4	8.2	554	797	5	559	8.2
Pole	304	16.1	7,489	11.3	5.0	339	3,847	25	364	5.4
Crossarms	4	0.2	203	0.3	0.1	9	95	1	10	0.1
Streetlights	37	2.0	1,580	2.4	1.1	72	171	1	73	1.1
Insulators	14	0.8	736	1.1	0.5	33	80	1	34	0.5
Pole Load	1,894	100.0	66,562	100.0	44.4	3,011	5,691	37	3,048	44.8
Pole Reserve Capacity			83,223		55.6	3,789			3,752	55.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 258.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,118	59.0	46,611	70.0	31.1	2,109	914	6	2,115	31.1
Unknown, COMMUNICATION	468	24.7	12,258	18.4	8.2	555	835	5	560	8.2
Pole	304	16.1	7,489	11.3	5.0	339	3,847	25	364	5.4
<Undefined>	4	0.2	203	0.3	0.1	9	95	1	10	0.1
Totals:	1,894	100.0	66,562	100.0	44.4	3,011	5,691	37	3,048	44.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.04	25.86	0.7200	0.31	0.462	130.4	319.9	130.4	6,210	146,348	31	1,968	148,347
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.04	48.68	0.7200	0.31	0.462	130.4	319.9	130.4	6,210	146,348	-20	1,968	148,296
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.04	48.68	0.7200	0.31	0.462	130.4	319.9	130.4	6,210	146,348	32	1,968	148,348
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.04	48.50	0.7200	0.31	0.462	130.6	140.8	130.6	6,210	-142,135	-30	1,993	-140,172
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.04	19.29	0.7200	0.31	0.462	130.6	140.8	130.6	6,210	-142,135	21	1,993	-140,121
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	49.04	48.50	0.7200	0.31	0.462	130.6	140.8	130.6	6,210	-142,135	26	1,993	-140,116

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	48.27	6.61	0.3980	0.31	0.145	130.4	319.9	130.4	2,128	49,363	-21	1,426	50,768
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	48.27	6.61	0.3980	0.32	0.145	130.6	140.8	130.6	2,128	-47,942	-21	1,444	-46,519
Secondary	DUPLEX 4 AWG	KU, UTILITY	32.08	7.56	0.6300	1.36	0.107	130.4	319.9	130.4	916	14,122	14	1,192	15,329
											Totals:	28,182	31	15,946	44,159

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 26.70	7.88	0.6570	1.80	0.190	130.6	140.8	130.6	750	-9,346	34	1,029	-8,282	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 26.70	7.88	0.6570	1.79	0.190	130.4	319.9	130.4	750	9,623	34	1,016	10,672	
CATV	CATV 1.0	Unknown, 25.80	7.93	1.3300	1.81	0.337	130.6	140.8	130.6	925	-11,141	60	1,573	-9,507	
CATV	CATV 1.0	Unknown, 25.80	7.93	1.3300	1.81	0.337	130.4	319.9	130.4	925	11,471	60	1,553	13,084	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 24.74	8.00	0.6570	1.80	0.190	130.6	140.8	130.6	750	-8,660	34	954	-7,672	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, 24.74	8.00	0.6570	1.79	0.190	130.4	319.9	130.4	750	8,917	34	942	9,893	
Telco	TELE 1.5	Unknown, 23.69	8.06	1.5000	2.12	0.900	130.6	140.8	130.6	2,000	-22,117	106	1,579	-20,432	
Telco	TELE 1.5	Unknown, 23.69	8.06	1.5000	2.11	0.900	130.4	319.9	130.4	2,000	22,773	106	1,559	24,437	
											Totals:	1,519	468	10,205	12,192

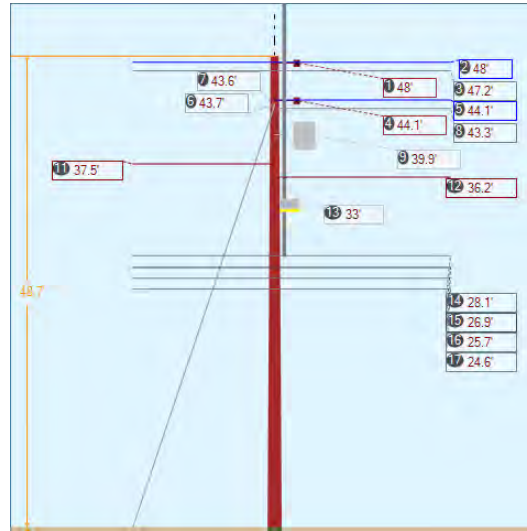
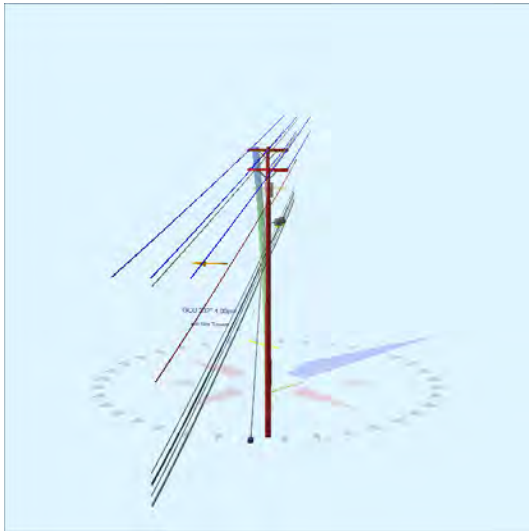
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	49.04	5.82	319.9	319.9	50.00	4.50	3.50	96.00	22	181	203	
										Totals:	22	181	203

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	31.05	5.13	245.0	245.0	45.00	24.00	20.00	3.00	36.00	236	581	817	
General	Streetlight - 3 ft. Arm	31.05	5.13	215.0	215.0	45.00	24.00	20.00	3.00	36.00	176	581	757	
											Totals:	412	1,162	1,574

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.04	-18.00	247.8	0.0	3.00	3.80	12.75	12	109	121
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.04	45.00	42.6	0.0	3.00	3.80	12.75	-15	109	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.04	-45.00	237.3	0.0	3.00	3.80	12.75	23	109	132
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.04	48.00	43.0	180.0	3.00	3.80	12.75	-22	109	87
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.04	-18.00	247.8	180.0	3.00	3.80	12.75	6	109	115
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	49.04	-48.00	236.8	180.0	3.00	3.80	12.75	18	109	127
Spool	Spool Insulator - 25 kV	KU, UTILITY	48.27	0.00	49.9	319.9	2.00	3.00	3.19	-2	21	19
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.08	0.00	319.9	319.9	2.00	3.00	3.19	1	14	15
Bolt	Three Bolt	Unknown, COMMUNICATION	26.70	0.00	230.4	140.4	5.00	3.00	0.00	5	0	5
Bolt	Three Bolt	Unknown, COMMUNICATION	25.80	0.00	230.4	140.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.74	0.00	230.4	140.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.69	0.00	230.4	140.4	5.00	3.00	0.00	6	0	6
Totals:										45	689	734

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	27.42	33.49	12.83	20.69	7.96	13.92	1.60e+6	60.00	57.00	50.50	41,198	412.42	7.25

Pole Num:	525W - 26982-3010	Pole Length / Class:	60 / 1	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	11.32	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	45.93	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.005189 Deg	Longitude:	-84.450360 Deg	Elevation:	916.700611443422		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	232.0
Groundline	0.0	232.0
Vertical	40.5	320.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	62,155	240.7
Groundline	62,155	240.7
GL Allowable	173,871	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	35.4	140.0		43.4	232.0	44.9	320.0
? EHS 3/8 (Down)			43.7	62.6	232.0	71.2	320.0
? Single Helix Anchor	34.5	140.0		43.2	232.0	44.7	320.0
? EHS 3/8 (Down)			43.6	62.3	232.0	70.9	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 240.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	2,838	156.2	118,371	190.4	68.1	4,909	905	5	4,914	72.3
Comms	423	23.3	10,863	17.5	6.3	451	684	4	455	6.7
GuyBraces	-1,972	-108.6	-81,145	-130.6	-46.7	-3,365	20,390	121	-3,244	-47.7
PowerEquipments	36	2.0	1,557	2.5	0.9	65	636	4	68	1.0
Pole	326	17.9	7,301	11.8	4.2	303	4,170	25	328	4.8
Crossarms	6	0.3	253	0.4	0.2	11	380	2	13	0.2
Streetlights	34	1.9	789	1.3	0.5	33	171	1	34	0.5
Risers	69	3.8	1,655	2.7	1.0	69	73	0	69	1.0
Insulators	56	3.1	2,512	4.0	1.4	104	148	1	105	1.5
Pole Load	1,816	100.0	62,155	100.0	35.8	2,578	27,558	164	2,742	40.3
Pole Reserve Capacity			111,716		64.3	4,222			4,058	59.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 240.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,061	58.4	43,714	70.3	25.1	1,813	22,285	133	1,946	28.6
Unknown, COMMUNICATION	423	23.3	10,887	17.5	6.3	452	722	4	456	6.7
Pole	326	17.9	7,301	11.8	4.2	303	4,170	25	328	4.8
<Undefined>	6	0.3	253	0.4	0.2	11	380	2	13	0.2
Totals:	1,816	100.0	62,155	100.0	35.8	2,578	27,558	164	2,742	40.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.05	23.22	0.7200	0.29	0.462	125.2	139.9	125.2	6,210	-72,846	-6	2,101	-70,750
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.05	50.68	0.7200	0.29	0.462	125.2	139.9	125.2	6,210	-72,846	26	2,101	-70,718
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.05	50.59	0.7200	0.29	0.462	125.2	139.9	125.2	6,210	-72,846	-31	2,101	-70,776
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.05	23.22	0.7200	0.18	0.462	98.8	319.6	98.8	6,210	74,840	5	1,655	76,500

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.05	50.68	0.7200	0.18	0.462	98.8	319.6	98.8	6,210	74,840	25	1,655	76,520
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	48.05	50.59	0.7200	0.18	0.462	98.8	319.6	98.8	6,210	74,840	-20	1,655	76,474
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.16	17.14	0.3980	0.29	0.145	125.2	139.9	125.2	2,128	-24,500	-3	1,518	-22,985
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.16	17.14	0.3980	0.18	0.145	98.8	319.6	98.8	2,128	25,170	2	1,196	26,369
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.15	23.46	0.7200	0.85	0.462	98.8	319.6	98.8	2,210	24,471	5	1,521	25,997
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.15	50.75	0.7200	0.85	0.462	98.8	319.6	98.8	2,210	24,471	-21	1,521	25,970
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	44.15	50.75	0.7200	0.85	0.462	98.8	319.6	98.8	2,210	24,471	26	1,521	26,018
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	43.27	17.38	0.3980	0.18	0.145	98.8	319.6	98.8	2,128	23,092	2	1,097	24,192
Secondary	TRIPLEX 4 AWG	KU, UTILITY	37.54	7.49	0.6800	1.38	0.164	125.2	139.9	125.2	916	-8,394	-6	1,588	-6,813
Secondary	TRIPLEX 4 AWG	KU, UTILITY	36.18	7.57	0.6800	1.05	0.164	98.8	319.6	98.8	916	8,313	5	1,206	9,524
											Totals:	103,075	9	22,437	125,521

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	28.06	8.07	0.6570	1.71	0.190	125.2	139.9	125.2	750	-5,138	37	1,164	-3,937
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	28.06	8.07	0.6570	1.29	0.190	98.8	319.6	98.8	750	5,278	29	917	6,224
CATV	CATV 1.0	Unknown,	26.85	8.15	1.3300	1.72	0.337	125.2	139.9	125.2	925	-6,064	66	1,762	-4,237
CATV	CATV 1.0	Unknown,	26.85	8.15	1.3300	1.30	0.337	98.8	319.6	98.8	925	6,230	52	1,388	7,669
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.75	8.22	0.6570	1.71	0.190	125.2	139.9	125.2	750	-4,714	38	1,068	-3,609
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.75	8.22	0.6570	1.29	0.190	98.8	319.6	98.8	750	4,843	30	841	5,714
Telco	TELE 1.5	Unknown,	24.63	8.29	1.5000	2.01	0.900	125.2	139.9	125.2	2,000	-12,024	116	1,766	-10,142
Telco	TELE 1.5	Unknown,	24.63	8.29	1.5000	1.51	0.900	98.8	319.6	98.8	2,000	12,353	92	1,391	13,835
											Totals:	765	460	10,295	11,519

PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-15KVA	KU, UTILITY	39.93	21.84	320.0	320.0	335.00	34.00	--	22.00	--	216	1,435	1,651
Totals:												216	1,435	1,651

Crossarm		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		48.05	6.09	139.8	139.8	50.00	4.50	3.50	96.00	0	139	139	
Normal	Crossarm		44.15	6.33	319.6	319.6	50.00	4.50	3.50	96.00	0	130	130	
Totals:												0	269	269

Streetlight		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General	Streetlight - 3 ft. Arm	KU, UTILITY	32.99	5.27	40.0	40.0	45.00	12.00	20.00	3.00	18.00	-148	561	413
General	Streetlight - 3 ft. Arm	KU, UTILITY	32.99	5.27	90.0	90.0	45.00	12.00	20.00	3.00	18.00	-138	561	423
Totals:												-286	1,122	837

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	Riser	KU, UTILITY	38.20	7.76	360.0	360.0	38.20	458.35	4.00	4.00	458.35	-11	1,766	1,755
Totals:												-11	1,766	1,755

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	48.05	0.00	139.8	0.2	3.00	3.90	17.13	-4	308	304
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	48.05	45.00	222.1	0.2	3.00	3.90	17.13	38	308	346
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	48.05	-45.00	57.5	0.2	3.00	3.90	17.13	-46	308	262
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	48.05	0.00	319.8	179.8	3.00	3.90	17.13	4	308	313
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	48.05	45.00	237.5	179.8	3.00	3.90	17.13	46	308	355
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	48.05	-45.00	42.1	179.8	3.00	3.90	17.13	-38	308	271
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	47.16	0.00	139.9	139.9	3.00	3.80	12.75	-2	110	108
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	47.16	0.00	319.6	319.6	3.00	3.80	12.75	2	110	111
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	44.15	0.00	319.6	0.0	3.00	3.90	17.13	2	142	144

Deadend	Deadend Insulator - 25 kV	KU, UTILITY	44.15	45.00	41.6	0.0	3.00	3.90	17.13	-19	142	123
Deadend	Deadend Insulator - 25 kV	KU, UTILITY	44.15	-45.00	237.6	0.0	3.00	3.90	17.13	23	142	165
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	43.27	0.00	319.6	319.6	3.00	3.80	12.75	2	101	102
Spool	Spool Insulator - 25 kV	KU, UTILITY	37.54	0.00	139.9	139.9	2.00	3.00	3.19	0	17	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	36.18	0.00	319.6	319.6	2.00	3.00	3.19	0	17	17
Bolt	Three Bolt	Unknown, COMMUNICATION	28.06	0.00	229.8	139.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	26.85	0.00	229.8	139.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.75	0.00	229.8	139.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.63	0.00	229.8	139.8	5.00	3.00	0.00	6	0	6
Totals:										34	2,630	2,664

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	43.69	0.00	35.39	0.375	75.00	140.0	50.8	0.273	54.49	2.98
EHS 3/8	Down	KU, UTILITY	43.58	0.00	34.48	0.375	75.00	140.0	51.5	0.273	53.83	2.93

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,875	8,977	8,678	6,726	5,483	-1,020	-43,511
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	9,825	8,932	8,631	6,752	5,377	-1,001	-42,536
Totals:										13,478	10,860	-2,021	-86,047

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	35.39	140.0	20,000	1.00	20,000	8,977	8,678	44.9
Single Helix Anchor			18.00	34.48	140.0	20,000	1.00	20,000	8,932	8,631	44.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	40.50	35.14	12.86	31.36	8.60	14.63	1.60e+6	60.00	57.00	48.68	152,487	1522.53	5.52

45' 7" - 500W - 500-41

27' - Lowest Power

25' 6" - Proposed Metronet

22' 10" - Highest Tel Cable

4' - Base offset

Base

WIN7216

46' 3" - 501W - 500-40

28' 7" - Lowest Power

26' 10" - Proposed Metronet

22' 2" - Highest Tel Cable

4' - Base offset

Base

45' 7" - 502W - 500-39

29' 4" - Lowest Power

28' 10" - Proposed Metronet

23' 1" - Highest Tel Cable

4' - Base offset

Base

48' 4" - 503W - NT



35' 4" - Lowest Power

33' 5" - Proposed Metronet

25' 11" - Highest Tel Cable

4' - Base offset

Base

49' 1" - 504W - 500-37

32' 8" - Lowest Power

29' 4" - Proposed Metronet

27' 8" - Highest Tel Cable

4' - Base offset

Base

WIN7220



44' 6" - 505W - 500-36

32' 1" - Lowest Power

28' 9" - Proposed Metronet

26' 1" - Highest Tel Cable

Sand Lake

Richmond

4' - Base offset

Base

43' 7" - 506W - 500-35-20

32' 9" - Lowest Power

29' 5" - Proposed Metronet

24' 1" - Highest Tel Cable

4' - Base offset

Base

WIN7222

41' 2" - 507W - 500-35

31' - Lowest Power

30' 5" - Proposed Metronet

24' 7" - Highest Tel Cable

23' 9" - Highest Tel Drop

4' - Base offset

Base

41' 11" - 509W - 500-34

28' 11" - Lowest Power

25' 6" - Proposed Metronet

20' 9" - Highest Tel Cable

4' - Base offset

Base



42' 5" - 510W - 500-33

29' 11" - Lowest Power

26' 7" - Proposed Metronet

22' 4" - Highest Tel Cable

4' - Base offset

Base

43' 4" - 511W - 500-32

34' 1" - Lowest Power

30' 9" - Proposed Metronet

25' 10" - Highest Tel Cable

Richmond Rd

4' - Base offset

Base

47' 10" - 512W - 26982-3160

34' 1" - Lowest Power

31' 5" - Proposed Metronet

26' 5" - Highest Tel Cable

4' - Base offset

Base

43' 5" - 513W - 26982-3150

29' 6" - Lowest Power

26' - Proposed Metronet

23' 11" - Highest Tel Cable

23' - Base offset

Base

49' - 514W - 26982-3130

37' 4" - Lowest Power

34' - Proposed Metronet

29' 3" - Highest Tel Cable

4' - Base offset

Base

43' 9" - 515W - 26982-3120

31' 1" - Lowest Power

28' 10" - Proposed Metronet

24' 8" - Highest Tel Cable



4' - Base offset

Base

41' 1" - 516W - 26982-3110

28' - Lowest Power

25' 2" - Proposed Metronet

20' 10" - Highest Tel Cable

4' - Base offset

Base

WIN7231

42' 8" - 517W - 26982-3104

27' 8" - Lowest Power

24' 4" - Proposed Metronet

21' 11" - Highest Tel Cable

4' - Base offset

Base

44' - 518W - 26982-3190

29' 3" - Lowest Power

25' 10" - Proposed Metronet

22' 3" - Highest Tel Cable

21' 8" - Highest Tel Drop

4' - Base offset

Base

WIN7233

43' 10" - 519W - 26982-3098

31' 4" - Lowest Power

27' 7" - Proposed Metronet

23' 5" - Highest Tel Cable

4' - Base offset

Base

40' 3" - 520W - 26982-3094

28' 1" - Lowest Power

26' 2" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

Base

41' 8" - 521W - 26982-3090

29' 11" - Lowest Power

27' 3" - Proposed Metronet

23' 1" - Highest Tel Cable

4' - Base offset

Base



46' 2" - 522W - 26982-3050

34' 11" - Lowest Power

26' 6" - Proposed Metronet

22' 5" - Highest Tel Cable

4' - Base offset

Base

50' 6" - 523W - 26982-3040

35' 6" - Lowest Power

27' 8" - Proposed Metronet

23' 6" - Highest Tel Cable

4' - Base offset

Base

WIN7238



50' 6" - 524W - 26982-3024

31' 1" - Lowest Power

28' 8" - Proposed Metronet

24' 9" - Highest Tel Cable

4' - Base offset

Base

WIN7239

48' 7" - 525W - 26982-3010

32' 8" - Lowest Power

30' 1" - Proposed Metronet

25' 9" - Highest Tel Cable

4' - Base offset

Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Sunday, March 18, 2018 2:44 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX-FR02-04W
Attachments: Map Key.pdf; LX-FR02-04W - Windstream Inventory Report.pdf; LX-FR02-04W - METRONET POLE INVENTORY REPORT.XLSX; LX-FR02-04W MAP.PDF; O-Calcs.pdf; Pole Photos.pdf

Good Morning,
Please see attached for proposal titled LX-FR02-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



529W	26982-2950		WS	
529W	26982-2950		WS	
529W	26982-2950		WS	
529W	26982-2950		WS	
529W	26982-2950		WS	
529W	26982-2950		WS	
529W	26982-2950		WS	
530W	26982-2900	50/ 2	WS	3=Elec
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
530W	26982-2900		WS	
531W	NT	50/ 2	WS	1=None
531W	NT		WS	
531W	NT		WS	
531W	NT		WS	
531W	NT		WS	
531W	NT		WS	
531W	NT		WS	
531W	NT		WS	
531W	NT		WS	
532W	26982-2820	50/ 2	WS	1=None
532W	26982-2820		WS	
532W	26982-2820		WS	
532W	26982-2820		WS	
532W	26982-2820		WS	
532W	26982-2820		WS	
533W	26982-2800	50/ 2	WS	1=None
533W	26982-2800		WS	
533W	26982-2800		WS	
533W	26982-2800		WS	
533W	26982-2800		WS	
533W	26982-2800		WS	
533W	26982-2800		WS	
533W	26982-2800		WS	
536W	26982-2780	50/ 2	WS	1=None

Owner	1=None	2=Comms	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude
by:	4=Comms&Elec	5=Simple PCO					

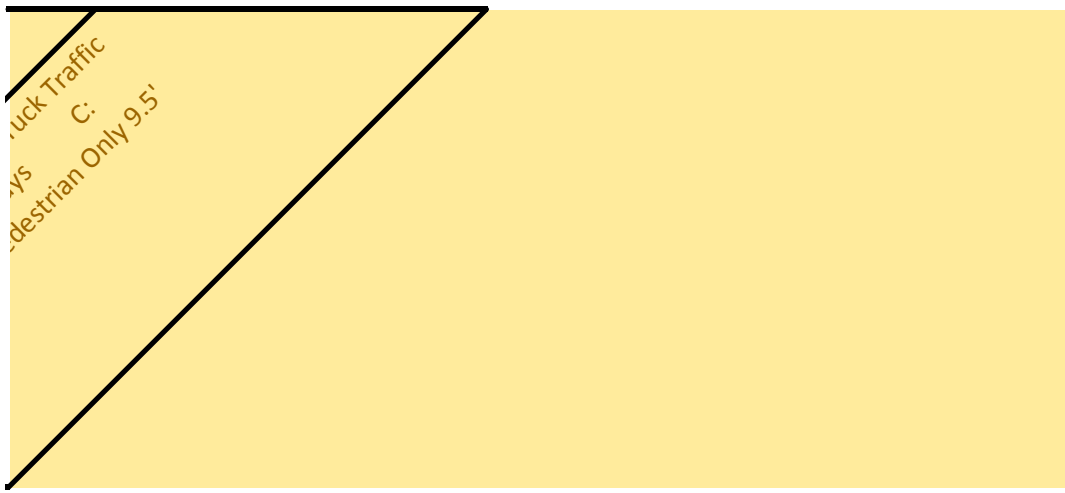
3010 RICHMOND RD	38.00538	-84.45056	KU
	38.00538	-84.45056	KU
	38.00538	-84.45056	KU
	38.00538	-84.45056	KU
	38.00538	-84.45056	KU
	38.00538	-84.45056	KU
	38.00538	-84.45056	KU
	38.00538	-84.45056	Metronet
	38.00538	-84.45056	Level 3
	38.00538	-84.45056	Level 3
	38.00538	-84.45056	Charter
	38.00538	-84.45056	Charter
	38.00538	-84.45056	Windstream
	38.00538	-84.45056	Windstream
2990 RICHMOND RD	38.00570	-84.45092	KU
	38.00570	-84.45092	KU
	38.00570	-84.45092	KU
	38.00570	-84.45092	Metronet
	38.00570	-84.45092	Level 3
	38.00570	-84.45092	Charter
	38.00570	-84.45092	Windstream
	38.00570	-84.45092	Windstream
2940 RICHMOND RD	38.00588	-84.45111	KU
	38.00588	-84.45111	KU
	38.00588	-84.45111	KU
	38.00588	-84.45111	KU
	38.00588	-84.45111	Metronet
	38.00588	-84.45111	Level 3
	38.00588	-84.45111	Charter
	38.00588	-84.45111	Windstream
	38.00588	-84.45111	Windstream
2940 RICHMOND RD	38.00611	-84.45133	KU
	38.00611	-84.45133	KU

		38.00611	-84.45133	KU	
		38.00611	-84.45133	KU	
		38.00611	-84.45133	Metronet	
Lower Level 3		38.00611	-84.45133	Level 3	
Lower Charter		38.00611	-84.45133	Charter	
Lower Windstream		38.00611	-84.45133	Windstream	
Lower Windstream		38.00611	-84.45133	Windstream	
	34.70	2940 RICHMOND RD	38.00646	-84.45171	KU
			38.00646	-84.45171	KU
			38.00646	-84.45171	KU
			38.00646	-84.45171	KU
			38.00646	-84.45171	KU
			38.00646	-84.45171	KU
Extend secondary riser			38.00646	-84.45171	KU
			38.00646	-84.45171	Metronet
			38.00646	-84.45171	Level 3
			38.00646	-84.45171	Charter
			38.00646	-84.45171	Windstream
			38.00646	-84.45171	Windstream
		2890 RICHMOND RD	38.00681	-84.45208	KU
			38.00681	-84.45208	KU
			38.00681	-84.45208	KU
			38.00681	-84.45208	KU
			38.00681	-84.45208	Metronet
			38.00681	-84.45208	Level 3
			38.00681	-84.45208	Charter
			38.00681	-84.45208	Windstream
			38.00681	-84.45208	Windstream
		2890 RICHMOND RD	38.00700	-84.45231	KU
			38.00700	-84.45231	Metronet
			38.00700	-84.45231	Level 3
			38.00700	-84.45231	Charter
			38.00700	-84.45231	Windstream
			38.00700	-84.45231	Windstream
		2850 RICHMOND RD	38.00726	-84.45262	KU
			38.00726	-84.45262	KU
			38.00726	-84.45262	KU
			38.00726	-84.45262	KU
			38.00726	-84.45262	Metronet
			38.00726	-84.45262	Level 3
			38.00726	-84.45262	Charter
			38.00726	-84.45262	Windstream
			38.00726	-84.45262	Windstream
		2800 RICHMOND RD	38.00767	-84.45304	KU

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance Comm to Ground	3rd Party Comm Clearance to Power	3rd Party Comm Clearance Issue At Pole	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
--------------------------------	---------	----------------------------	----------------------------	-----------------------------	-----------------------------------	-----------------------------------	--	------------------	-------------------------------------	--------------------------------

Neutral	47'1"			Y	N			B: Residential/Over Driveways		
OH Guy	46'6"			Y	N					
Primary	44'11"			Y	N					
Primary	43'3"			Y	N					
Primary	41'7"			Y	N					
Secondary	36'5"			Y	N					
Secondary Drip Loop	35'5"			Y	N					
Communication		29'6"		Y	N					
Communication	27'6"		101	Y	N					
Communication	27'2"			Y	N					
Communication	26'5"			Y	N					
Communication	26'0"			Y	N					
Communication	25'3"			Y	N					
Communication	24'1"	25'2"		Y	N					
Primary	38'6"			N	N			D: Pedestrian Only 9.5'		
Secondary	33'7"			N	N					
Streetlight	28'7"			N	N					
Communication		26'7"		N	N					
Communication	24'7"		159	N	N					
Communication	23'8"			N	N					
Communication	22'8"			N	N					
Communication	21'9"	21'0"		N	N					
Primary	41'6"			N	N			D: Pedestrian Only 9.5'		
Neutral	40'2"			N	N					
Neutral	37'1"			N	N					
Primary	33'3"			N	N					
Communication		26'7"		N	N					
Communication	24'7"		121	N	N					
Communication	23'8"			N	N					
Communication	22'7"			N	N					
Communication	21'10"	20'1"		N	N					
Primary	39'6"			N	N			D: Pedestrian Only 9.5'		
Primary	36'7"			N	N					

Primary	32'6"			N	N	
Neutral	28'6"			N	N	
Communication		25'1"		N	N	
Communication	25'1"	23'0"	179	N	N	
Communication	24'1"	22'0"		N	N	
Communication	23'0"	21'0"		N	N	
Communication	22'0"	20'0"	20'0"	N	N	
Primary	40'6"			Y	N	B:Residential/Over Driveways
OH Guy	39'9"			Y	N	
Primary	37'1"			Y	N	
OH Guy	36'3"			Y	N	
Transformer	30'6"			Y	N	
Neutral	30'2"			Y	N	
Secondary Riser	28'9"	29'5"		Y	N	
Communication		26'1"		Y	N	
Communication	24'1"		167	Y	N	
Communication	23'4"			Y	N	
Communication	22'9"			Y	N	
Communication	21'10"		19'1"	Y	N	
Primary	39'8"			N	N	D: Pedestrian Only 9.5'
Transformer	33'9"			N	N	
Secondary	32'4"			N	N	
Secondary Riser	31'1"			N	N	
Communication		26'6"		N	N	
Communication	24'6"		161	N	N	
Communication	23'5"			N	N	
Communication	22'0"			N	N	
Communication	20'10"		19'8"	N	N	
Primary	39'4"			N	N	D: Pedestrian Only 9.5'
Communication		25'11"		N	N	
Communication	23'11"		138	N	N	
Communication	22'11"			N	N	
Communication	21'10"			N	N	
Communication	20'8"		19'5"	N	N	
Primary	40'6"			N	N	D: Pedestrian Only 9.5'
Primary	40'4"			N	N	
Primary	37'5"			N	N	
Neutral	32'2"			N	N	
Communication		27'1"		N	N	
Communication	25'1"		132	N	N	
Communication	24'0"			N	N	
Communication	22'8"			N	N	
Communication	21'6"		21'7"	N	N	
Primary	39'1"			N	N	B:Residential/Over Driveways



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

PROPOSAL #: LX-FR02-04W
Submit in Duplicate

Name of Firm Applying: CMN-RUS, INC Contact Name, Phone #: LAUREN SANDEFUR 812-213-1328
 EMAIL ADDRESS: LAUREN.SANDEFUR@METRONETINC.COM
 Street Address, City, ST, ZIP of Firm Applying: 3701 Communications Way, Evansville, IN 47715 Authorized Signature & Date: *LSanDEFUR 2/18/18*

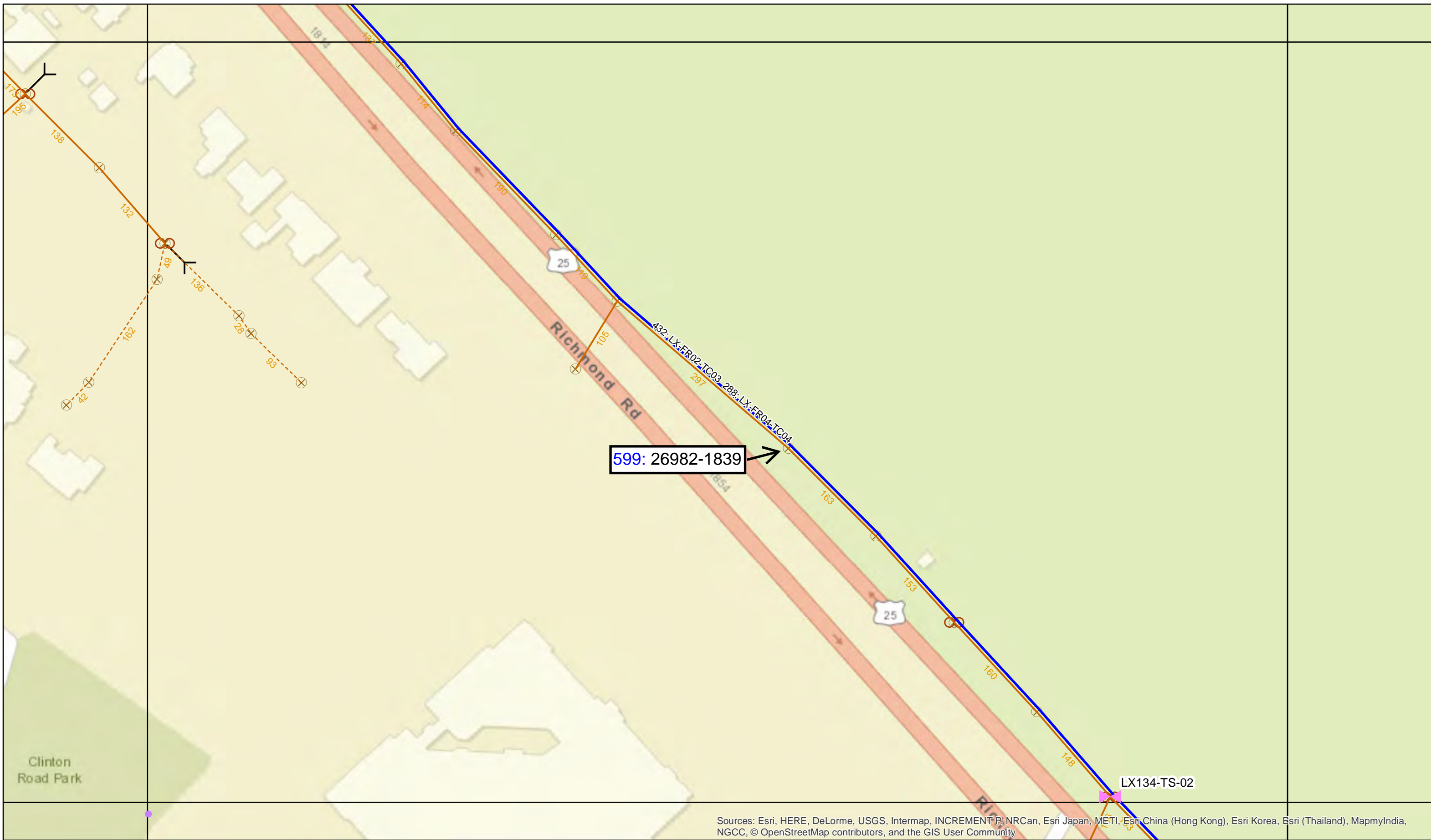
By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
 If we choose to proceed all **ESTIMATED** fees, including engineering & makeready **MUST BE PAID IN FULL UP FRONT.**
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD
NOTE: Final costs will be determined by actual time & material required to do the make-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachmts on pole	# & type of Attachmts	Height Licensee to attach at	Licenser Work Description	Bill for Rent Y or N
1	26982-3000	526W	3010 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	25'3"	N/A	35'5"	(1)Fiber/Strand			
2	26982-2990	527W	2990 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'8"	N/A	28'7"	(1)Fiber/Strand			
3	26982-2980	528W	2940 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'7"	N/A	33'3"	(1)Fiber/Strand			
4	26982-2950	529W	2940 RICHMOND RD, Lexington, KY 40509	55, 2, WXM	23'0"	N/A	28'6"	(1)Fiber/Strand			
5	26982-2900	530W	2940 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'9"	N/A	28'9"	(1)Fiber/Strand			
6	NT	531W	2890 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'0"	24'9"	31'1"	(1)Fiber/Strand			
7	26982-2820	532W	2890 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	21'10"	N/A	39'4"	(1)Fiber/Strand			
8	26982-2800	533W	2850 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'8"	N/A	32'2"	(1)Fiber/Strand			
9	26982-2780	536W	2800 RICHMOND RD, Lexington, KY 40509	50, 2, WXM	22'8"	N/A	31'10"	(1)Fiber/Strand			
10	26982-1839	599W	1832 RICHMOND RD, Lexington, KY 40509	45, 3, WXM	26'5"	N/A	31'7"	(1)Fiber/Strand			
11											
ESTIMATED TOTAL COSTS											

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____



599: 26982-1839

LX134-TS-02

Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAW32
 PROJECT NUMBER:
 LXTN KY.00497.CB
 DATE: 1/16/2018
 USER NAME: arqjis
 DESIGN ENG

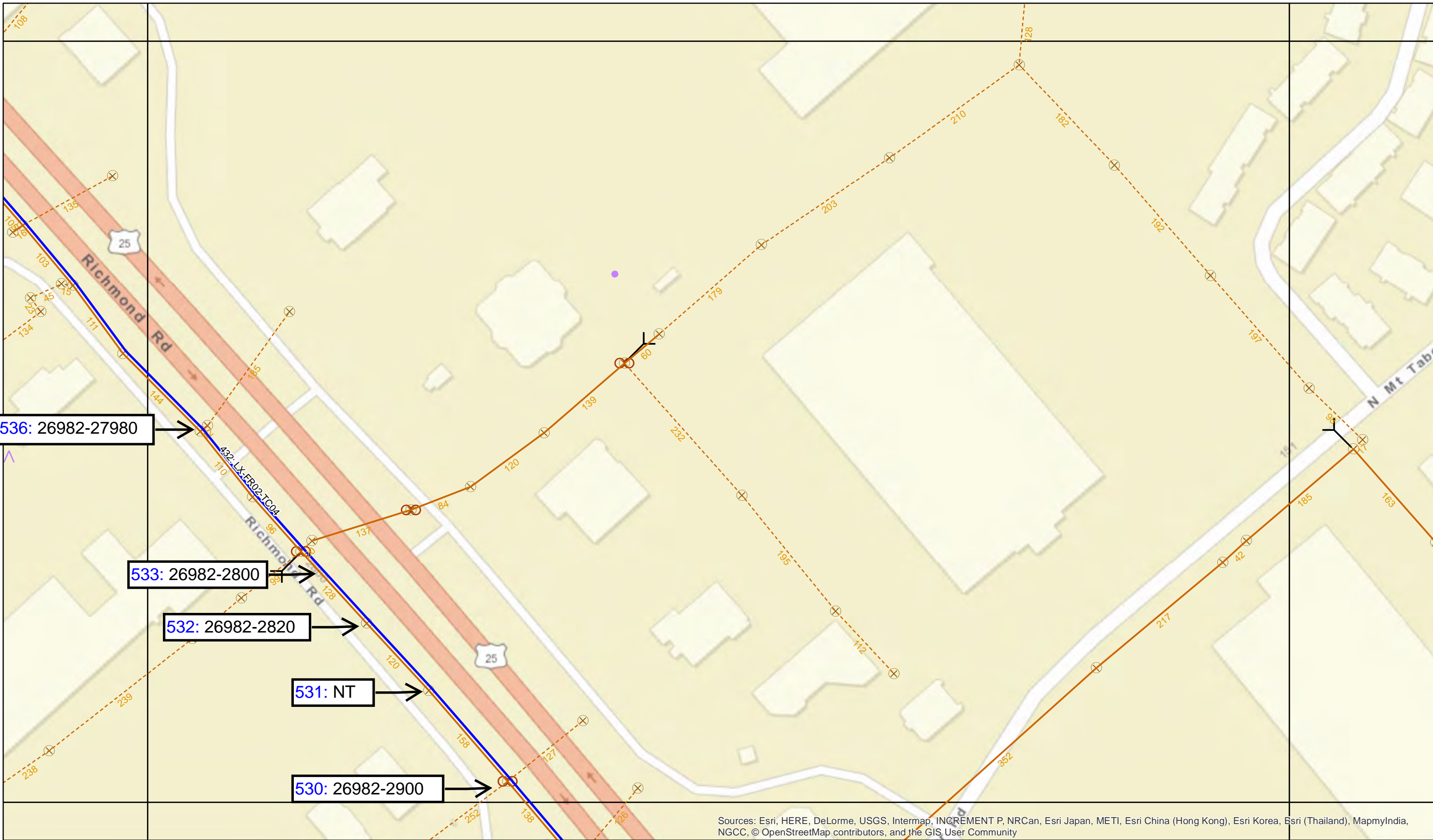
STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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METRONET
 3701 Communications Way
 Evansville, In 47715





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAQ36
 PROJECT NUMBER:
 LTXNKY00497.CB
 DATE: 1/16/2018
 USER NAME: arcgis
 DESIGN ENG

STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community

LXAP36
 PROJECT NUMBER:
 LXTNXY00497.CB

STAKING GRID DRAWING
 ROUTE: LX-FR02 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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 3701 Communications Way
 Evansville, In 47715



1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIRED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

SYMBOL DESIGNATION LEGEND

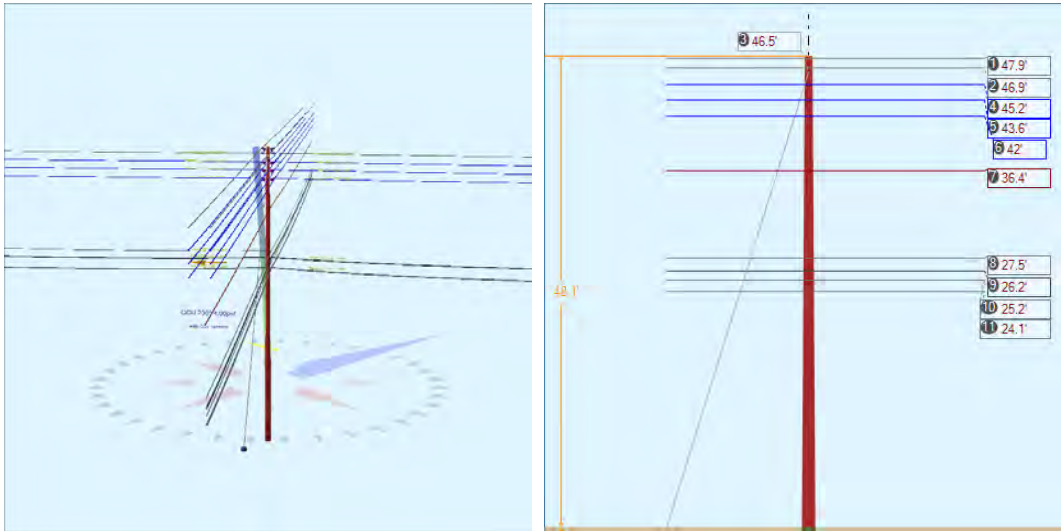
FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPUCE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPUCE BL00-X	STEEL POLE
PHYSICAL SPUCE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

MISCELLANEOUS	
ROADNAME	ROADS WORK POINTS
RAILROADS	

STRAND AND TRENCH	
Footage AERIAL (TENSION SPAN)	Footage AERIAL (SLACK SPAN)
Footage NEW / PROPOSED TRENCH	Footage EXISTING INHERITED TRENCH

Pole Num:	526W - 26982-3000	Pole Length / Class:	60 / 2	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	11.89	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	42.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.005383 Deg	Longitude:	-84.450562 Deg	Elevation:	924.141112602881		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	41.2	0.0
Groundline	41.2	0.0
Vertical	4.8	33.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	56,758	233.3
Groundline	56,758	233.3
GL Allowable	140,858	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	39.2	141.0		3.1	230.0	8.0	320.0
? EHS 3/8 (Down)			46.5	4.5	230.0	12.7	320.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 233.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	284	14.3	12,035	21.2	8.5	582	2,172	15	597	8.8
Comms	1,373	69.1	36,423	64.2	25.9	1,762	1,529	10	1,772	26.1
GuyBraces	-1	0.0	-40	-0.1	0.0	-2	734	5	3	0.0
Pole	302	15.2	7,082	12.5	5.0	343	3,565	24	367	5.4
Insulators	29	1.4	1,258	2.2	0.9	61	994	7	68	1.0
Pole Load	1,987	100.0	56,758	100.0	40.3	2,745	8,994	62	2,807	41.3
Pole Reserve Capacity			84,100		59.7	4,055			3,993	58.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 233.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	312	15.7	13,259	23.4	9.4	641	3,833	26	668	9.8
Unknown, COMMUNICATION	1,373	69.1	36,417	64.2	25.9	1,761	1,596	11	1,772	26.1
Pole	302	15.2	7,082	12.5	5.0	343	3,565	24	367	5.4
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,987	100.0	56,758	100.0	40.3	2,745	8,994	62	2,807	41.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.87	15.14	0.3980	0.18	0.145	98.8	139.6	98.8	2,128	-8,641	-41	1,235 -7,447
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.87	15.14	0.3980	0.42	0.145	150.7	320.1	150.7	2,128	7,488	-63	1,887 9,312
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.86	15.14	0.3980	0.18	0.145	98.8	139.6	98.8	2,128	-8,641	41	1,235 -7,365
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	47.86	15.14	0.3980	0.42	0.145	150.7	320.1	150.7	2,128	7,488	63	1,886 9,437
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	46.90	16.80	0.3980	0.44	0.145	179.1	50.8	179.1	2,128	-129,603	-20	-1 -129,624
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	46.90	16.80	0.3980	0.30	0.145	146.0	231.8	146.0	2,128	129,683	16	-2 129,698
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.21	15.30	0.7200	0.18	0.462	98.8	139.6	98.8	6,210	-23,817	91	1,586 -22,140

Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.21	15.30	0.7200	0.35	0.462	146.0	231.8	146.0	6,210	364,832	135	-2	364,964
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.21	15.30	0.7200	0.41	0.462	150.7	320.1	150.7	6,210	20,638	139	2,421	23,198
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.20	15.30	0.7200	0.52	0.462	179.1	50.8	179.1	6,210	-364,578	-165	-2	-364,745
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.20	15.30	0.7200	0.18	0.462	98.8	139.6	98.8	6,210	-23,815	-91	1,586	-22,320
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	45.20	15.30	0.7200	0.41	0.462	150.7	320.1	150.7	6,210	20,636	-139	2,420	22,918
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.62	15.39	0.7200	0.52	0.462	179.1	50.8	179.1	6,210	-351,835	-166	-2	-352,003
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.62	15.39	0.7200	0.18	0.462	98.8	139.6	98.8	6,210	-22,983	-92	1,530	-21,544
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.62	15.39	0.7200	0.41	0.462	150.7	320.1	150.7	6,210	19,915	-140	2,336	22,111
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.62	15.39	0.7200	0.18	0.462	98.8	139.6	98.8	6,210	-22,983	92	1,530	-21,360
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.62	15.39	0.7200	0.35	0.462	146.0	231.8	146.0	6,210	352,054	136	-2	352,188
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	43.62	15.39	0.7200	0.41	0.462	150.7	320.1	150.7	6,210	19,915	140	2,336	22,391
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.96	15.49	0.7200	0.52	0.462	179.1	50.8	179.1	6,210	-338,393	-167	-2	-338,562
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.96	15.49	0.7200	0.18	0.462	98.8	139.6	98.8	6,210	-22,105	-92	1,472	-20,725
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.96	15.49	0.7200	0.41	0.462	150.7	320.1	150.7	6,210	19,154	-141	2,247	21,260
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.96	15.49	0.7200	0.18	0.462	98.8	139.6	98.8	6,210	-22,105	92	1,472	-20,540
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.96	15.49	0.7200	0.35	0.462	146.0	231.8	146.0	6,210	338,604	136	-2	338,738
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.96	15.49	0.7200	0.41	0.462	150.7	320.1	150.7	6,210	19,154	141	2,247	21,542
Secondary	TRIPLEX 4 AWG	KU, UTILITY	36.39	7.17	0.6800	1.05	0.164	98.8	139.6	98.8	916	-2,828	-25	1,234	-1,619
Secondary	TRIPLEX 4 AWG	KU, UTILITY	36.39	7.17	0.6800	1.71	0.164	150.7	320.1	150.7	916	2,450	-39	1,884	4,296
											Totals:	-20,314	-160	32,531	12,057

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	27.50	7.69	0.6570	1.29	0.190	98.8	139.6	98.8	750	-1,750	-28	914	-864
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	27.50	7.69	0.6570	2.14	0.190	150.7	320.1	150.7	750	1,516	-43	1,396	2,869
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657) COMMUNICATION	Unknown,	27.50	7.69	0.6570	1.96	0.190	146.0	231.8	146.0	750	26,800	42	-1	26,840

CATV	CATV 1.0	Unknown, COMMUNICATION	26.16	7.77	1.3300	2.66	0.337	179.1	50.8	179.1	925	-31,424	-91	-2	-31,517
CATV	CATV 1.0	Unknown, COMMUNICATION	26.16	7.77	1.3300	1.30	0.337	98.8	139.6	98.8	925	-2,053	-50	1,376	-727
CATV	CATV 1.0	Unknown, COMMUNICATION	26.16	7.77	1.3300	2.16	0.337	150.7	320.1	150.7	925	1,779	-77	2,101	3,803
CATV	CATV 1.0	Unknown, COMMUNICATION	26.16	7.77	1.3300	2.05	0.337	146.0	231.8	146.0	925	31,444	74	-2	31,517
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	25.24	7.83	0.6570	1.29	0.190	98.8	139.6	98.8	750	-1,606	-29	839	-795
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	25.24	7.83	0.6570	2.14	0.190	150.7	320.1	150.7	750	1,391	-44	1,281	2,629
Telco	TELE 1.5	Unknown, COMMUNICATION	24.08	7.90	1.5000	3.17	0.900	179.1	50.8	179.2	2,000	-62,557	-161	-2	-62,720
Telco	TELE 1.5	Unknown, COMMUNICATION	24.08	7.90	1.5000	1.51	0.900	98.8	139.6	98.8	2,000	-4,086	-89	1,384	-2,791
Telco	TELE 1.5	Unknown, COMMUNICATION	24.08	7.90	1.5000	2.54	0.900	150.7	320.1	150.8	2,000	3,541	-136	2,114	5,519
Telco	TELE 1.5	Unknown, COMMUNICATION	24.08	7.90	1.5000	2.42	0.900	146.0	231.8	146.0	2,000	62,596	132	-2	62,726
Totals:											25,591	-501	11,399	36,489	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Davit	Insulator, 15 kV	KU, UTILITY	47.49	0.00	50.1	410.1	60.00	5.00	12.00	-144	138	-5
Davit	Insulator, 15 kV	KU, UTILITY	47.49	0.00	230.1	140.1	60.00	5.00	12.00	144	138	282
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	46.90	0.00	50.8	50.8	3.00	3.80	12.75	-8	110	102
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	46.90	0.00	231.8	231.8	3.00	3.80	12.75	8	110	118
Davit	Insulator, 15 kV	KU, UTILITY	44.83	0.00	230.1	140.1	60.00	5.00	12.00	145	131	276
Davit	Insulator, 15 kV	KU, UTILITY	44.83	0.00	50.1	140.1	60.00	5.00	12.00	-145	131	-15
Davit	Insulator, 15 kV	KU, UTILITY	43.25	0.00	50.1	140.1	60.00	5.00	12.00	-146	126	-20
Davit	Insulator, 15 kV	KU, UTILITY	43.25	0.00	230.1	140.1	60.00	5.00	12.00	146	126	272
Davit	Insulator, 15 kV	KU, UTILITY	41.58	0.00	50.1	140.1	60.00	5.00	12.00	-147	121	-26

Davit	Insulator, 15 kV	KU, UTILITY	41.58	0.00	230.1	140.1	60.00	5.00	12.00	147	121	268
Spool	Spool Insulator - 25 kV	KU, UTILITY	36.39	0.00	49.8	319.9	2.00	3.00	3.19	-2	17	15
Bolt	Three Bolt	Unknown, COMMUNICATION	27.50	0.00	49.8	319.9	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	27.50	0.00	231.8	321.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	26.16	0.00	49.8	319.9	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	26.16	0.00	231.3	321.3	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	25.24	0.00	49.8	319.9	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.08	0.00	49.8	319.9	5.00	3.00	0.00	-6	0	-6
Bolt	Single Bolt	Unknown, COMMUNICATION	24.08	0.00	231.3	321.3	5.00	3.00	0.00	6	0	6
Totals:										-8	1,269	1,261

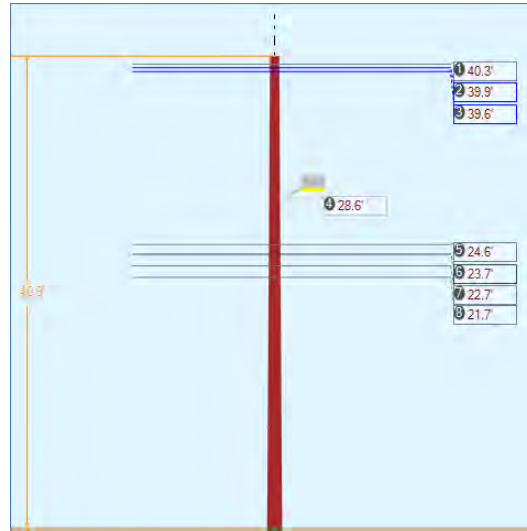
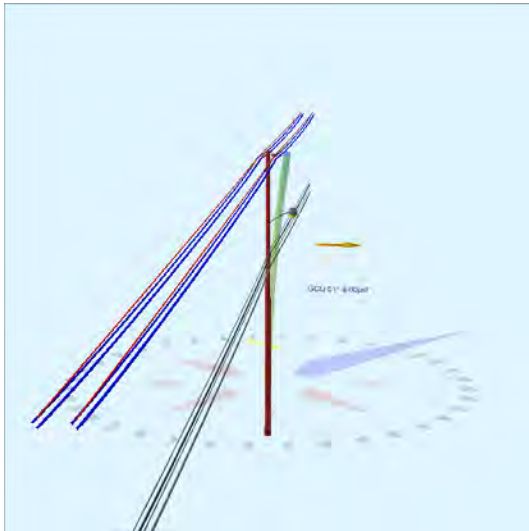
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Down	KU, UTILITY	46.52	0.00	39.24	0.375	75.00	141.0	49.7	0.273	59.14	0.23

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8 Down	2.30e+7	15,400	0.90	13,860	700	1,759	1,599	621	474	402	-16	-40	
Totals:										474	402	-16	-40

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	39.24	141.0	20,000	1.00	20,000	1,599	621	8.0

Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	33.36	34.33	12.28	16.50	7.96	13.64	1.60e+6	60.00	57.00	48.11	186,944	1873.81	20.83

Pole Num:	527W - 26982-2990	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	9.06	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	40.82	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.005700 Deg	Longitude:	-84.450923 Deg	Elevation:	922.065293809577		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	55.7	0.0
Groundline	55.7	0.0
Vertical	22.9	28.9

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	67,105	50.4
Groundline	67,105	50.4
GL Allowable	122,027	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 50.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,227	61.6	49,164	73.3	40.3	2,730	2,308	17	2,747	40.4
Comms	489	24.6	11,766	17.5	9.6	653	729	5	659	9.7
Pole	250	12.6	5,127	7.6	4.2	285	2,847	21	306	4.5
Streetlights	20	1.0	810	1.2	0.7	45	86	1	46	0.7
Insulators	5	0.3	239	0.4	0.2	13	80	1	14	0.2
Pole Load	1,992	100.0	67,105	100.0	55.0	3,726	6,049	46	3,771	55.5
Pole Reserve Capacity			54,922		45.0	3,074			3,029	44.5

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 50.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,233	61.9	49,378	73.6	40.5	2,741	2,349	18	2,759	40.6
Unknown, COMMUNICATION	489	24.6	11,790	17.6	9.7	655	767	6	660	9.7
Pole	250	12.6	5,127	7.6	4.2	285	2,847	21	306	4.5
KU, UTILITY	20	1.0	810	1.2	0.7	45	86	1	46	0.7
Totals:	1,992	100.0	67,105	100.0	55.0	3,726	6,049	46	3,771	55.5

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.25	15.52	0.5630	0.29	0.291	150.7	140.1	150.7	5,010	946	26	1,880	2,852
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.25	15.52	0.5630	0.10	0.291	87.9	320.9	87.9	5,010	1,870	15	1,097	2,982
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	11.52	1.1080	1.87	1.093	150.7	140.1	150.7	3,200	599	73	2,821	3,493
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	19.52	1.1080	1.87	1.093	150.7	140.1	150.7	3,200	599	73	2,821	3,493
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	11.52	1.1080	0.94	1.093	87.9	320.9	87.9	3,200	1,184	42	1,645	2,872
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	19.52	1.1080	0.94	1.093	87.9	320.9	87.9	3,200	1,184	42	1,645	2,872
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.58	15.52	1.1080	1.87	1.093	150.7	140.1	150.7	3,200	594	73	2,797	3,465

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.58	15.52	1.1080	0.94	1.093	87.9	320.9	87.9	3,200	1,174	43	1,632	2,849
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.25	15.52	0.5630	0.29	0.291	150.7	140.1	150.7	5,010	946	-26	1,880	2,800
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.25	15.52	0.5630	0.10	0.291	87.9	320.9	87.9	5,010	1,870	-15	1,097	2,951
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	11.52	1.1080	1.87	1.093	150.7	140.1	150.7	3,200	599	-73	2,821	3,347
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	19.52	1.1080	1.87	1.093	150.7	140.1	150.7	3,200	599	-73	2,821	3,347
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	11.52	1.1080	0.94	1.093	87.9	320.9	87.9	3,200	1,184	-42	1,645	2,787
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.92	19.52	1.1080	0.94	1.093	87.9	320.9	87.9	3,200	1,184	-42	1,645	2,787
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.58	15.52	1.1080	1.87	1.093	150.7	140.1	150.7	3,200	594	-73	2,797	3,318
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.58	15.52	1.1080	0.94	1.093	87.9	320.9	87.9	3,200	1,174	-43	1,632	2,764
Totals:											16,302	0	32,679	48,981	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.56	7.49	0.6570	2.14	0.190	150.7	140.1	150.7	750	86	42	1,249	1,378
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.56	7.49	0.6570	1.13	0.190	87.9	320.9	87.9	750	171	25	729	924
CATV	CATV 1.0	Unknown,	23.73	7.54	1.3300	2.16	0.337	150.7	140.1	150.8	925	103	74	1,909	2,087
CATV	CATV 1.0	Unknown,	23.73	7.54	1.3300	1.14	0.337	87.9	320.9	87.9	925	204	43	1,114	1,361
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.72	7.60	0.6570	2.14	0.190	150.7	140.1	150.7	750	80	43	1,156	1,278
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.72	7.60	0.6570	1.13	0.190	87.9	320.9	87.9	750	158	25	674	857
Telco	TELE 1.5	Unknown,	21.71	7.66	1.5000	2.54	0.900	150.7	140.1	150.8	2,000	204	132	1,909	2,244
Telco	TELE 1.5	Unknown,	21.71	7.66	1.5000	1.32	0.900	87.9	320.9	87.9	2,000	403	77	1,114	1,593
Totals:											1,408	461	9,853	11,723	

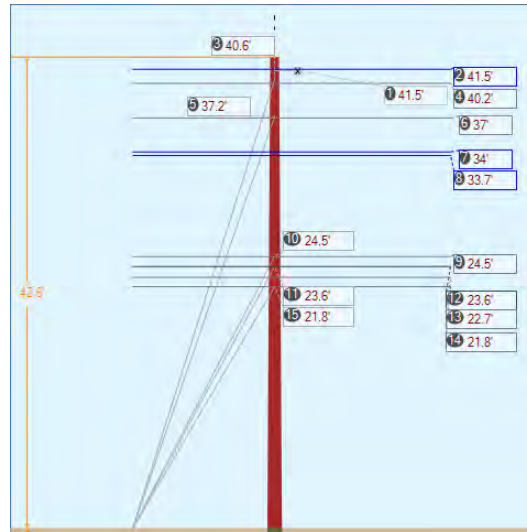
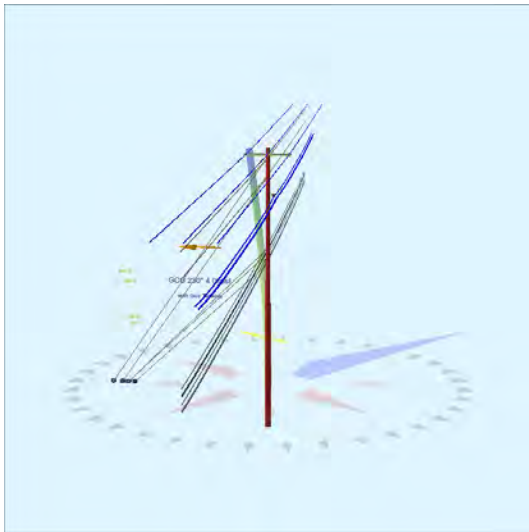
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 3 ft. Arm	KU, UTILITY	28.58	4.74	45.0	45.0	45.00	24.00	20.00	3.00	36.00	240	567	807	
												Totals:	240	567	807

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	40.25	0.00	45.0	45.0	11.00	4.75	11.50	27	107	134	
Suspension	Suspension 11.50"	Power, UTILITY	40.25	0.00	235.0	235.0	11.00	4.75	11.50	-27	107	80	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.56	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.73	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.72	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.71	0.00	50.5	320.5	5.00	3.00	0.00	6	0	6	
										Totals:	24	214	238

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	28.89	34.10	11.78	21.28	7.96	13.00	1.60e+6	60.00	57.00	40.94	26,394	264.17	4.37

Pole Num:	528W - 26982-2980 & 1870504	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	7.44	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.45	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.005877 Deg	Longitude:	-84.451108 Deg	Elevation:	921.001213023917		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	54.5	0.0
Groundline	54.5	0.0
Vertical	1.8	26.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	68,904	230.1
Groundline	68,904	230.1
GL Allowable	127,736	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor ? EHS 3/8 (Down)	28.2	232.0	40.6	0.0	230.0	0.0	0.0
? Single Helix Anchor ? EHS 3/8 (Down)	26.5	232.0	37.2	0.0	230.0	0.0	0.0
? Single Helix Anchor ? EHS 1/4 (Down)	25.4	232.0	24.5	0.0	230.0	0.8	50.0
? Single Helix Anchor ? EHS 1/4 (Down)			23.7	0.0	230.0	1.2	50.0
? Single Helix Anchor ? EHS 1/4 (Down)	24.2	232.0	21.8	0.0	230.0	0.6	50.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 230.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,352	64.2	51,310	74.5	40.2	2,736	1,468	11	2,746	40.4
Comms	468	22.2	11,146	16.2	8.7	594	627	5	599	8.8
GuyBraces	6	0.3	164	0.2	0.1	9	48	0	9	0.1
Pole	263	12.5	5,520	8.0	4.3	294	3,020	22	316	4.7
Crossarms	1	0.1	51	0.1	0.0	3	95	1	3	0.1
Insulators	18	0.8	713	1.0	0.6	38	101	1	39	0.6
Pole Load	2,107	100.0	68,904	100.0	53.9	3,674	5,359	39	3,713	54.6
Pole Reserve Capacity			58,832		46.1	3,126			3,087	45.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 230.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	863	41.0	35,215	51.1	27.6	1,878	653	5	1,882	27.7
Power, UTILITY	509	24.2	16,870	24.5	13.2	900	907	7	906	13.3
Unknown, COMMUNICATION	471	22.4	11,247	16.3	8.8	600	684	5	605	8.9
Pole	263	12.5	5,520	8.0	4.3	294	3,020	22	316	4.7
<Undefined>	1	0.1	51	0.1	0.0	3	95	1	3	0.1
Totals:	2,107	100.0	68,904	100.0	53.9	3,674	5,359	39	3,713	54.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.45	18.55	0.7200	0.14	0.462	87.9	140.9	87.9	6,210	4,470	0	1,297	5,767
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.45	48.77	0.7200	0.14	0.462	87.9	140.9	87.9	6,210	4,470	20	1,297	5,787
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.45	48.57	0.7200	0.14	0.462	87.9	140.9	87.9	6,210	4,470	-20	1,297	5,747
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.45	6.95	0.7200	0.25	0.462	117.3	319.9	117.3	6,210	1,370	0	1,730	3,100
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.45	45.64	0.7200	0.25	0.462	117.3	319.9	117.3	6,210	1,370	28	1,730	3,128
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.45	45.43	0.7200	0.25	0.462	117.3	319.9	117.3	6,210	1,370	-28	1,730	3,071
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.20	6.62	0.3980	0.15	0.145	87.9	140.9	87.9	2,128	1,486	16	926	2,427
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.20	6.62	0.3980	0.26	0.145	117.3	319.9	117.3	2,128	455	21	1,235	1,711
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.05	6.82	0.3980	0.15	0.145	87.9	140.9	87.9	2,128	1,369	16	853	2,238
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.05	6.82	0.3980	0.26	0.145	117.3	319.9	117.3	2,128	420	22	1,138	1,579
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.00	11.99	1.1080	0.94	1.093	87.9	140.9	87.9	3,200	1,889	-47	1,401	3,243
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.00	19.99	1.1080	0.94	1.093	87.9	140.9	87.9	3,200	1,889	-47	1,401	3,243
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.00	11.99	1.1080	1.34	1.093	117.3	319.9	117.3	3,200	579	-63	1,870	2,386
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	34.00	19.99	1.1080	1.34	1.093	117.3	319.9	117.3	3,200	579	-63	1,870	2,386
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.67	15.99	1.1080	0.94	1.093	87.9	140.9	87.9	3,200	1,871	-48	1,388	3,211

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	33.67	15.99	1.1080	1.34	1.093	117.3	319.9	117.3	3,200	573	-63	1,852	2,362
											Totals:	28,632	-256	23,013	51,389

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.54	7.59	0.6570	1.13	0.190	87.9	140.9	87.9	750	320	25	728	1,073
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.54	7.59	0.6570	1.58	0.190	117.3	319.9	117.3	750	98	33	971	1,102
CATV	CATV 1.0	Unknown,	23.65	7.64	1.3300	1.14	0.337	87.9	140.9	87.9	925	380	44	1,110	1,534
CATV	CATV 1.0	Unknown,	23.65	7.64	1.3300	1.59	0.337	117.3	319.9	117.3	925	116	59	1,480	1,655
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.67	7.70	0.6570	1.13	0.190	87.9	140.9	87.9	750	295	25	672	993
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.67	7.70	0.6570	1.58	0.190	117.3	319.9	117.3	750	90	34	897	1,021
Telco	TELE 1.5	Unknown,	21.83	7.75	1.5000	1.32	0.900	87.9	140.9	87.9	2,000	758	78	1,119	1,955
Telco	TELE 1.5	Unknown,	21.83	7.75	1.5000	1.85	0.900	117.3	319.9	117.3	2,000	232	104	1,493	1,829
											Totals:	2,290	402	8,471	11,163

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	41.45	5.80	140.4	140.4	50.00	4.50	3.50	96.00	0	51	51	
										Totals:	0	51	51

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Deadend	Deadend Insulator - 15 kV KU, UTILITY	41.45	0.00	140.4	0.5	3.00	3.80	12.75	0	98	98
Deadend	Deadend Insulator - 15 kV KU, UTILITY	41.45	45.00	223.0	0.5	3.00	3.80	12.75	21	98	119
Deadend	Deadend Insulator - 15 kV KU, UTILITY	41.45	-45.00	57.7	0.5	3.00	3.80	12.75	-21	98	76
Deadend	Deadend Insulator - 15 kV KU, UTILITY	41.45	0.00	140.4	179.5	3.00	3.80	12.75	0	98	98

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.45	45.00	223.0	179.5	3.00	3.80	12.75	21	98	119
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	41.45	-45.00	57.7	179.5	3.00	3.80	12.75	-21	98	76
Spool	Spool Insulator - 25 kV	KU, UTILITY	40.20	0.00	230.4	140.4	2.00	3.00	3.19	2	19	21
Spool	Spool 3"	KU, UTILITY	37.05	0.00	230.4	230.4	2.00	3.00	3.19	2	17	19
Suspension	Suspension 11.50"	Power, UTILITY	34.33	0.00	45.0	45.0	11.00	4.75	11.50	-28	91	63
Bolt	Three Bolt	Unknown, COMMUNICATION	24.54	0.00	230.4	140.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.65	0.00	230.4	140.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.67	0.00	230.4	140.4	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.83	0.00	230.4	140.4	5.00	3.00	0.00	6	0	6
Totals:										1	713	714

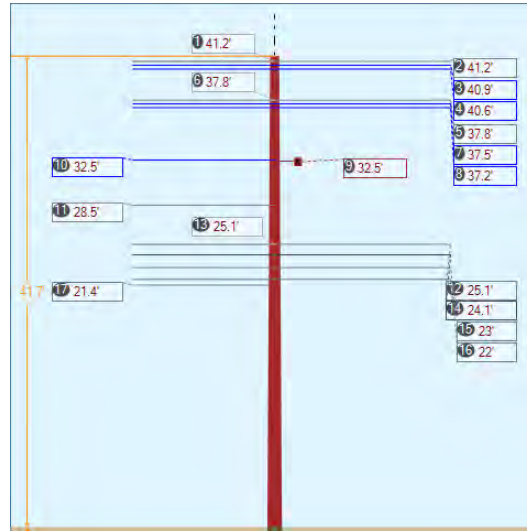
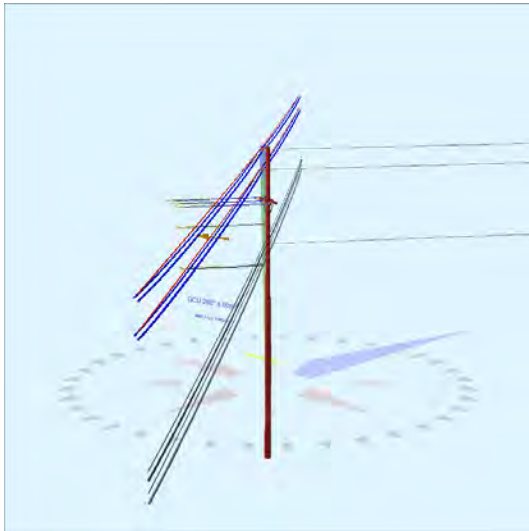
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	40.56	0.00	28.16	0.375	75.00	232.0	55.0	0.273	47.68	0.00
EHS 3/8	Down	KU, UTILITY	37.18	0.00	26.50	0.375	75.00	232.0	54.3	0.273	43.95	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	24.54	0.00	25.41	0.25	75.00	232.0	43.9	0.121	33.52	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	23.65	0.00	25.41	0.25	75.00	232.0	42.8	0.121	32.90	0.00
EHS 1/4	Down	Unknown, COMMUNICATION	21.83	0.00	24.22	0.25	75.00	232.0	41.9	0.121	30.78	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	45
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	0	0	0	0	0	0	41
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	72	66	0	0	0	0	27
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	94	86	0	0	0	0	26
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	134	122	0	0	0	0	24
Totals:										0	0	0	164

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	28.16	232.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	26.50	232.0	20,000	1.00	20,000	0	0	0.0
Single Helix Anchor		18.00	25.41	232.0	20,000	1.00	20,000	151	0	0.8
Single Helix Anchor		18.00	24.22	232.0	20,000	1.00	20,000	122	0	0.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	25.95	33.63	12.12	11.44	7.96	13.20	1.60e+6	60.00	57.00	42.57	293,154	2977.24	55.56

Pole Num:	529W - 26982-2950	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	13.26	Construction Grade:	B	Pole Strength Factor:	0.65
Aux Data 3	Unset	G/L Circumference (in):	40.76	Loading District:	Medium	Transverse Wind LF:	2.50
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.65
Aux Data 5	Unset	Allowable Stress (psi):	5,200	Wind Speed (mph):	39.53	Vertical LF:	1.50
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.006104 Deg	Longitude:	-84.451333 Deg	Elevation:	924.232261078202		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	260.0
Groundline	0.0	260.0
Vertical	29.0	213.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	33,174	291.7
Groundline	33,174	291.7
GL Allowable	92,895	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	126.8	33.0		17.1	260.0	18.6	230.0
? EHS 3/8 (Span/Head)			41.3	7.7	260.0	13.8	230.0
? EHS 3/8 (Span/Head)			37.8	8.8	260.0	15.8	230.0
? EHS 3/8 (Span/Head)			25.1	8.2	260.0	14.8	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 291.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	973	89.3	37,270	112.4	40.1	2,079	1,911	14	2,094	40.3
Comms	350	32.2	8,297	25.0	8.9	463	615	5	467	9.0
GuyBraces	-571	-52.4	-19,852	-59.8	-21.4	-1,108	89	1	-1,107	-21.3
Pole	310	28.4	6,468	19.5	7.0	361	2,287	17	378	7.3
Crossarms	12	1.1	405	1.2	0.4	23	150	1	24	0.5
Insulators	16	1.4	586	1.8	0.6	33	87	1	33	0.6
Pole Load	1,089	100.0	33,174	100.0	35.7	1,851	5,139	39	1,890	36.3
Pole Reserve Capacity			59,721		64.3	3,349			3,310	63.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 291.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	810	74.4	32,207	97.1	34.7	1,797	1,933	15	1,811	34.8
KU, UTILITY	-203	-18.6	-9,425	-28.4	-10.2	-526	87	1	-525	-10.1
Unknown, COMMUNICATION	160	14.7	3,520	10.6	3.8	196	682	5	202	3.9
Pole	310	28.4	6,468	19.5	7.0	361	2,287	17	378	7.3
<Undefined>	12	1.1	405	1.2	0.4	23	150	1	24	0.5
Totals:	1,089	100.0	33,174	100.0	35.7	1,851	5,139	39	1,890	36.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.25	15.51	0.5630	0.17	0.291	117.3	139.9	117.3	5,010	-300,540	8	876	-299,657
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.25	15.51	0.5630	0.21	0.291	131.5	319.1	131.5	5,010	302,760	8	948	303,717
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	11.51	1.1080	1.34	1.093	117.3	139.9	117.3	3,200	-190,410	21	1,314	-189,075
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	19.51	1.1080	1.34	1.093	117.3	139.9	117.3	3,200	-190,410	21	1,314	-189,075
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	11.51	1.1080	1.55	1.093	131.5	319.1	131.5	3,200	191,817	24	1,423	193,264

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.92	19.51	1.1080	1.55	1.093	131.5	319.1	131.5	3,200	191,817	24	1,423	193,264
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.58	15.51	1.1080	1.34	1.093	117.3	139.9	117.3	3,200	-188,859	21	1,304	-187,534
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.58	15.51	1.1080	1.55	1.093	131.5	319.1	131.5	3,200	190,254	24	1,412	191,690
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.83	15.71	0.5630	0.17	0.291	117.3	139.9	117.3	5,010	-275,647	8	803	-274,835
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	37.83	15.71	0.5630	0.21	0.291	131.5	319.1	131.5	5,010	277,683	9	870	278,562
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.50	11.71	1.1080	1.34	1.093	117.3	139.9	117.3	3,200	-174,511	22	1,205	-173,284
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.50	19.71	1.1080	1.34	1.093	117.3	139.9	117.3	3,200	-174,511	22	1,205	-173,284
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.50	11.71	1.1080	1.55	1.093	131.5	319.1	131.5	3,200	175,800	25	1,304	177,129
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.50	19.71	1.1080	1.55	1.093	131.5	319.1	131.5	3,200	175,800	25	1,304	177,129
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	15.71	1.1080	1.34	1.093	117.3	139.9	117.3	3,200	-172,959	22	1,194	-171,743
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	37.17	15.71	1.1080	1.55	1.093	131.5	319.1	131.5	3,200	174,237	25	1,293	175,555
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.53	19.03	0.3250	0.07	0.107	13.7	210.7	13.7	150	1,258	0	114	1,373
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.53	48.86	0.3250	0.07	0.107	13.7	210.7	13.7	150	1,258	1	114	1,374
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	32.53	48.86	0.3250	0.07	0.107	13.7	210.7	13.7	150	1,258	-1	114	1,372
Neutral	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	28.52	7.27	0.3250	0.07	0.107	13.7	210.7	13.7	150	1,103	0	100	1,204
											Totals:	17,198	311	19,635	37,144

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.07	7.48	0.6570	1.55	0.190	117.3	139.9	117.3	750	-27,345	12	579	-26,753
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.07	7.48	0.6570	1.78	0.190	131.5	319.1	131.5	750	27,547	14	627	28,187
CATV	CATV 1.0	Unknown,	24.14	7.54	1.3300	1.58	0.337	117.3	139.9	117.3	925	-32,478	21	882	-31,575
CATV	CATV 1.0	Unknown,	24.14	7.54	1.3300	1.82	0.337	131.5	319.1	131.5	925	32,718	24	955	33,698
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.01	7.60	0.6570	1.55	0.190	117.3	139.9	117.3	750	-25,100	12	532	-24,556

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.01	7.60	0.6570	1.78	0.190	131.5	319.1	131.5	750	25,286	14	576	25,875
Telco	TELE 1.5	Unknown, COMMUNICATION	21.96	7.67	1.5000	1.85	0.900	117.3	139.9	117.3	2,000	-63,868	38	877	-62,954
Telco	TELE 1.5	Unknown, COMMUNICATION	21.96	7.67	1.5000	2.13	0.900	131.5	319.1	131.5	2,000	64,340	42	950	65,332
Telco	TELE 1.5	Unknown, COMMUNICATION	21.45	7.70	1.5000	0.18	0.900	13.7	210.7	13.7	150	830	1	183	1,014
Totals:											1,929	178	6,161	8,268	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal Crossarm		32.53	6.28	210.7	210.7	50.00	4.50	3.50	96.00	0	404	404	
Totals:											0	404	404

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	41.25	0.00	230.0	230.0	11.00	4.75	11.50	10	133	143	
Suspension	Suspension 11.50"	37.83	0.00	230.0	230.0	11.00	4.75	11.50	10	122	132	
Deadend	Deadend Insulator - 15 kV	32.53	0.00	210.7	0.0	3.00	3.80	12.75	1	93	94	
Deadend	Deadend Insulator - 15 kV	32.53	45.00	292.8	0.0	3.00	3.80	12.75	18	93	111	
Deadend	Deadend Insulator - 15 kV	32.53	-45.00	128.6	0.0	3.00	3.80	12.75	-16	93	78	
Spool	Spool Insulator - 25 kV	28.52	0.00	210.7	210.7	2.00	3.00	3.19	0	16	16	
Bolt	Three Bolt	25.07	0.00	229.5	139.5	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	24.14	0.00	229.5	139.5	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	23.01	0.00	229.5	139.5	5.00	3.00	0.00	2	0	2	
Bolt	Three Bolt	21.96	0.00	229.5	139.5	5.00	3.00	0.00	2	0	2	
Bolt	Single Bolt	21.45	0.00	210.7	300.7	5.00	3.00	0.00	1	0	1	
Totals:										34	551	584

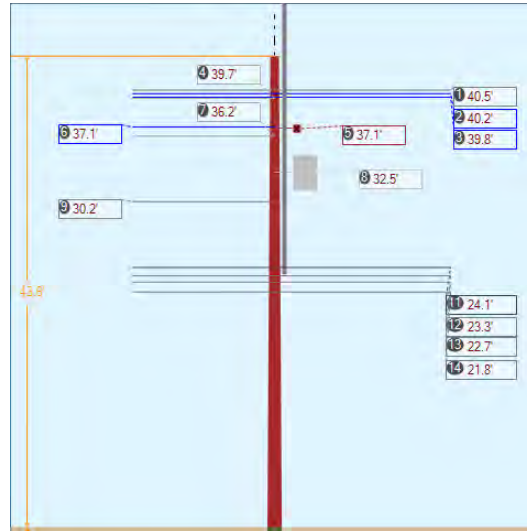
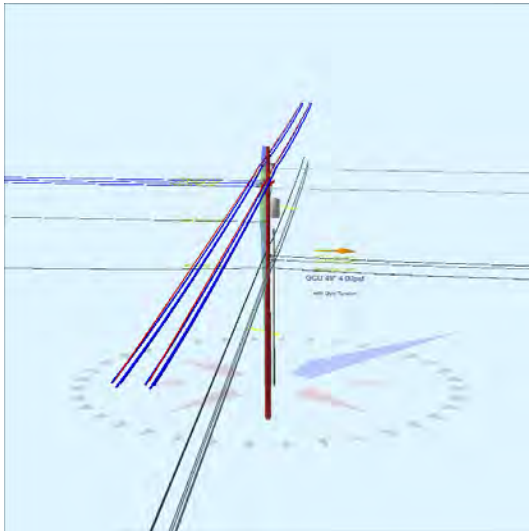
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	41.25	41.25	126.80	0.375	75.00	33.0	0.0	0.273	124.97	0.84
EHS 3/8	Span/Head	KU, UTILITY	37.83	37.83	126.80	0.375	75.00	33.0	0.0	0.273	124.95	0.96
EHS 3/8	Span/Head	Unknown, COMMUNICATION	25.07	25.07	126.80	0.375	75.00	33.0	0.0	0.273	124.89	0.90

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	1,918	1,162	1,063	0	1,063	-208	-7,237
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	2,186	1,325	1,217	0	1,217	-238	-7,777
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	2,047	1,241	1,139	0	1,139	-223	-4,770
Totals:										0	3,419	-669	-19,784

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	126.80	33.0	20,000	1.00	20,000	3,728	3,419	18.6

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.01	34.03	11.79	12.49	7.96	12.98	1.60e+6	60.00	57.00	41.74	160,559	1605.82	31.25

Pole Num:	530W - 26982-2900	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Junction
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.35	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.86	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.006443 Deg	Longitude:	-84.451686 Deg	Elevation:	918.68539358566		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	37.3	48.6
Groundline	0.0	322.7
Vertical	30.2	233.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51.9	48.6
Groundline	283.3	322.7
GL Allowable		

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	125.2	53.0		37.2	48.6	52.7	230.0
? EHS 3/8 (Span/Head)			39.7	25.0	48.6	40.4	230.0
? EHS 3/8 (Span/Head)			36.2	28.7	48.6	43.2	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 283.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	6,583	2533.2	231,042	1773.2	175.5	11,883	3,151	23	11,905	175.1
Comms	-1,324	-509.6	-31,417	-241.1	-23.9	-1,616	1,259	9	-1,607	-23.6
GuyBraces	-4,744	-1825.5	-180,376	-1384.3	-137.0	-9,277	58	0	-9,276	-136.4
PowerEquipments	-24	-9.3	-495	-3.8	-0.4	-26	694	5	-21	-0.3
Pole	-156	-60.2	-3,386	-26.0	-2.6	-174	3,139	23	-152	-2.2
Crossarms	-43	-16.6	-1,602	-12.3	-1.2	-82	190	1	-81	-1.2
Risers	-24	-9.3	-462	-3.6	-0.4	-24	55	0	-23	-0.3
Insulators	-7	-2.9	-273	-2.1	-0.2	-14	120	1	-13	-0.2
Pole Load	260	100.0	13,030	100.0	9.9	670	8,665	62	732	10.8
Pole Reserve Capacity			118,621		90.1	6,130			6,068	89.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 283.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	-568	-218.6	-22,893	-175.7	-17.4	-1,177	2,955	21	-1,156	-17.0
KU, UTILITY	2,352	904.9	72,335	555.1	54.9	3,720	1,065	8	3,728	54.8
Unknown, COMMUNICATION	-1,324	-509.6	-31,424	-241.2	-23.9	-1,616	1,316	9	-1,607	-23.6
Pole	-156	-60.2	-3,386	-26.0	-2.6	-174	3,139	23	-152	-2.2
<Undefined>	-43	-16.6	-1,602	-12.3	-1.2	-82	190	1	-81	-1.2
Totals:	260	100.0	13,030	100.0	9.9	670	8,665	62	732	10.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.50	15.67	0.5630	0.25	0.291	140.0	139.1	140.0	5,010	-214,058	-17	-1,027	-215,102
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.50	15.67	0.5630	0.33	0.291	161.2	319.0	161.2	5,010	214,327	-19	-1,180	213,127
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	11.67	1.1080	1.69	1.093	140.0	139.1	140.0	3,200	-135,598	-47	-1,541	-137,186
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	19.67	1.1080	1.69	1.093	140.0	139.1	140.0	3,200	-135,598	-47	-1,541	-137,186

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	11.67	1.1080	2.05	1.093	161.2	319.0	161.2	3,200	135,769	-54	-1,770	133,944
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	19.67	1.1080	2.05	1.093	161.2	319.0	161.2	3,200	135,769	-54	-1,770	133,944
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	15.67	1.1080	1.69	1.093	140.0	139.1	140.0	3,200	-134,473	-47	-1,528	-136,048
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	15.67	1.1080	2.05	1.093	161.2	319.0	161.2	3,200	134,642	-54	-1,755	132,832
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.50	15.67	0.5630	0.25	0.291	140.0	139.1	140.0	5,010	-214,058	17	-1,027	-215,068
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	40.50	15.67	0.5630	0.33	0.291	161.2	319.0	161.2	5,010	214,327	19	-1,180	213,166
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	11.67	1.1080	1.69	1.093	140.0	139.1	140.0	3,200	-135,598	47	-1,541	-137,093
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	19.67	1.1080	1.69	1.093	140.0	139.1	140.0	3,200	-135,598	47	-1,541	-137,093
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	11.67	1.1080	2.05	1.093	161.2	319.0	161.2	3,200	135,769	54	-1,770	134,052
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.17	19.67	1.1080	2.05	1.093	161.2	319.0	161.2	3,200	135,769	54	-1,770	134,052
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	15.67	1.1080	1.69	1.093	140.0	139.1	140.0	3,200	-134,473	47	-1,528	-135,954
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	39.83	15.67	1.1080	2.05	1.093	161.2	319.0	161.2	3,200	134,642	54	-1,755	132,941
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.07	18.88	0.3980	0.45	0.145	180.6	233.5	180.6	2,128	66,138	14	115	66,266
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.07	48.80	0.3980	0.45	0.145	180.6	233.5	180.6	2,128	66,138	21	115	66,273
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.07	48.80	0.3980	0.45	0.145	180.6	233.5	180.6	2,128	66,138	-10	115	66,243
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.17	7.31	0.3980	0.45	0.145	180.6	233.5	180.6	2,128	53,821	23	93	53,938
Totals:											253,790	48	-23,789	230,049	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
CATV	CATV 1.0	Unknown,	24.07	7.68	1.3300	1.97	0.337	140.0	139.1	140.0	925	-23,489	41	-1,051	-24,499
		COMMUNICATION													
CATV	CATV 1.0	Unknown,	24.07	7.68	1.3300	2.35	0.337	161.2	319.0	161.3	925	23,518	47	-1,207	22,358
		COMMUNICATION													
CATV	CATV .50	Unknown,	24.07	7.68	0.5700	1.63	0.193	125.2	53.0	125.2	500	-9,985	-21	56	-9,950
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.30	7.73	0.6570	1.63	0.190	125.2	53.0	125.2	750	-14,500	-21	58	-14,463
		COMMUNICATION													
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.30	7.73	0.6570	1.96	0.190	140.0	139.1	140.0	750	-18,439	-24	-644	-19,106
		COMMUNICATION													

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.30	7.73	0.6570	2.33	0.190	161.2	319.0	161.2	750	18,462	-27	-739	17,696
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.72	7.77	0.6570	1.96	0.190	140.0	139.1	140.0	750	-17,977	-24	-627	-18,628
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.72	7.77	0.6570	2.33	0.190	161.2	319.0	161.2	750	18,000	-27	-721	17,252
Telco	TELE 1.0	Unknown, COMMUNICATION	21.80	7.82	1.0000	1.92	0.400	125.2	53.0	125.2	1,000	-18,082	-36	71	-18,048
Telco	TELE 1.5	Unknown, COMMUNICATION	21.80	7.82	1.5000	2.31	0.900	140.0	139.1	140.0	2,000	-45,988	-73	-1,040	-47,101
Telco	TELE 1.5	Unknown, COMMUNICATION	21.80	7.82	1.5000	2.77	0.900	161.2	319.0	161.3	2,000	46,045	-84	-1,195	44,767
Telco	TELE 1.0	Unknown, COMMUNICATION	21.80	7.82	1.0000	3.06	0.400	180.6	233.5	180.6	1,000	18,272	55	113	18,440
Totals:												-24,162	-193	-6,927	-31,282

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer 1PH-25KVA	KU, UTILITY	32.50	21.66	360.0	360.0	365.00	39.00	--	22.00	--	289	-782	-493	
Totals:												289	-782	-493

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Normal Crossarm		37.07	6.13	233.5	233.5	50.00	4.50	3.50	96.00	0	-1,595	-1,595		
Totals:												0	-1,595	-1,595

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 10.0°	KU, UTILITY	28.74	6.81	10.0	10.0	28.74	344.85	4.00	4.00	344.85	2	-462	-460	
Totals:												2	-462	-460

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Suspension	Power, UTILITY	40.50	0.00	55.0	55.0	11.00	4.75	11.50	-18	-62	-80
Suspension	Power, UTILITY	40.50	0.00	235.0	235.0	11.00	4.75	11.50	18	-62	-44
Deadend	KU, UTILITY	37.07	0.00	233.5	0.0	3.00	3.80	12.75	6	-50	-45

Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.07	45.00	315.7	0.0	3.00	3.80	12.75	22	-50	-28
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.07	-45.00	151.3	0.0	3.00	3.80	12.75	-11	-50	-61
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.17	0.00	233.5	233.5	2.00	3.00	3.19	1	-8	-7
Bolt	Three Bolt	Unknown, COMMUNICATION	24.07	0.00	229.0	139.0	5.00	3.00	0.00	4	0	4
J-Hook	J-Hook	Unknown, COMMUNICATION	24.07	0.00	50.9	140.9	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	23.30	0.00	49.0	139.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	22.72	0.00	49.0	139.0	5.00	3.00	0.00	-4	0	-4
Bolt	Three Bolt	Unknown, COMMUNICATION	21.80	0.00	49.0	139.0	5.00	3.00	0.00	-4	0	-4
Bolt	Single Bolt	Unknown, COMMUNICATION	21.80	0.00	232.2	322.2	5.00	3.00	0.00	4	0	4
Totals:										12	-283	-272

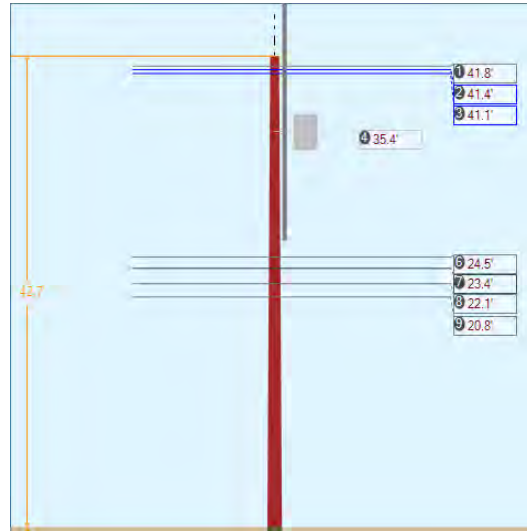
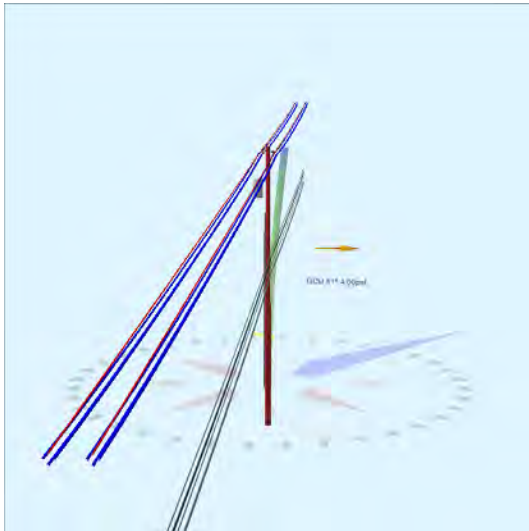
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Span/Head	KU, UTILITY	39.73	39.73	125.16	0.375	75.00	53.0	0.0	0.273	123.31	2.69
EHS 3/8	Span/Head	KU, UTILITY	36.23	36.23	125.16	0.375	75.00	53.0	0.0	0.273	123.29	3.09

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,600	5,091	3,464	0	3,464	-2,211	-87,769
EHS 3/8	Span/Head	2.30e+7	15,400	0.90	13,860	700	5,989	5,445	3,974	0	3,974	-2,536	-91,833
Totals:										0	7,438	-4,746	-179,601

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	125.16	53.0	20,000	1.00	20,000	10,536	7,438	52.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	30.19	34.18	12.06	15.40	7.96	13.33	1.60e+6	60.00	57.00	43.65	212,151	2113.34	24.39

Pole Num:	531W - NT	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.34	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.48	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.006798 Deg	Longitude:	-84.452074 Deg	Elevation:	919.716292164521		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	48.5	0.0
Groundline	48.5	0.0
Vertical	30.6	30.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	61,067	49.4
Groundline	61,067	49.4
GL Allowable	128,060	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 49.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,019	54.7	42,374	69.4	33.1	2,239	2,726	20	2,259	33.2
Comms	513	27.5	12,166	19.9	9.5	643	861	6	649	9.5
PowerEquipments	42	2.2	257	0.4	0.2	14	694	5	19	0.3
Pole	263	14.1	5,581	9.1	4.4	295	3,030	22	317	4.7
Risers	22	1.2	442	0.7	0.4	23	59	0	24	0.3
Insulators	5	0.3	247	0.4	0.2	13	80	1	14	0.2
Pole Load	1,864	100.0	61,067	100.0	47.7	3,226	7,450	54	3,281	48.2
Pole Reserve Capacity			66,993		52.3	3,574			3,519	51.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 49.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	1,024	54.9	42,597	69.8	33.3	2,250	2,768	20	2,271	33.4
Unknown, COMMUNICATION	513	27.5	12,190	20.0	9.5	644	899	7	651	9.6
KU, UTILITY	64	3.4	699	1.1	0.6	37	753	5	42	0.6
Pole	263	14.1	5,581	9.1	4.4	295	3,030	22	317	4.7
Totals:	1,864	100.0	61,067	100.0	47.7	3,226	7,450	54	3,281	48.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.53	0.5630	0.33	0.291	161.2	139.0	161.2	5,010	1,455	28	2,086	3,568
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.53	0.5630	0.19	0.291	120.7	319.1	120.7	5,010	-1,090	21	1,562	493
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.53	1.1080	2.05	1.093	161.2	139.0	161.2	3,200	922	78	3,130	4,130
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.53	1.1080	2.05	1.093	161.2	139.0	161.2	3,200	922	78	3,130	4,130
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.53	1.1080	1.39	1.093	120.7	319.1	120.7	3,200	-691	59	2,344	1,712
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.53	1.1080	1.39	1.093	120.7	319.1	120.7	3,200	-691	59	2,344	1,712

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.53	1.1080	2.05	1.093	161.2	139.0	161.2	3,200	914	79	3,105	4,098
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.53	1.1080	1.39	1.093	120.7	319.1	120.7	3,200	-685	59	2,325	1,699
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.53	0.5630	0.33	0.291	161.2	139.0	161.2	5,010	1,455	-28	2,086	3,513
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.53	0.5630	0.19	0.291	120.7	319.1	120.7	5,010	-1,090	-21	1,562	451
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.53	1.1080	2.05	1.093	161.2	139.0	161.2	3,200	922	-78	3,130	3,973
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.53	1.1080	2.05	1.093	161.2	139.0	161.2	3,200	922	-78	3,130	3,973
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.53	1.1080	1.39	1.093	120.7	319.1	120.7	3,200	-691	-59	2,344	1,594
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.53	1.1080	1.39	1.093	120.7	319.1	120.7	3,200	-691	-59	2,344	1,594
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.53	1.1080	2.05	1.093	161.2	139.0	161.2	3,200	914	-79	3,105	3,940
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.53	1.1080	1.39	1.093	120.7	319.1	120.7	3,200	-685	-59	2,325	1,581
											Totals:	2,114	-1	40,047	42,160

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.47	7.60	0.6570	2.33	0.190	161.2	139.0	161.2	750	128	46	1,330	1,504
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.47	7.60	0.6570	1.64	0.190	120.7	319.1	120.7	750	-96	34	996	935
CATV	CATV 1.0	Unknown,	23.45	7.66	1.3300	2.35	0.337	161.2	139.0	161.3	925	151	81	2,017	2,249
CATV	CATV 1.0	Unknown,	23.45	7.66	1.3300	1.65	0.337	120.7	319.1	120.7	925	-113	61	1,510	1,458
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.05	7.75	0.6570	2.33	0.190	161.2	139.0	161.2	750	115	47	1,199	1,361
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.05	7.75	0.6570	1.64	0.190	120.7	319.1	120.7	750	-86	35	898	847
Telco	TELE 1.5	Unknown,	20.85	7.82	1.5000	2.77	0.900	161.2	139.0	161.3	2,000	290	144	1,960	2,394
Telco	TELE 1.5	Unknown,	20.85	7.82	1.5000	1.92	0.900	120.7	319.1	120.7	2,000	-217	108	1,467	1,358
											Totals:	172	555	11,378	12,104

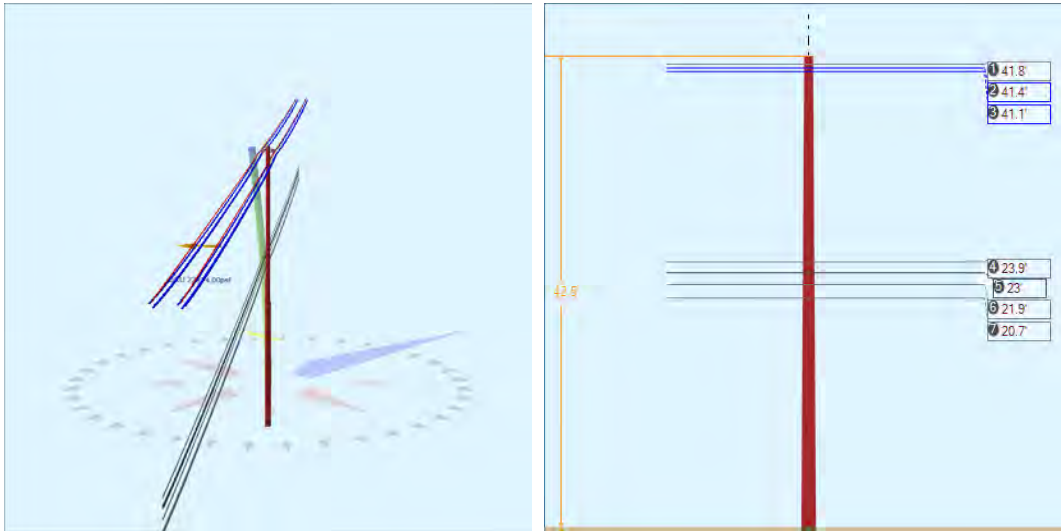
PowerEquipment		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Transformer	1PH-25KVA	KU, UTILITY	35.42	21.42	220.0	220.0	365.00	39.00	--	22.00	--	-1,222	1,477	255
Totals:												-1,222	1,477	255

Riser		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 213.0°	Riser	KU, UTILITY	31.05	6.81	213.0	213.0	31.05	372.64	4.00	4.00	372.64	-16	456	440
Totals:												-16	456	440

Insulator		Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	41.75	0.00	45.0	45.0	11.00	4.75	11.50	27	111	138	
Suspension	Suspension 11.50"	Power, UTILITY	41.75	0.00	230.0	230.0	11.00	4.75	11.50	-27	111	84	
Bolt	Three Bolt	Unknown, COMMUNICATION	24.47	0.00	49.0	319.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.45	0.00	49.0	319.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.05	0.00	49.0	319.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.85	0.00	49.0	319.0	5.00	3.00	0.00	6	0	6	
Totals:											24	222	246

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	30.75	34.30	11.91	24.25	7.96	13.21	1.60e+6	60.00	57.00	42.66	24,311	243.47	3.27

Pole Num:	532W - 26982-2820	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.51	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.42	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.006997 Deg	Longitude:	-84.452301 Deg	Elevation:	918.064275706837		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	44.9	0.0
Groundline	44.9	0.0
Vertical	23.9	29.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	56,395	229.0
Groundline	56,395	229.0
GL Allowable	127,459	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 229.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	957	56.8	39,826	70.6	31.3	2,114	2,409	18	2,132	31.4
Comms	462	27.4	10,788	19.1	8.5	573	761	6	578	8.5
Pole	262	15.5	5,534	9.8	4.3	294	3,012	22	316	4.6
Insulators	5	0.3	247	0.4	0.2	13	80	1	14	0.2
Pole Load	1,687	100.0	56,395	100.0	44.3	2,994	6,262	46	3,040	44.7
Pole Reserve Capacity			71,064		55.8	3,806			3,760	55.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 229.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	963	57.1	40,049	71.0	31.4	2,126	2,451	18	2,144	31.5
Unknown, COMMUNICATION	462	27.4	10,812	19.2	8.5	574	799	6	580	8.5
Pole	262	15.5	5,534	9.8	4.3	294	3,012	22	316	4.6
Totals:	1,687	100.0	56,395	100.0	44.3	2,994	6,262	46	3,040	44.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.52	0.5630	0.19	0.291	120.7	139.1	120.7	5,010	265	-21	1,562	1,807
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.52	0.5630	0.21	0.291	128.4	318.9	128.4	5,010	465	-22	1,662	2,105
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.52	1.1080	1.39	1.093	120.7	139.1	120.7	3,200	168	-58	2,345	2,454
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.52	1.1080	1.39	1.093	120.7	139.1	120.7	3,200	168	-58	2,345	2,454
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.52	1.1080	1.51	1.093	128.4	318.9	128.4	3,200	295	-62	2,494	2,727
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.52	1.1080	1.51	1.093	128.4	318.9	128.4	3,200	295	-62	2,494	2,727
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.52	1.1080	1.39	1.093	120.7	139.1	120.7	3,200	167	-59	2,326	2,434
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.52	1.1080	1.51	1.093	128.4	318.9	128.4	3,200	292	-62	2,474	2,704
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.52	0.5630	0.19	0.291	120.7	139.1	120.7	5,010	265	21	1,562	1,848
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.75	15.52	0.5630	0.21	0.291	128.4	318.9	128.4	5,010	465	22	1,662	2,149
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.52	1.1080	1.39	1.093	120.7	139.1	120.7	3,200	168	58	2,345	2,571
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.52	1.1080	1.39	1.093	120.7	139.1	120.7	3,200	168	58	2,345	2,571
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	11.52	1.1080	1.51	1.093	128.4	318.9	128.4	3,200	295	62	2,494	2,851
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.42	19.52	1.1080	1.51	1.093	128.4	318.9	128.4	3,200	295	62	2,494	2,851
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.52	1.1080	1.39	1.093	120.7	139.1	120.7	3,200	167	59	2,326	2,551

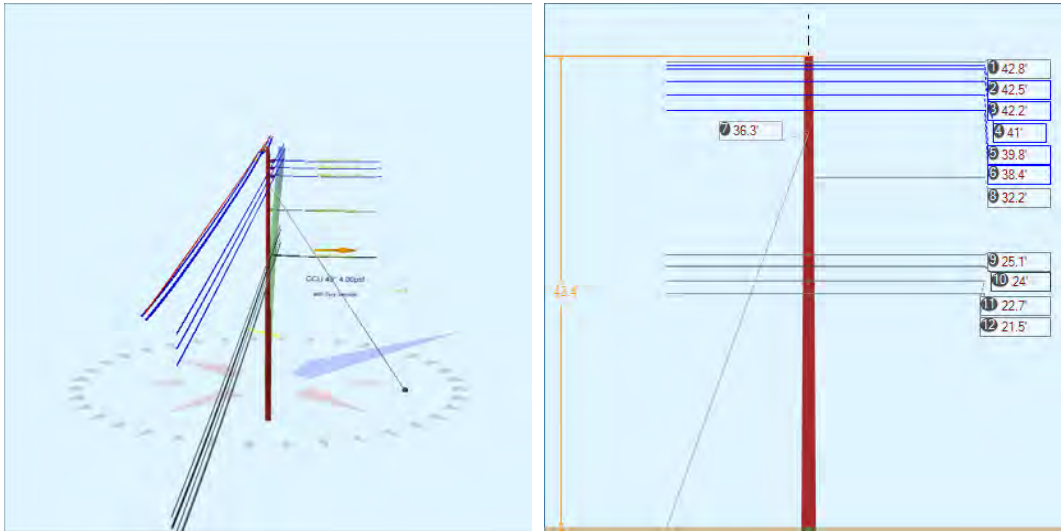
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	41.08	15.52	1.1080	1.51	1.093	128.4	318.9	128.4	3,200	292	62	2,474	2,829
											Totals:	4,229	0	35,402	39,631

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.93	7.62	0.6570	1.63	0.190	120.7	139.1	120.7	750	23	34	975	1,032
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.93	7.62	0.6570	1.76	0.190	128.4	318.9	128.4	750	40	37	1,037	1,113
CATV	CATV 1.0	Unknown,	22.96	7.68	1.3300	1.65	0.337	120.7	139.1	120.7	925	27	61	1,479	1,567
CATV	CATV 1.0	Unknown,	22.96	7.68	1.3300	1.77	0.337	128.4	318.9	128.4	925	47	65	1,573	1,685
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.89	7.75	0.6570	1.63	0.190	120.7	139.1	120.7	750	21	35	892	948
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.89	7.75	0.6570	1.76	0.190	128.4	318.9	128.4	750	37	37	948	1,022
Telco	TELE 1.5	Unknown,	20.66	7.82	1.5000	1.92	0.900	120.7	139.1	120.7	2,000	52	108	1,455	1,615
Telco	TELE 1.5	Unknown,	20.66	7.82	1.5000	2.07	0.900	128.4	318.9	128.4	2,000	92	115	1,547	1,754
											Totals:	338	491	9,905	10,735

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Suspension	Suspension 11.50"	Power, UTILITY	41.75	0.00	55.0	55.0	11.00	4.75	11.50	-27	111	84	
Suspension	Suspension 11.50"	Power, UTILITY	41.75	0.00	235.0	235.0	11.00	4.75	11.50	27	111	138	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.93	0.00	229.0	139.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	22.96	0.00	229.0	139.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.89	0.00	229.0	139.0	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.66	0.00	229.0	139.0	5.00	3.00	0.00	6	0	6	
										Totals:	24	222	246

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	29.73	34.16	11.93	21.97	7.96	13.19	1.60e+6	60.00	57.00	42.49	26,253	262.00	4.18

Pole Num:	533W - 26982-2800	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.62	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.76	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.007249 Deg	Longitude:	-84.452610 Deg	Elevation:	917.783028543383		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	49.3
Groundline	0.0	49.3
Vertical	27.3	233.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	51,096	50.0
Groundline	51,096	50.0
GL Allowable	130,657	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	24.8	53.0		0.0	49.3	1.8	230.0
? EHS 3/8 (Down)			36.3	0.0	49.3	2.9	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 50.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	877	56.3	34,734	68.0	26.6	1,809	1,137	8	1,817	26.7
Comms	399	25.6	9,654	18.9	7.4	503	490	4	506	7.4
GuyBraces	1	0.1	41	0.1	0.0	2	14	0	2	0.0
Pole	269	17.3	5,758	11.3	4.4	300	3,109	22	322	4.7
Insulators	12	0.8	908	1.8	0.7	47	405	3	50	0.7
Pole Load	1,558	100.0	51,096	100.0	39.1	2,661	5,154	37	2,698	39.7
Pole Reserve Capacity			79,561		60.9	4,139			4,102	60.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 50.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	237	15.2	9,756	19.1	7.5	508	773	6	514	7.6
KU, UTILITY	654	42.0	25,902	50.7	19.8	1,349	745	5	1,354	19.9
Unknown, COMMUNICATION	399	25.6	9,679	18.9	7.4	504	528	4	508	7.5
Pole	269	17.3	5,758	11.3	4.4	300	3,109	22	322	4.7
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,558	100.0	51,096	100.0	39.1	2,661	5,154	37	2,698	39.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.83	15.51	0.5630	0.21	0.291	128.4	138.9	128.4	5,010	5,370	-22	1,705	7,053
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	42.83	15.51	0.5630	0.01	0.291	27.1	318.8	27.1	5,010	-5,857	-5	360	-5,502
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	11.51	1.1080	1.51	1.093	128.4	138.9	128.4	3,200	3,403	-62	2,559	5,900
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	19.51	1.1080	1.51	1.093	128.4	138.9	128.4	3,200	3,403	-62	2,559	5,900
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	11.51	1.1080	0.25	1.093	27.1	318.8	27.2	3,200	-3,712	-13	540	-3,185
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.50	19.51	1.1080	0.25	1.093	27.1	318.8	27.2	3,200	-3,712	-13	540	-3,185

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.17	15.51	1.1080	1.51	1.093	128.4	138.9	128.4	3,200	3,376	-62	2,539	5,853
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	42.17	15.51	1.1080	0.25	1.093	27.1	318.8	27.2	3,200	-3,683	-13	536	-3,160
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.04	15.27	0.7200	0.02	0.462	18.7	51.7	18.7	100	5,333	17	0	5,351
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.04	15.27	0.7200	0.30	0.462	128.4	138.9	128.4	6,210	6,378	118	1,874	8,370
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	41.04	15.27	0.7200	0.01	0.462	27.1	318.8	27.1	6,210	-6,956	25	396	-6,535
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.79	15.35	0.7200	0.02	0.462	18.7	51.7	18.7	100	5,171	17	0	5,188
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.79	15.35	0.7200	0.30	0.462	128.4	138.9	128.4	6,210	6,183	119	1,817	8,119
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	39.79	15.35	0.7200	0.01	0.462	27.1	318.8	27.1	6,210	-6,744	25	384	-6,335
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.37	15.44	0.7200	0.02	0.462	18.7	51.7	18.7	100	4,987	17	0	5,004
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.37	15.44	0.7200	0.30	0.462	128.4	138.9	128.4	6,210	5,963	119	1,753	7,835
Primary	ACSR 336.4 KCM 26/7 LINNET	KU, UTILITY	38.37	15.44	0.7200	0.01	0.462	27.1	318.8	27.1	6,210	-6,504	25	370	-6,109
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	32.21	7.17	0.3980	0.01	0.145	18.7	51.7	18.7	100	4,185	4	0	4,189
Totals:											16,586	235	17,932	34,752	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.08	7.60	0.6570	1.76	0.190	128.4	138.9	128.4	750	471	36	1,086	1,594
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.08	7.60	0.6570	0.31	0.190	27.1	318.8	27.1	750	-513	8	229	-276
CATV	CATV 1.0	Unknown,	24.03	7.67	1.3300	0.23	0.337	18.7	51.7	18.7	100	3,123	9	0	3,132
CATV	CATV 1.0	Unknown,	24.03	7.67	1.3300	1.77	0.337	128.4	138.9	128.4	925	556	65	1,646	2,267
CATV	CATV 1.0	Unknown,	24.03	7.67	1.3300	0.33	0.337	27.1	318.8	27.1	925	-607	14	347	-246
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.68	7.75	0.6570	1.76	0.190	128.4	138.9	128.4	750	426	37	982	1,445
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	22.68	7.75	0.6570	0.31	0.190	27.1	318.8	27.1	750	-464	8	207	-249

Telco	TELE 1.5	Unknown, COMMUNICATION	21.52	7.82	1.5000	2.07	0.900	128.4	138.9	128.4	2,000	1,077	115	1,611	2,802
Telco	TELE 1.5	Unknown, COMMUNICATION	21.52	7.82	1.5000	0.37	0.900	27.1	318.8	27.1	2,000	-1,174	24	340	-810
Totals:											2,893	316	6,450	9,659	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	Power, UTILITY	42.83	0.00	235.0	235.0	11.00	4.75	11.50	-27	114	87
Davit	Insulator, 15 kV	KU, UTILITY	40.67	0.00	45.0	45.0	60.00	5.00	12.00	145	119	263
Davit	Insulator, 15 kV	KU, UTILITY	39.42	0.00	45.0	45.0	60.00	5.00	12.00	145	115	260
Davit	Insulator, 15 kV	KU, UTILITY	38.00	0.00	45.0	45.0	60.00	5.00	12.00	146	111	257
Spool	Spool Insulator - 25 kV	KU, UTILITY	32.21	0.00	51.7	51.7	2.00	3.00	3.19	2	15	17
Bolt	Three Bolt	Unknown, COMMUNICATION	25.08	0.00	48.9	138.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.03	0.00	48.9	138.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	22.68	0.00	48.9	138.9	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.52	0.00	48.9	138.9	5.00	3.00	0.00	6	0	6
Totals:										436	473	909

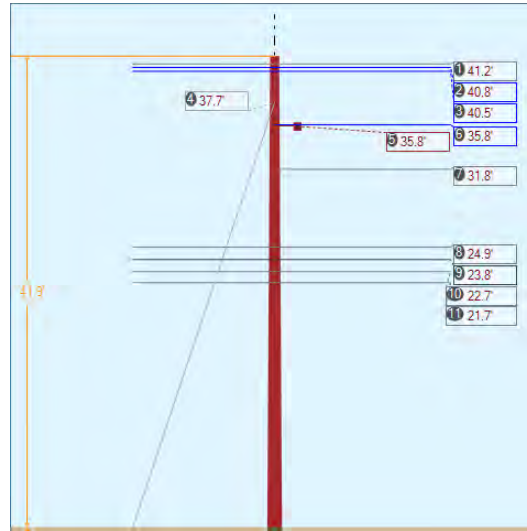
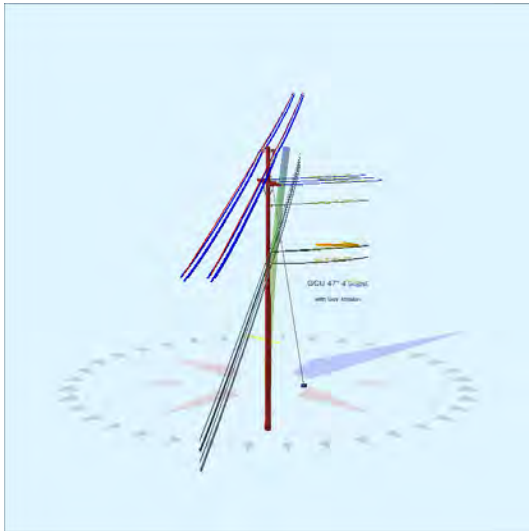
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	36.32	0.00	24.84	0.375	75.00	53.0	55.4	0.273	42.29	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	405	368	0	0	0	0	41
Totals:										0	0	0	41

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	24.84	53.0	20,000	1.00	20,000	368	0	1.8

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	27.33	33.79	12.16	11.51	7.96	13.30	1.60e+6	60.00	57.00	43.38	267,486	2712.67	52.63

Pole Num:	536W - 26982-2780	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.14	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.17	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.007669 Deg	Longitude:	-84.453044 Deg	Elevation:	910.237847698678		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	47.0
Groundline	0.0	47.0
Vertical	29.8	231.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	40.0	47.0
Groundline	40.0	47.0
GL Allowable	125,240	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	6.3	51.0		0.0	47.0	21.2	230.0
? EHS 3/8 (Down)			37.7	0.0	47.0	33.6	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 40.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,163	54.5	44,535	65.6	35.6	2,410	2,456	18	2,429	35.7
Comms	640	30.0	15,271	22.5	12.2	827	807	6	833	12.2
GuyBraces	1	0.1	46	0.1	0.0	3	12	0	3	0.0
Pole	255	12.0	5,337	7.9	4.3	289	2,945	22	311	4.6
Crossarms	61	2.9	2,182	3.2	1.7	118	190	1	120	1.8
Insulators	13	0.6	536	0.8	0.4	29	101	1	30	0.4
Pole Load	2,133	100.0	67,907	100.0	54.2	3,675	6,511	48	3,724	54.8
Pole Reserve Capacity			57,333		45.8	3,125			3,076	45.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 40.0°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Power, UTILITY	663	31.1	27,117	39.9	21.7	1,468	2,474	18	1,486	21.9
KU, UTILITY	514	24.1	17,976	26.5	14.4	973	57	0	973	14.3
Unknown, COMMUNICATION	640	30.0	15,295	22.5	12.2	828	845	6	834	12.3
Pole	255	12.0	5,337	7.9	4.3	289	2,945	22	311	4.6
<Undefined>	61	2.9	2,182	3.2	1.7	118	190	1	120	1.8
Totals:	2,133	100.0	67,907	100.0	54.2	3,675	6,511	48	3,724	54.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.17	15.52	0.5630	0.15	0.291	107.5	138.5	107.5	5,010	-39,842	18	1,356	-38,467
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.17	15.52	0.5630	0.27	0.291	144.0	318.2	144.0	5,010	38,453	25	1,819	40,296
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.84	11.52	1.1080	1.20	1.093	107.5	138.5	107.5	3,200	-25,242	51	2,035	-23,155
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.84	19.52	1.1080	1.20	1.093	107.5	138.5	107.5	3,200	-25,242	51	2,035	-23,155
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.84	11.52	1.1080	1.76	1.093	144.0	318.2	144.0	3,200	24,362	69	2,729	27,160

Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.84	19.52	1.1080	1.76	1.093	144.0	318.2	144.0	3,200	24,362	69	2,729	27,160
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.50	15.52	1.1080	1.20	1.093	107.5	138.5	107.5	3,200	-25,036	52	2,019	-22,966
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.50	15.52	1.1080	1.76	1.093	144.0	318.2	144.0	3,200	24,163	69	2,707	26,939
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.17	15.52	0.5630	0.15	0.291	107.5	138.5	107.5	5,010	-39,839	-18	1,356	-38,501
Neutral	ACSR 4/0 AWG 6/1 PENGUIN	Power, UTILITY	41.17	15.52	0.5630	0.27	0.291	144.0	318.2	144.0	5,010	38,450	-25	1,819	40,244
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.83	11.52	1.1080	1.20	1.093	107.5	138.5	107.5	3,200	-25,240	-51	2,035	-23,256
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.83	19.52	1.1080	1.20	1.093	107.5	138.5	107.5	3,200	-25,240	-51	2,035	-23,256
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.83	11.52	1.1080	1.76	1.093	144.0	318.2	144.0	3,200	24,360	-69	2,729	27,020
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.83	19.52	1.1080	1.76	1.093	144.0	318.2	144.0	3,200	24,360	-69	2,729	27,020
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.50	15.52	1.1080	1.20	1.093	107.5	138.5	107.5	3,200	-25,034	-52	2,019	-23,067
Primary	ACSR 795.0 KCM 26/7 DRAKE	Power, UTILITY	40.50	15.52	1.1080	1.76	1.093	144.0	318.2	144.0	3,200	24,161	-69	2,706	26,798
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.75	18.85	0.3980	0.02	0.145	18.1	25.6	18.1	100	4,503	2	15	4,520
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.75	48.79	0.3980	0.02	0.145	18.1	25.6	18.1	100	4,503	1	15	4,520
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	35.75	48.79	0.3980	0.02	0.145	18.1	25.6	18.1	100	4,503	0	15	4,519
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.79	7.10	0.3980	0.02	0.145	18.1	25.6	18.1	100	4,004	3	14	4,021
Totals:											9,470	7	34,916	44,393	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.89	7.52	0.6570	1.43	0.190	107.5	138.8	107.5	750	-3,731	30	892	-2,809
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	24.89	7.52	0.6570	2.03	0.190	144.0	318.2	144.0	750	3,480	40	1,197	4,716
CATV	CATV 1.0	Unknown,	23.79	7.59	1.3300	0.22	0.337	18.1	25.6	18.1	100	2,996	9	21	3,025
CATV	CATV 1.0	Unknown,	23.79	7.59	1.3300	1.44	0.337	107.5	138.8	107.5	925	-4,398	53	1,348	-2,997
CATV	CATV 1.0	Unknown,	23.79	7.59	1.3300	2.04	0.337	144.0	318.2	144.0	925	4,102	71	1,809	5,982

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.71	7.66	0.6570	1.43	0.190	107.5	138.8	107.5	750	-3,404	30	814	-2,560
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	22.71	7.66	0.6570	2.03	0.190	144.0	318.2	144.0	750	3,175	41	1,092	4,308
Telco	TELE 1.5	Unknown, COMMUNICATION	21.73	7.72	1.5000	0.24	0.900	18.1	25.6	18.1	100	2,736	16	21	2,773
Telco	TELE 1.5	Unknown, COMMUNICATION	21.73	7.72	1.5000	1.67	0.900	107.5	138.8	107.5	2,000	-8,685	94	1,346	-7,246
Telco	TELE 1.5	Unknown, COMMUNICATION	21.73	7.72	1.5000	2.40	0.900	144.0	318.2	144.0	2,000	8,100	126	1,806	10,032
Totals:											4,370	509	10,344	15,223	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	35.75	6.10	25.6	25.6	50.00	4.50	3.50	96.00	0	2,175	2,175	
Totals:											0	2,175	2,175

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Suspension	Suspension 11.50"	41.17	0.00	50.0	50.0	11.00	4.75	11.50	27	108	135	
Suspension	Suspension 11.50"	41.17	0.00	230.0	230.0	11.00	4.75	11.50	-27	108	82	
Deadend	Deadend Insulator - 15 kV	35.75	0.00	25.6	0.0	3.00	3.80	12.75	9	84	92	
Deadend	Deadend Insulator - 15 kV	35.75	45.00	107.9	0.0	3.00	3.80	12.75	14	84	98	
Deadend	Deadend Insulator - 15 kV	35.75	-45.00	303.4	0.0	3.00	3.80	12.75	3	84	87	
Spool	Spool Insulator - 25 kV	31.79	0.00	25.6	25.6	2.00	3.00	3.19	2	15	17	
Bolt	Three Bolt	24.89	0.00	48.5	138.5	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	23.79	0.00	48.5	138.5	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	22.71	0.00	48.5	138.5	5.00	3.00	0.00	6	0	6	
Bolt	Three Bolt	21.73	0.00	48.5	138.5	5.00	3.00	0.00	6	0	6	
Totals:										52	482	534

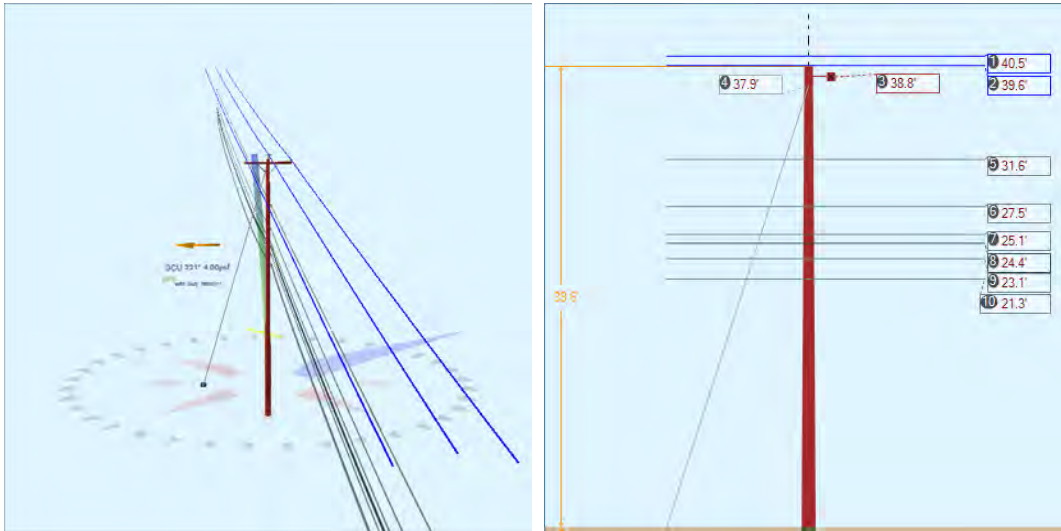
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	37.73	0.00	6.32	0.375	75.00	51.0	80.2	0.273	36.70	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,660	4,236	0	0	0	0	46
Totals:										0	0	0	46

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	6.32	51.0	20,000	1.00	20,000	4,236	0	21.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	29.80	34.19	11.85	13.31	7.96	13.11	1.60e+6	60.00	57.00	41.86	203,360	2034.65	31.25

Pole Num:	599W - 26982-1839	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.42	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.72	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.024084 Deg	Longitude:	-84.471237 Deg	Elevation:	891.791169192454		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	45.2	0.0
Groundline	45.2	0.0
Vertical	1.9	23.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	42,963	221.3
Groundline	42,963	221.3
GL Allowable	96,259	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	11.3	225.0		0.0	221.2	15.2	40.0
? EHS 3/8 (Down)			37.9	0.0	221.2	24.1	40.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 221.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	438	27.1	16,490	38.4	17.1	1,164	598	5	1,169	17.2
Comms	944	58.5	21,708	50.5	22.6	1,532	1,592	14	1,546	22.7
GuyBraces	1	0.1	43	0.1	0.0	3	12	0	3	0.0
Pole	223	13.8	4,405	10.3	4.6	311	2,343	21	332	4.9
Crossarms	1	0.1	48	0.1	0.1	3	95	1	4	0.1
Insulators	8	0.5	269	0.6	0.3	19	99	1	20	0.3
Pole Load	1,615	100.0	42,963	100.0	44.6	3,032	4,740	42	3,074	45.2
Pole Reserve Capacity			53,296		55.4	3,768			3,726	54.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 221.3°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	446	27.6	16,830	39.2	17.5	1,188	662	6	1,194	17.6
Unknown, COMMUNICATION	944	58.5	21,680	50.5	22.5	1,530	1,640	14	1,544	22.7
Pole	223	13.8	4,405	10.3	4.6	311	2,343	21	332	4.9
<Undefined>	1	0.1	48	0.1	0.1	3	95	1	4	0.1
Totals:	1,615	100.0	42,963	100.0	44.6	3,032	4,740	42	3,074	45.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.46	0.00	0.3980	0.46	0.145	157.9	130.9	157.9	2,128	-752	0	1,674	922
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	40.46	0.00	0.3980	1.54	0.145	296.5	311.1	296.5	2,128	361	0	3,143	3,504
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.65	45.33	0.3980	0.46	0.145	157.9	130.9	157.9	2,128	-737	-195	1,641	709
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.65	45.33	0.3980	1.54	0.145	296.5	311.1	296.5	2,128	354	-366	3,080	3,068
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.65	45.33	0.3980	0.46	0.145	157.9	130.9	157.9	2,128	-737	195	1,641	1,099
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.65	45.33	0.3980	1.54	0.145	296.5	311.1	296.5	2,128	354	366	3,080	3,800

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.57	6.63	0.3980	0.46	0.145	157.9	130.9	157.9	2,128	-587	-29	1,306	691
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.57	6.63	0.3980	1.54	0.145	296.5	311.1	296.5	2,128	282	-54	2,452	2,680
Totals:											-1,462	-82	18,017	16,473	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	27.53	6.87	0.6570	2.27	0.190	157.9	130.9	158.0	750	-180	-41	1,467	1,246
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	27.53	6.87	0.6570	5.18	0.190	296.5	311.1	296.6	750	87	-76	2,754	2,765
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.15	7.01	0.6570	2.27	0.190	157.9	130.9	158.0	750	-165	-41	1,340	1,134
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	25.15	7.01	0.6570	5.18	0.190	296.5	311.1	296.6	750	79	-78	2,516	2,517
CATV	CATV 1.0	Unknown,	24.39	7.06	1.3300	2.29	0.337	157.9	130.9	158.0	925	-197	-73	2,056	1,786
CATV	CATV 1.0	Unknown,	24.39	7.06	1.3300	5.53	0.337	296.5	311.1	296.7	925	95	-137	3,860	3,817
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.08	7.14	0.6570	2.27	0.190	157.9	130.9	158.0	750	-151	-42	1,230	1,037
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	23.08	7.14	0.6570	5.18	0.190	296.5	311.1	296.6	750	73	-79	2,309	2,302
Telco	TELE 1.5	Unknown,	21.32	7.24	1.5000	2.70	0.900	157.9	130.9	158.0	2,000	-372	-131	1,964	1,461
Telco	TELE 1.5	Unknown,	21.32	7.24	1.5000	6.68	0.900	296.5	311.1	296.8	2,000	179	-245	3,687	3,620
Totals:											-554	-944	23,182	21,685	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.83	5.45	311.0	311.0	50.00	4.50	3.50	96.00	0	48	48	
Totals:											0	48	48

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Pin	Pin Insulator - 22 kV	KU, UTILITY	39.58	0.00	0.0	0.0	13.00	9.00	10.50	0	184	184
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.02	45.00	34.1	0.0	6.00	3.50	7.50	-43	50	7
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.02	-45.00	227.9	0.0	6.00	3.50	7.50	43	50	93
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.57	0.00	41.0	311.0	2.00	3.00	3.19	-2	15	13
Bolt	Three Bolt	Unknown, COMMUNICATION	27.53	0.00	41.0	311.0	5.00	3.00	0.00	-5	0	-5
Bolt	Three Bolt	Unknown, COMMUNICATION	25.15	0.00	41.0	311.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	24.39	0.00	41.0	311.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	23.08	0.00	41.0	311.0	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	21.32	0.00	41.0	311.0	5.00	3.00	0.00	-6	0	-6
Totals:										-30	298	268

Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8	Down	KU, UTILITY	37.91	0.00	11.29	0.375	75.00	225.0	73.2	0.273	37.96	0.00

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ^{*2} (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	3,339	3,036	0	0	0	0	43
Totals:										0	0	0	43

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	11.29	225.0	20,000	1.00	20,000	3,036	0	15.2

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	23.73	33.51	11.06	10.26	7.32	12.01	1.60e+6	60.00	57.00	39.58	243,447	2494.65	52.63

48' 1" - 526W - 26982-3000

Wendy's
 OLD FASHIONED
HAMBURGERS
 4 FOR \$4
 SO MANY MORE CHOICES

35' 5" - Lowest Power

29' 6" - Proposed Metronet

25' 3" - Highest Tel Cable

Richmond

4' - Base offset

Base

40' 11" - 527W - 26982-2990

28' 7" - Lowest Power

26' 7" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

Base

42' 7" - 528W - 26982-2980

33' 3" - Lowest Power

26' 7" - Proposed Metronet

22' 7" - Highest Tel Cable

GOODYEAR

TIRE & SERVICE
METRONET

4' - Base offset

Base

41' 9" - 529W - 26982-2950

28' 6" - Lowest Power

25' 1" - Proposed Metronet

23' - Highest Tel Cable

4' - Base offset

Base

43' 7" - 530W - 26982-2900

28' 9" - Lowest Power

26' 1" - Proposed Metronet

22' 9" - Highest Tel Cable

4' - Base offset

Base

42' 8" - 531W - NT

31' 1" - Lowest Power

26' 6" - Proposed Metronet

24' 9" - Highest Tel Drop

22' - Highest Tel Cable

4' - Base offset

Base

42' 6" - 532W - 26982-2820

39' 4" - Lowest Power

25' 11" - Proposed Metronet

21' 10" - Highest Tel Cable

4' - Base offset

Base

43' 5" - 533W - 26982-2800

32' 2" - Lowest Power

27' 1" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

Base

41' 10" - 536W - 26982-2780

31' 10" - Lowest Power

26' 11" - Proposed Metronet

22' 8" - Highest Tel Cable

4' - Base offset

Base

39' 7" - 599W - 26982-1839

31' 7" - Lowest Power

29' 6" - Proposed Metronet

26' 5" - Highest Tel Cable

4' - Base offset

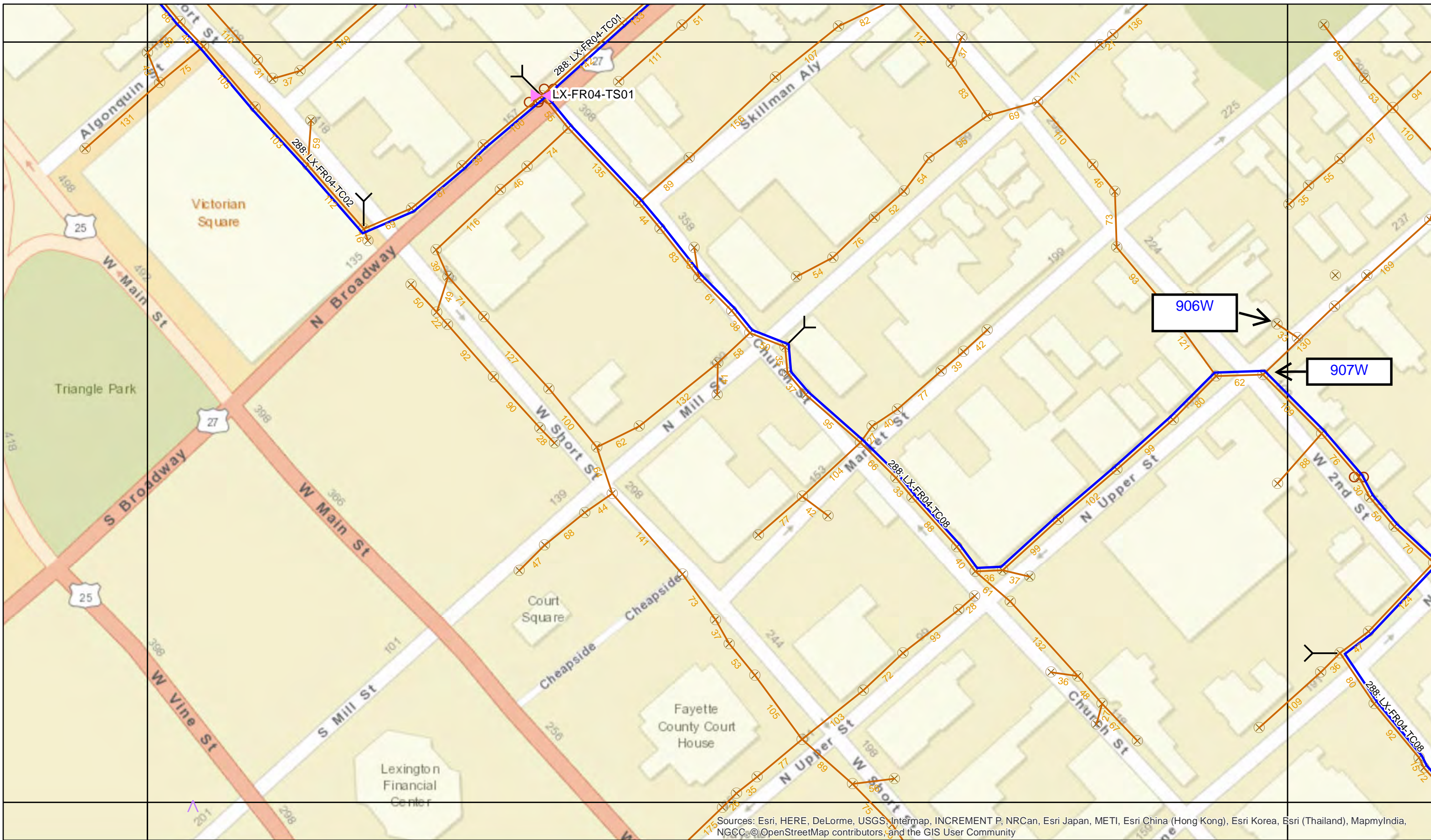
Base

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, March 19, 2018 2:44 PM
To: Windstream Jointuse
Cc: Hays, Sarah K; Permits
Subject: LX-FR04-05BiW
Attachments: Map Key.pdf; LX-FR04-05BiW - MAP.PDF; LX-FR04-05BiW - Windstream Inventory Report.pdf; O-Calcs.pdf; Pole Photos.pdf; LX-FR04-05BiW - METRONET POLE INVENTORY REPORT.XLSX

Good Afternoon,
Please see attached for proposal titled LX-FR04-05BiW. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com





Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, ©OpenStreetMap contributors, and the GIS User Community

LXBF27
 PROJECT NUMBER:
 LXTNXY00497.CB

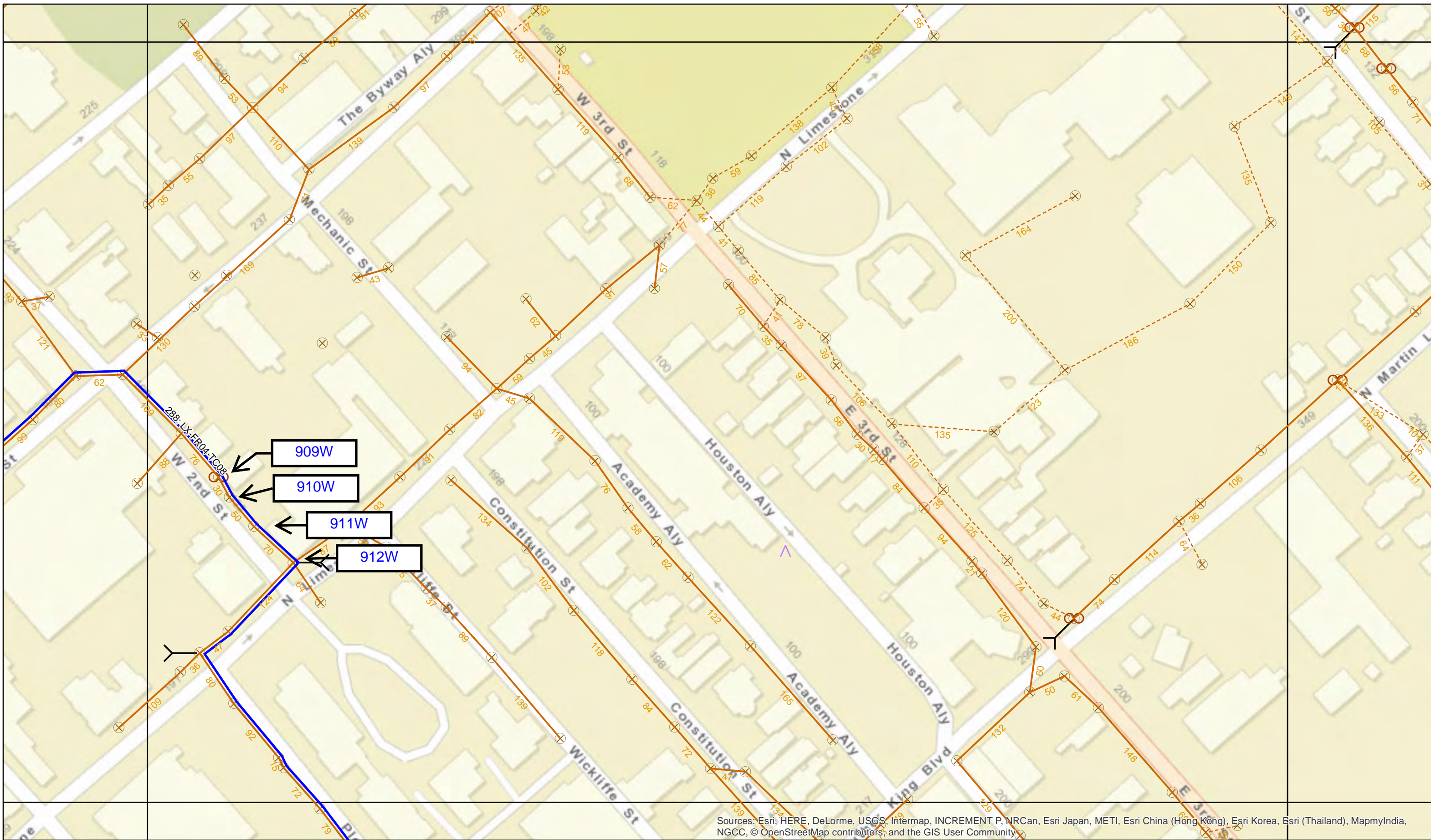
STAKING GRID DRAWING
 ROUTE: LX-FR04 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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 3701 Communications Way
 Evansville, In 47715





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LXBF28

PROJECT NUMBER:
LXTNXY.00497.CB

DATE: 1/16/2018

USER NAME: arcgis

DESIGN ENG

STAKING GRID DRAWING

ROUTE: LX-FR04 Q1
PROJECT: Lexington City Build
LOCATION: Lexington, KY

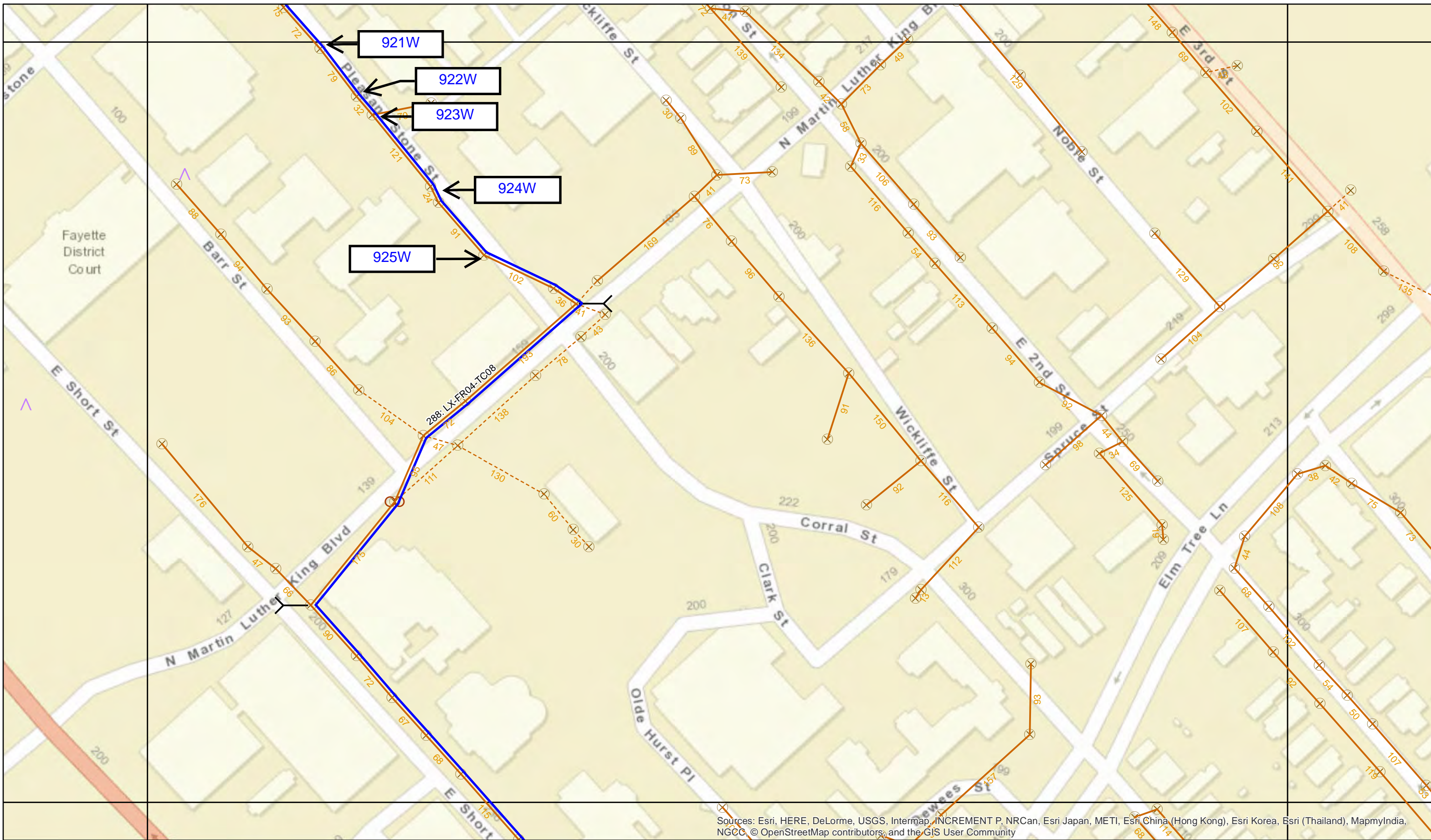
REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBE28

DESIGN ENG

USER NAME: arcgis

DATE: 1/16/2018

PROJECT NUMBER: LXTNXY00437.CB

STAKING GRID DRAWING

ROUTE: LX-FR04 Q1

PROJECT: Lexington City Build

LOCATION: Lexington, KY

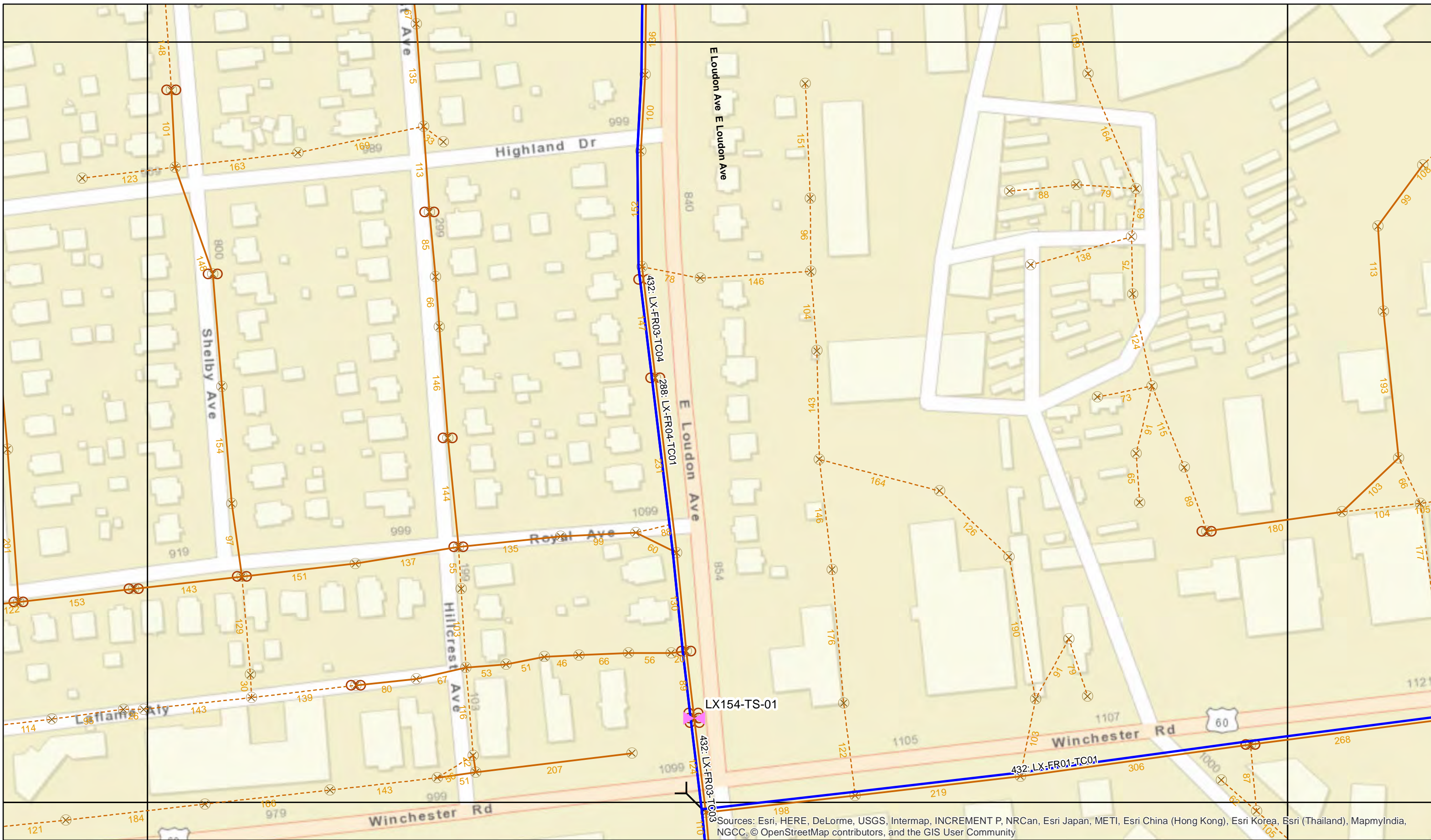
REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBD33

DESIGN ENG

USER NAME: argris

DATE: 1/16/2018

PROJECT NUMBER: LXTNXY00497.CB

STAKING GRID DRAWING

ROUTE: LX-FR04 Q1

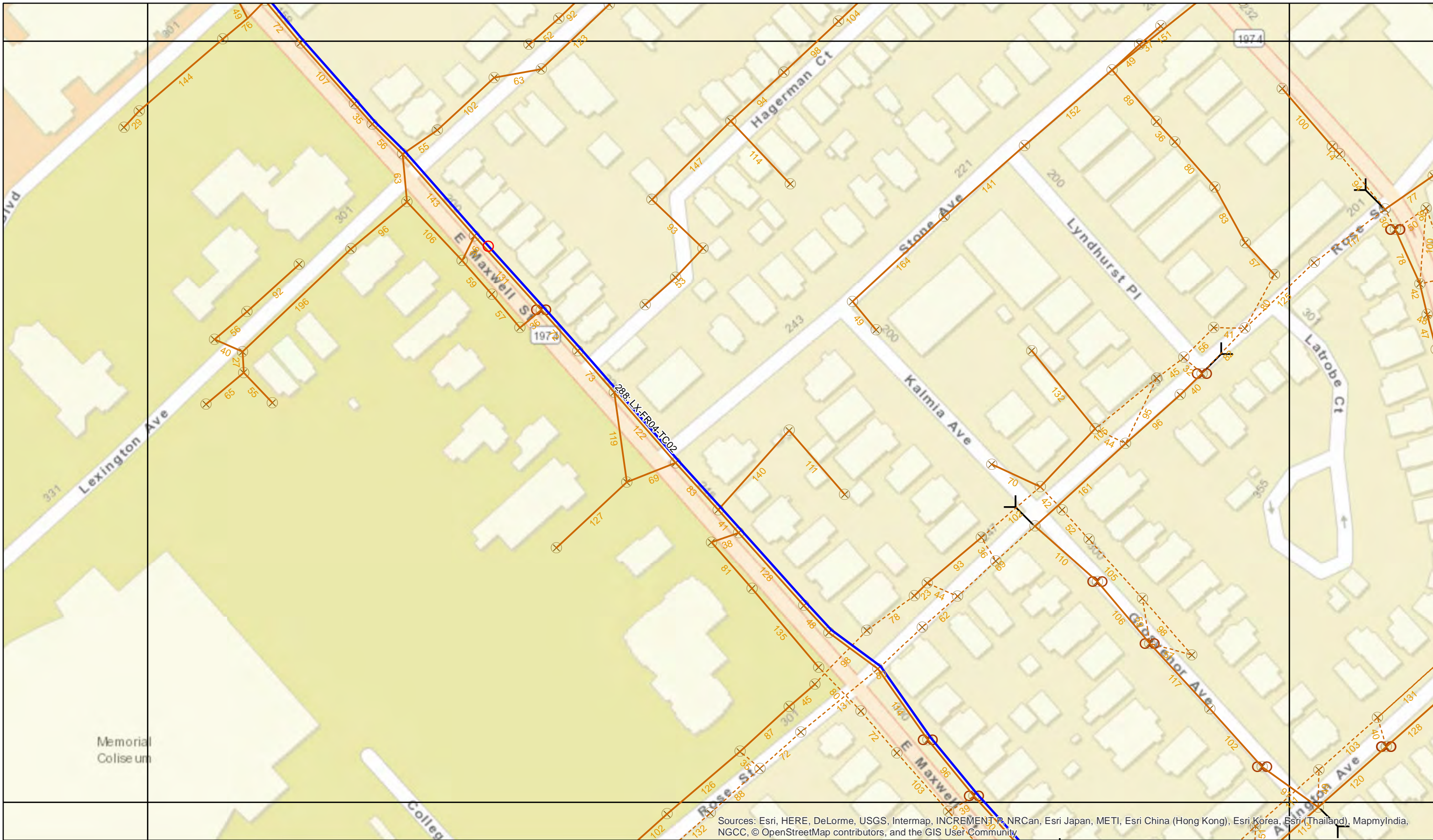
PROJECT: Lexington City Build

LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBC27

DESIGN ENG
 USER NAME: arcgis
 DATE: 1/16/2018
 PROJECT NUMBER:
 LXTNXY00497.CB

STAKING GRID DRAWING

ROUTE: LX-FR04 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

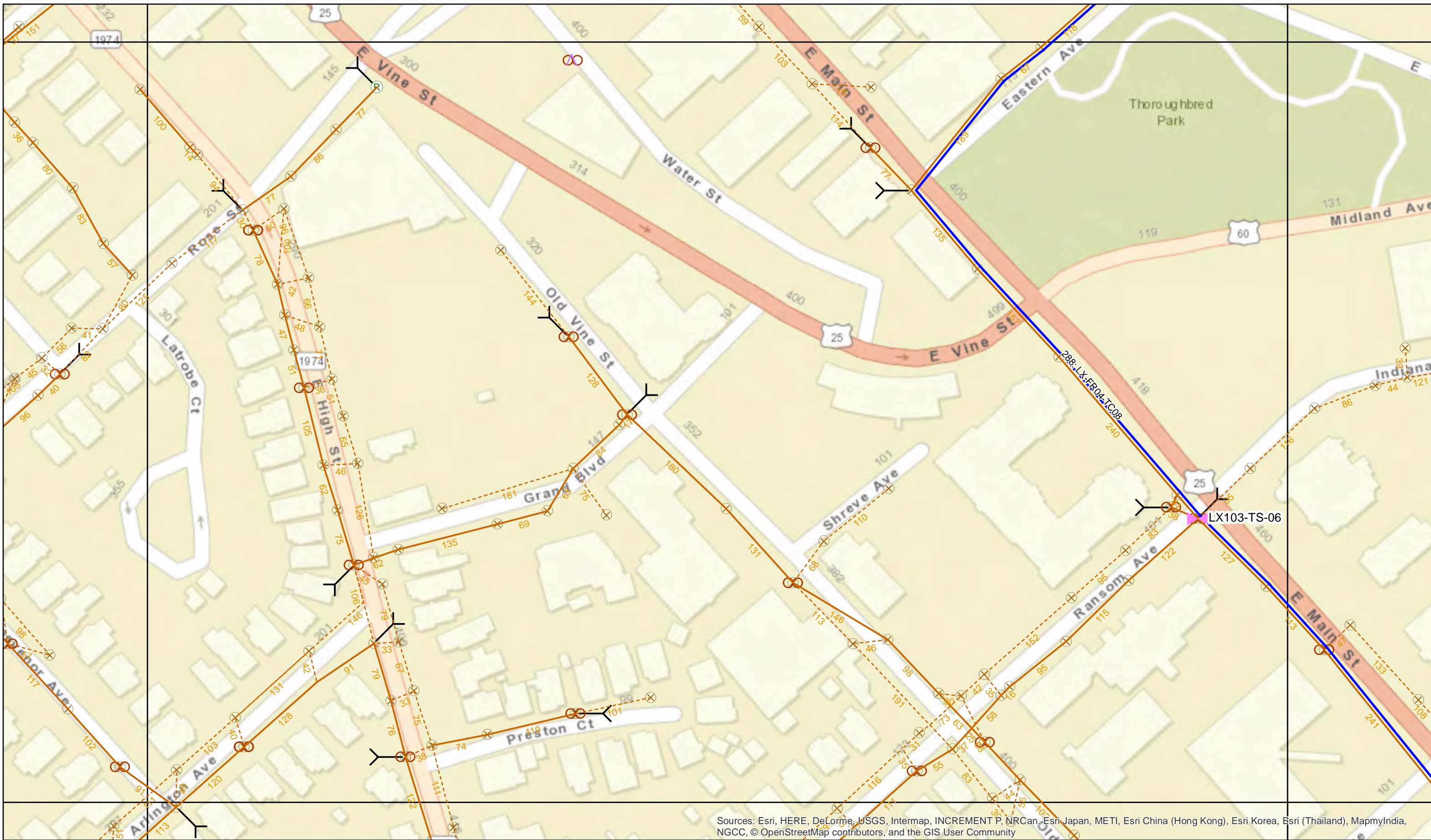
REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBC28
 PROJECT NUMBER:
 LXTNXY00497.CB
 DATE: 1/16/2018
 USER NAME: argis
 DESIGN ENG

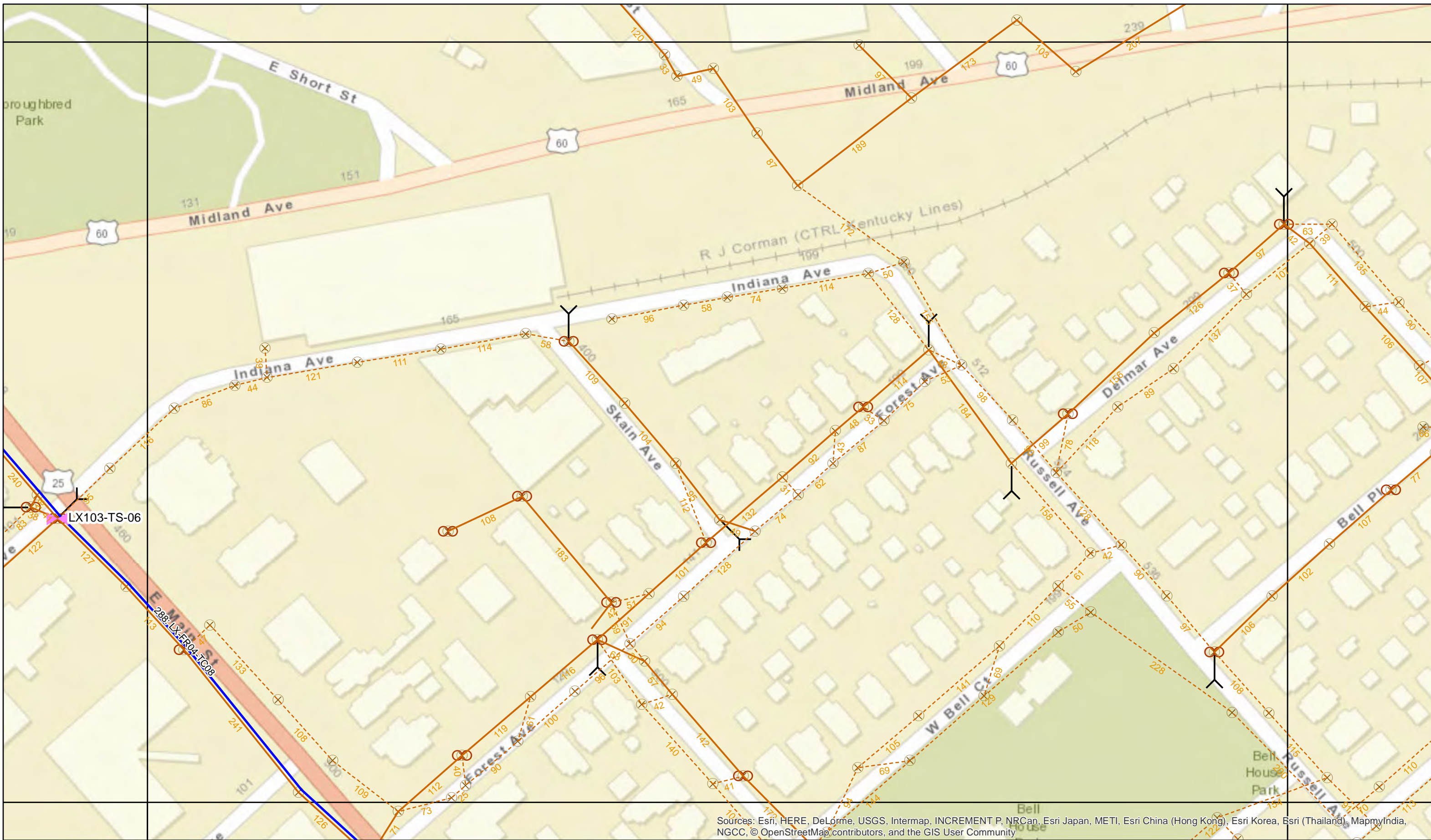
STAKING GRID DRAWING
 ROUTE: LX-FR04 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG DRAFTER

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LXBC29

PROJECT NUMBER:
LXTNKY00487.CB

DATE
1/16/2018

USER NAME:
argis

DESIGN ENG

STAKING GRID DRAWING

ROUTE: LX-FR04 Q1
PROJECT: Lexington City Build
LOCATION: Lexington, KY

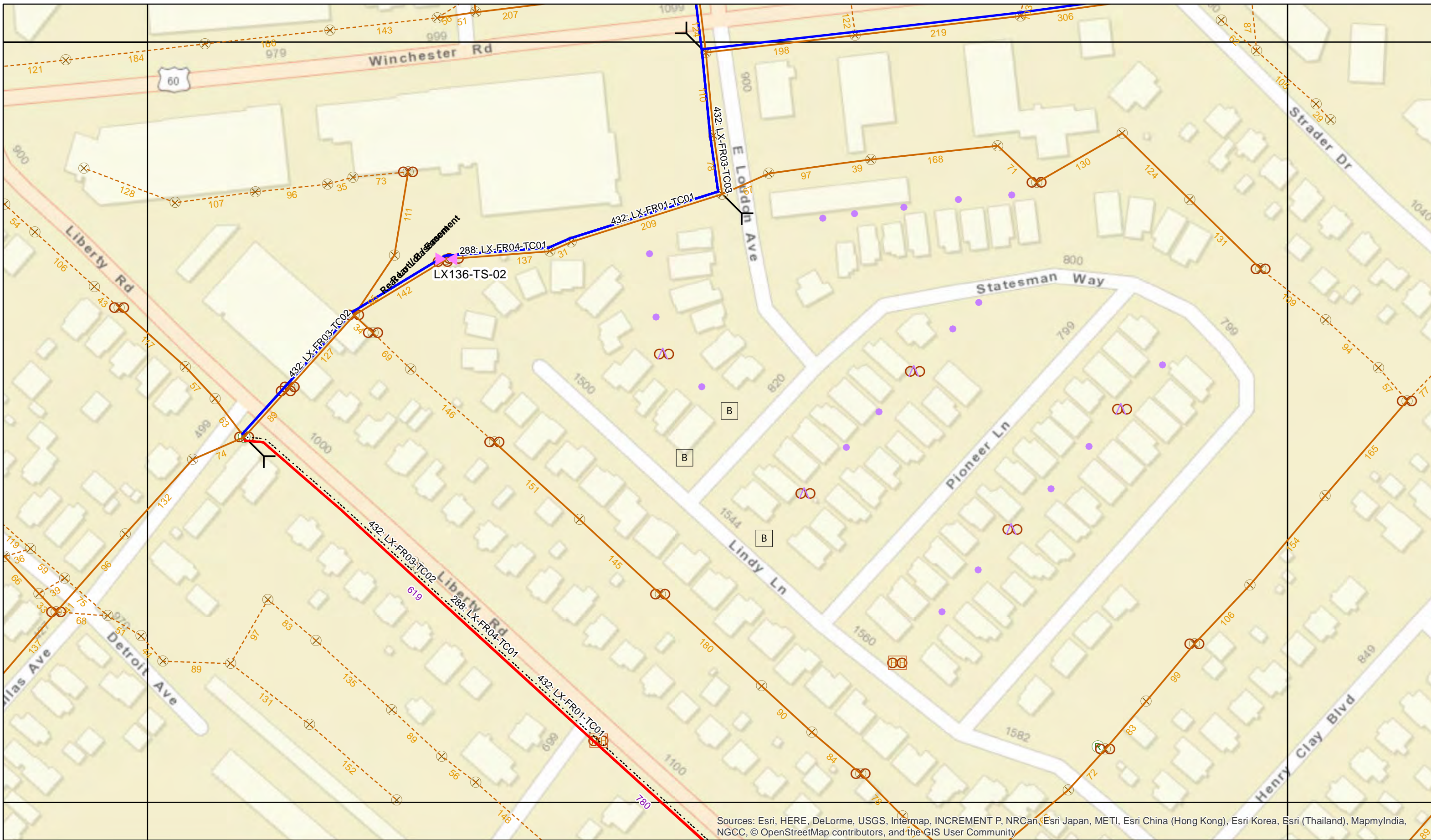
REV	DATE	DESCRIPTION	ENG	DRAFTER

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LXBC33
 PROJECT NUMBER:
 LXTNXY00457.CB

STAKING GRID DRAWING
 ROUTE: LX-FR04 Q1
 PROJECT: Lexington City Build
 LOCATION: Lexington, KY

REV	DATE	DESCRIPTION	ENG	DRAFTER

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 3701 Communications Way
 Evansville, In 47715



LX-FR04-05BiW Pole Inventory Report

POLE COUNT		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole c	Make Ready
		906W 27401	55/2	WS	1=None		
KU	0	906W 27401		WS			
Windstream	12	906W 27401		WS			
Total Pole Count	12	906W 27401		WS			
Total Needing Make Ready	2	906W 27401		WS			
		906W 27401		WS			
		906W 27401		WS			
		906W 27401		WS			
		907W NT	35/2	WS	1=None		
		907W NT		WS			
		907W NT		WS			
		907W NT		WS			
		907W NT		WS			
		907W NT		WS			
		907W NT		WS			
		907W NT		WS			
		907W NT		WS			
		907W NT		WS			
		909W 61628-26007	45/3	WS	1=None		
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		909W 61628-26007		WS			
		910W NT	45/3	WS	1=None		
		910W NT		WS			
		910W NT		WS			

910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
910W NT			WS	
911W 61680-25956	45/3		WS	1=None
911W 61680-25956			WS	
911W 61680-25956			WS	
911W 61680-25956			WS	
911W 61680-25956			WS	
911W 61680-25956			WS	
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911W 61680-25956			WS	
912W 61726-25911	45/3		WS	2=Comms
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912W 61726-25911			WS	
912W 61726-25911			WS	
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912W 61726-25911			WS	
912W 61726-25911			WS	
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912W 61726-25911			WS	
921W 61757-25555	45/3		WS	1=None
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
921W 61757-25555			WS	
922W 61853-25440	45/3		WS	1=None
922W 61853-25440			WS	
922W 61853-25440			WS	
922W 61853-25440			WS	

Owner	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
53.80	201 W SECOND ST	38.04908	-84.49528	KU		
		38.04908	-84.49528	KU		
		38.04908	-84.49528	KU		
		38.04908	-84.49528	KU		
		38.04908	-84.49528	Metronet		
		38.04908	-84.49528	Level 3		
		38.04908	-84.49528	Windstream		
		38.04908	-84.49528	Windstream		
56.30	200 N UPPER ST	38.04903	-84.49521	KU		
		38.04903	-84.49521	KU		
		38.04903	-84.49521	KU		
		38.04903	-84.49521	KU		
		38.04903	-84.49521	KU		
		38.04903	-84.49521	KU		
		38.04903	-84.49521	Metronet		
		38.04903	-84.49521	Level 3		
		38.04903	-84.49521	Windstream		
		38.04903	-84.49521	Windstream		
30.00	115 W SECOND ST, A	38.04863	-84.49478	KU		
		38.04863	-84.49478	KU		
		38.04863	-84.49478	KU		
		38.04863	-84.49478	KU		
		38.04863	-84.49478	KU		
		38.04863	-84.49478	KU		
		38.04863	-84.49478	KU		
		38.04863	-84.49478	Metronet		
		38.04863	-84.49478	Windstream		
		38.04863	-84.49478	Level 3		
		38.04863	-84.49478	Windstream		
		38.04863	-84.49478	Windstream		
13.40	115 W SECOND ST, A	38.04856	-84.49472	KU		
		38.04856	-84.49472	KU		
		38.04856	-84.49472	KU		

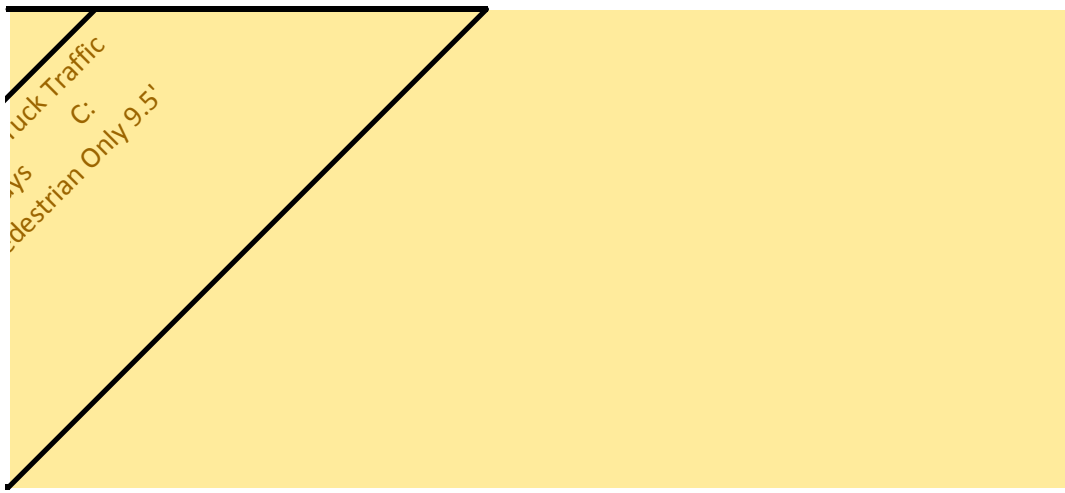
		38.04856	-84.49472	KU	
		38.04856	-84.49472	KU	
		38.04856	-84.49472	KU	
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		38.04856	-84.49472	KU	
		38.04856	-84.49472	Metronet	
		38.04856	-84.49472	Level 3	
		38.04856	-84.49472	Windstream	
		38.04856	-84.49472	Windstream	
	13.50	101 W SECOND ST	38.04846	-84.49462	KU
			38.04846	-84.49462	KU
			38.04846	-84.49462	KU
			38.04846	-84.49462	KU
			38.04846	-84.49462	KU
			38.04846	-84.49462	Metronet
			38.04846	-84.49462	Level 3
			38.04846	-84.49462	Windstream
			38.04846	-84.49462	Windstream
	59.60	201 N LIMESTONE	38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	KU
			38.04833	-84.49442	Metronet
Lower Level 3			38.04833	-84.49442	Level 3
Lower Windstream			38.04833	-84.49442	Windstream
Lower Windstream			38.04833	-84.49442	Windstream
	50.30	194 N LIMESTONE, 4	38.04743	-84.49426	KU
			38.04743	-84.49426	KU
			38.04743	-84.49426	KU
			38.04743	-84.49426	KU
			38.04743	-84.49426	KU
			38.04743	-84.49426	KU
			38.04743	-84.49426	Metronet
			38.04743	-84.49426	Level 3
			38.04743	-84.49426	Charter
			38.04743	-84.49426	Windstream
	26.90	194 N LIMESTONE, 4	38.04723	-84.49413	KU
			38.04723	-84.49413	KU
			38.04723	-84.49413	KU
			38.04723	-84.49413	KU

		38.04723	-84.49413	KU
		38.04723	-84.49413	KU
		38.04723	-84.49413	KU
		38.04723	-84.49413	KU
		38.04723	-84.49413	KU
		38.04723	-84.49413	Metronet
		38.04723	-84.49413	Level 3
		38.04723	-84.49413	Charter
		38.04723	-84.49413	Windstream
	37.20 194 N LIMESTONE, 4	38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	KU
		38.04720	-84.49406	Metronet
Lower Level 3		38.04720	-84.49406	Level 3
Lower Charter		38.04720	-84.49406	Charter
		38.04720	-84.49406	Windstream
		38.04720	-84.49406	Windstream
Transfer to new pole	28.50 194 N LIMESTONE, 3	38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
Transfer to new pole		38.04694	-84.49381	KU
		38.04694	-84.49381	Metronet
Transfer to new pole		38.04694	-84.49381	Level 3
Transfer to new pole		38.04694	-84.49381	Charter
Transfer to new pole		38.04694	-84.49381	Windstream
Transfer to new pole		38.04694	-84.49381	Windstream
Transfer to new pole	36.80 155 N MARTIN LUTHE	38.04667	-84.49352	KU
Transfer to new pole		38.04667	-84.49352	KU
Transfer to new pole		38.04667	-84.49352	KU
Transfer to new pole		38.04667	-84.49352	KU
Transfer to new pole		38.04667	-84.49352	KU
Transfer to new pole		38.04667	-84.49352	KU
Transfer to new pole		38.04667	-84.49352	KU

Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm Clearance to Ground	3rd Party Comm Clearance to Power	Environment Code	Roads B: Residential/Over Driveways	Pedestrian traffic only D: Ped
Primary	47' 4"			N	N			B: Residential/Over Driveways		
Primary	40' 10"			N	N					
Neutral	37' 7"			N	N					
Neutral	26' 7"			N	N					
Communication		22' 2"		N	N					
Communication	21' 2"		N/A	N	N					
Communication	20' 0"			N	N					
Communication	18' 9"	17' 6"		N	N					
Highest Tel Drop	28' 11"			N	N			D: Pedestrian Only 9.5'		
Secondary	27' 0"			N	N					
Secondary Drip Loop	26' 2"			N	N					
Streetlight	25' 4"			N	N					
Traffic Signal	23' 6"			N	N					
Traffic Signal	21' 4"			N	N					
Communication		19' 8"		N	N					
Communication	18' 8"		N/A	N	N					
Communication	17' 8"			N	N					
Communication	16' 7"	16' 1"		N	N					
Primary	37' 8"			N	N			D: Pedestrian Only 9.5'		
Primary Riser	32' 9"			N	N					
Neutral	31' 4"			N	N					
Secondary	30' 3"			N	N					
Secondary	29' 8"			N	N					
Secondary	29' 0"			N	N					
Secondary Drip Loop	28' 6"			N	N					
Communication		20' 10"		N	N					
Communication	19' 10"			N	N					
Communication	18' 10"		111	N	N					
Communication	17' 11"			N	N					
Communication	16' 10"	16' 11"		N	N					
Primary	38' 0"			N	N			B: Residential/Over Driveways		
Neutral	31' 6"			N	N					
Secondary	30' 7"			N	N					

Secondary	29' 10"			N	N	
Secondary	29' 2"			N	N	
Streetlight	27' 2"			N	N	
Streetlight	26' 8"			N	N	
Streetlight Drip Loop	26' 6"			N	N	
Communication		20'11"		N	N	
Communication	19' 11"		93	N	N	
Communication	18' 11"			N	N	
Communication	17' 11"		16'7"	N	N	
Primary	37' 8"			N	N	D: Pedestrian Only 9.5'
Neutral	29' 10"			N	N	
Secondary	28' 11"			N	N	
Secondary	28' 3"			N	N	
Secondary	27' 6"			N	N	
Communication		20'1"		N	N	
Communication	19' 1"		48	N	N	
Communication	18' 1"			N	N	
Communication	17' 2"		15'8"	N	N	
Primary	36' 9"			N	N	D: Pedestrian Only 9.5'
Transformer	27' 11"			N	N	
Neutral	26' 3"			N	N	
Neutral	25' 8"			N	N	
Secondary	25' 0"			N	N	
Secondary	24' 5"			N	N	
Secondary	23' 8"			N	N	
Streetlight	22' 4"			N	N	
Streetlight Drip Loop	21' 9"			N	N	
Communication		19'7"		N	N	
Communication	19' 7"	18'7"	105	N	N	
Communication	18' 7"	17'8"		N	N	
Communication	17' 8"	16'8"	18'3"	N	N	
Primary	39' 0"			N	N	B:Residential/Over Driveways
Capacitor Bank	29' 0"			N	N	
Neutral	27' 11"			N	N	
Secondary	27' 2"			N	N	
Streetlight	25' 10"			N	N	
Streetlight Drip Loop	25' 1"			N	N	
Communication		22'8"		N	N	
Communication	21' 8"		51	N	N	
Communication	20' 8"			N	N	
Communication	19' 5"		18'4"	N	N	
Primary	38' 9"			N	N	D: Pedestrian Only 9.5'
Transformer	28' 10"			N	N	
Neutral	27' 2"			N	N	
Secondary	26' 9"			N	N	

Secondary	26' 4"			N	N	
Secondary	25' 11"			N	N	
Neutral	25' 7"			N	N	
Secondary	24' 7"			N	N	
Secondary Riser	24' 5"			N	N	
Communication		20'4"		N	N	
Communication	19' 4"		58	N	N	
Communication	18' 3"			N	N	
Communication	17' 2"	16'6"		N	N	
Primary	33' 11"			N	Y	B:Residential/Over Driveways
Neutral	26' 11"			N	Y	
Secondary	26' 4"			N	Y	
Secondary	26' 1"			N	Y	
Neutral	25' 8"			N	Y	
Secondary	25' 2"			N	Y	
Secondary	24' 10"			N	Y	
Streetlight	22' 10"			N	Y	
Streetlight Drip Loop	22' 7"			N	Y	
Communication		21'6"		N	Y	
Communication	20' 8"	19'7"	28	N	Y	
Communication	19' 7"	18'7"		N	Y	
Communication	17' 4"			N	Y	
Communication	16' 4"	14'9"		N	Y	
Primary		42' 5"		N	Y	B:Residential/Over Driveways
Transformer		31' 0"		N	Y	
Secondary		30' 2"		N	Y	
Neutral		29' 6"		N	Y	
Secondary		28' 9"		N	Y	
Secondary		28' 2"		N	Y	
Secondary Drip Loop		27' 8"		N	Y	
Streetlight		26' 0"		N	Y	
Streetlight Drip Loop		25' 9"		N	Y	
Communication		22'5"		N	Y	
Communication		21'5"	22	N	Y	
Communication		20'5"		N	Y	
Communication		19'5"		N	Y	
Communication		18'5"	15'0"	N	Y	
Secondary		39' 7"		N	N	B:Residential/Over Driveways
Neutral		38' 10"		N	N	
Secondary		38' 8"		N	N	
Secondary		38' 2"		N	N	
Secondary		37' 6"		N	N	
Streetlight		35' 10"		N	N	
Streetlight Drip Loop		35' 7"		N	N	



NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH THE APPLICATION - YOU WILL BE BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE NO EXCEPTIONS TO THIS POLICY!!!!

EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE

PROPOSAL #:
Submit in Duplicate

LX-FR04-05BIW

Name of Firm Applying:
Street Address,
City, ST, ZIP of Firm
Applying

3701 Communications Way, Evansville, IN 47715

Authorized Signature & Date:

Lauren Sandefur 8.19.18

Contact Name:
Phone #
EMAIL ADDRESS

CAN-RUS, INC
LAUREN SANDEFUR 812-213-1328
lauren.sandefur@metronetinc.com

By this application & signature, my firm is agreeing to pay all engineering fees associated with this application if my firm chooses NOT to proceed with the project.
If we choose to proceed all ESTIMATED fees, including engineering & maker-ready MUST BE PAID IN FULL UP FRONT.
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATIONS BEING PLACED ON HOLD

NOTE: Final costs will be determined by actual time & material required to do the maker-ready work. Any difference in charges will be billed accordingly.

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Column 7	Column 8	Column 9	Column 10	Column 11	Column 12
Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Licensee to Complete	Windstream to Complete	Windstream To Complete	Windstream To Complete
Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop	Hgt of lowest Power Cable	Hgt of other attachments on pole	# & type of Attachments	Height Licensee to attach at	Licenseor Work Description	Bill for Rent Y or N
1	27401	906W 201 W SECOND ST, Lexington, KY 40507	55, 2, WXXM	20'0"	N/A	26'7"		(2)Fiber/Strand			
2	NT	907W 200 N UPPER ST, Lexington, KY 40507	35, 2, WXXM	17'8"	N/A	25'4"		(1)Fiber/Strand			
3	61628-26007	909W 115 W SECOND ST, A, Lexington, KY 40507	45, 3, WXXM	19'10"	19'5"	28'6"		(1)Fiber/Strand			
4	NT	910W 115 W SECOND ST, A, Lexington, KY 40507	45, 3, WXXM	18'11"	20'9"	26'6"		(1)Fiber/Strand			
5	61680-25956	911W 101 W SECOND ST, Lexington, KY 40507	45, 3, WXXM	18'1"	18'5"	27'6"		(1)Fiber/Strand			
6	61726-25911	912W 201 N LIMESTONE, Lexington, KY 40507	45, 3, WXXM	18'7"	N/A	21'9"		(1)Fiber/Strand			
7	61757-25555	921W 194 N LIMESTONE, 4, Lexington, KY 40507	45, 3, WXXM	19'5"	N/A	25'1"		(2)Fiber/Strand			
8	61853-25440	922W 194 N LIMESTONE, 4, Lexington, KY 40507	45, 3, WXXM	17'2"	16'5"	24'5"		(1)Fiber/Strand			
9	61874-25418	923W 194 N LIMESTONE, 4, Lexington, KY 40507	40, 4, WXXM	17'4"	N/A	22'7"		(1)Fiber/Strand			
10	61940-25340	924W 194 N LIMESTONE, 3, Lexington, KY 40507	50, 2, WXXM	N/A	N/A	N/A		(2)Fiber/Strand			
11	62000-25271	925W 155 N MARTIN LUTHER KING BLVD, Lexi	50, 2, WXXM	N/A	N/A	N/A		(2)Fiber/Strand			
12	62632-24497	943W 150 DEWEESE ST, 203, Lexington, KY 40507	35, 5, WXXM	21'6"	N/A	26'9"		(2)Fiber/Strand			
13											
14											

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE PROCESSED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com.

Windstream OSP Construction Manager/Engineer Authorized Signature & Date:

1. ALL UNDERGROUND WILL BE STANDARD (2) 1-1/4" I.D. SDR-13.5 ROLLED DUCT UNLESS OTHERWISE SPECIFIED WITHIN DESIGN DRAWINGS OR APPROVED BY METRONET (MNT) CONSTRUCTION MANAGER. IF THERE IS NO DUCT / CONDUIT SYMBOL ALONG TRENCH LINE IN DESIGN, THE TRENCH FOOTAGE IS ONLY FOR REFERENCE FOR FUTURE GROWTH AND SHOULD NOT BE BUILT UNTIL A REVISION IS RELEASED.
2. ALL AERIAL STRAND WILL BE SHOWN IN DESIGN AS IN THE LEGEND (SOLID LINE WITH FOOTAGE). NON STRAND, OR BETWEEN DROP POLES WILL BE SHOWN IN DESIGN AS A SOLID LINE ONLY, WITHOUT FOOTAGE, AND SHALL NOT BE STRANDED UNLESS NOTED ON DRAWING FOR ANCHOR PLACEMENT.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES 72-HOURS PRIOR TO CONSTRUCTION. IN CASES OF WILLFUL OR CARELESS DESTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORATION WITH FINAL APPROVAL FROM METRONET CONSTRUCTION MANAGER.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL RAILROAD COMMUNICATION AND SIGNAL CABLES A MINIMUM OF 48-HOURS PRIOR TO CONSTRUCTION.
5. ALL HANDHOLES SHALL BE BURIED WITH THE COVER FLUSH TO THE GROUND ELEVATION.
6. SHORING MAY BE REQUIRED AND SHALL COMPLY WITH O.S.H.A. STANDARDS.
7. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE METRONET CONSTRUCTION MANAGER OF ANY ACCIDENTS. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE AND LOCAL SAFETY REQUIREMENTS INCLUDING THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970. THE CONTRACTOR SHALL ALWAYS EXERCISE CAUTION FOR THE PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO INITIATE, MAINTAIN AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS AND PROGRAMS IN CONNECTION WITH THE WORK, INCLUDING THE REQUIREMENTS FOR CONFINED SPACES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PROPERTY DAMAGE OR DISTURBED AREAS, BOTH RESIDENTIAL AND/OR COMMERCIAL DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATIONS TO EQUAL OR BETTER CONDITION THAN EXISTED BEFORE CONSTRUCTION. ADDITIONALLY, NON-RUBBER TIERED VEHICLES SHALL NOT BE MOVED ON OR ACROSS PUBLIC STREETS OR HIGHWAYS WITHOUT WRITTEN PERMISSION OF METRONET.
9. THE CONTRACTOR WILL BE RESPONSIBLE FOR DAILY WORK SITE CLEANUP. TRACKING OR SPILLING MUD, DIRT OR DEBRIS UPON STREETS, RESIDENTIAL OR COMMERCIAL DRIVES, SIDEWALKS OR BIKE PATHS IS PROHIBITED. ANY SUCH OCCURRENCE SHALL BE CLEANED UP IMMEDIATELY BY THE CONTRACTOR AT NO COST TO METRONET. IF THE CONTRACTOR FAILS TO REMOVE SUCH MUD, DIRT, DEBRIS, OR SPILLAGE, METRONET RESERVES THE RIGHT TO REMOVE THESE MATERIALS AND CLEAN AFFECTED AREAS, THE COST OF WHICH SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL FOLLOW ALL D.O.T. SAFETY REQUIREMENTS. IN ADDITION, THE FOLLOWING SUPPLEMENTAL REFERENCED SPECIFICATIONS SHALL BE OBSERVED:
 - 10.1 Occupational Safety and Health Code (OSHA) - (latest edition).
 - 10.2 Applicable power and telephone pole attachment agreements.
 - 10.3 Applicable city, county and state ordinances.
 - 10.4 National Electric Safety Code (latest edition).
 - 10.5 National Electric Code (latest edition).
 - 10.6 Applicable government agencies for safety and health for the work force.
 - 10.7 Manufacturers specifications.
11. THE CONTRACTOR SHALL TRIM ONLY THE LIMBS THAT INHIBIT FIBER OPTIC CABLE PLACEMENT AND IN ACCORDANCE WITH LOCAL GOVERNING AGENCY. ALL SIGNS, LANDSCAPING, STRUCTURES OR OTHER APPURTENANCES WITHIN THE RIGHT-OF-WAY WHICH IS DISTURBED OR DAMAGED DURING CONSTRUCTION SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF METRONET. THE COST OF THIS WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL PLACE BARRICADES AROUND OPEN TRENCHES AND EQUIPMENT.
13. NO ADDITIONAL CABLE CUTS WILL BE ADDED WITHOUT PRIOR APPROVAL OF THE METRONET CONSTRUCTION MANAGER. SHOULD THE FIBER WORK NEED TO BE CONTINUED TO THE NEXT DAY AND THE FIBER LEFT OVERNIGHT, THE SECURITY OF THE FIBER SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
14. ALL WORK TO BE PERFORMED IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY REGULATING GOVERNMENT AGENCY OR THE RIGHT OF WAY GRANTOR. MUNICIPAL, COUNTY, STATE OR FEDERAL REGULATIONS MAY ALTER CONSTRUCTION SPECIFICATIONS IN SOME AREAS. IF CONSTRUCTION SPECIFICATIONS ARE ALTERED FROM THESE STANDARDS, CONTRACTOR MUST REQUEST IN WRITING AND ALTERATIONS SHALL BE APPROVED BY METRONET IN ADVANCE.
15. THE OWNER RESERVES THE RIGHT TO CHANGE OR REVISE THE CONSTRUCTION SPECIFICATIONS TO ADAPT TO LOCAL CONDITIONS OR DATA NECESSARY TO SECURE COMPLETION OF THE WORK. IN SUCH CASE, THE CONTRACTOR SHALL BE NOTIFIED IN WRITING.
16. IN CASE OF DISCREPANCY OR OMISSIONS, METRONET SHALL BE CONSULTED FOR ADJUSTMENTS OF ANY COMPLICATIONS RESULTING FROM THE DISCREPANCY OR OMISSION.
17. THE CONTRACTOR'S WORK SHALL INCLUDE BUT IS NOT LIMITED TO, UNLOADING, HAULING, STORING, AND PROTECTING ALL METRONET FURNISHED MATERIAL FROM THE DELIVERY POINT THROUGH FINAL ACCEPTANCE OF THE WORK.
18. THE CONTRACTOR SHALL PROVIDE, CONSTRUCT AND MAINTAIN ALL ACCESS ROADS, ACCESS ROAD IMPROVEMENTS, FENCES AND GATES REQUIRED BY THE CONTRACTOR IN THE EXECUTION OF THE WORK.
19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOADING AND UNLOADING REQUIRED TO RETURN ANY MATERIALS TO METRONET. METRONET SHALL ISSUE SPECIFIC INSTRUCTIONS FOR THE RETURN OF THE MATERIAL BY THE CONTRACTOR.
20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A SUPERVISOR ON-SITE AT ALL TIMES. METRONET RESERVES THE RIGHT TO INSPECT THE WORK FOR COMPLIANCE AND DEFECTS.

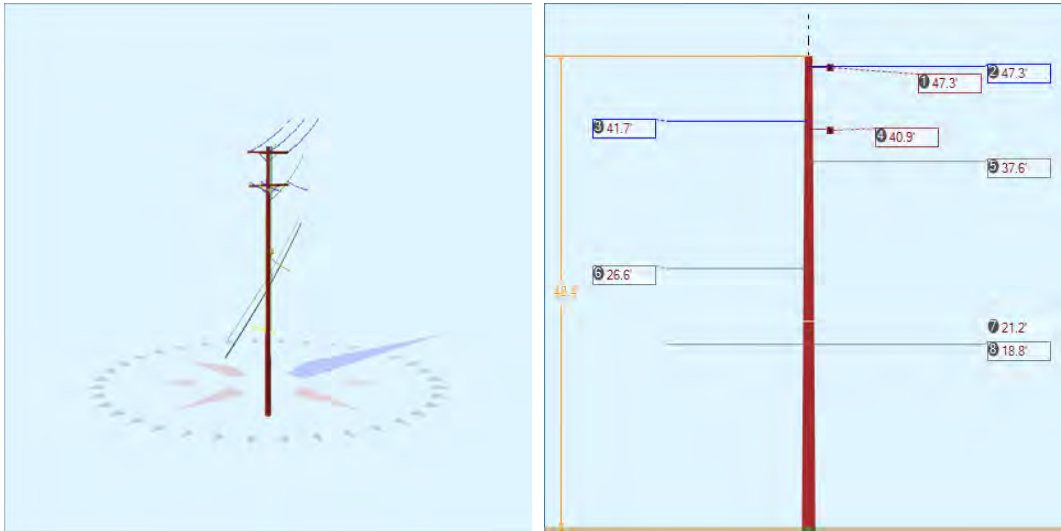
SYMBOL DESIGNATION LEGEND

FIBER & EQUIPMENT	AERIAL STRUCTURE
2X8 SPLITTER CASE BL00-X	POWER POLE
1X4 (1) TERMINAL BL 00-X00	POWER POLE W/TRANSFORMER
1X4 (2) TERMINAL BL 00-X00	JOINT USE POLE
1X4 (3) TERMINAL BL 00-X00	JOINT USE POLE W/TRANSFORMER
FIBER SPLICE XX01-XX00	DROP POLE
HIP CABINET XX01A_HIP	TELEPHONE POLE
LCP CABINET XX01	CATV POLE
SLACK LOOP	CONCRETE POLE
RING CUT PHYSICAL SPLICE BL00-X	STEEL POLE
PHYSICAL SPLICE ><	PUSH POLE
	DOWN GUY
	OVERHEAD GUY
	POLE TO POLE GUY
	SIDEWALK GUY

ADDRESSES	UNDERGROUND STRUCTURE
GOVERNMENT	RISER (Shown on Joint Use Pole)
SCHOOL	PEDESTAL
CHURCH	HANDHOLE
N/A	SMALL HANDHOLE
RESIDENTIAL COUNT W/ADDRESS 405	UTILITY BOX
RESIDENTIAL DUPLEX 405 407	NULL PEDESTAL (Ignore for construction - for design use only)
COMMERCIAL COUNT W/NAME & ADDRESS 000	SINGLE DUCT CONDUIT
MDU COUNT W/ADDRESS(ES) 4 119	DUAL DUCT CONDUIT
	TRIPLE DUCT CONDUIT
	QUAD DUCT CONDUIT

STRAND AND TRENCH	MISCELLANEOUS
AERIAL (TENSION SPAN) Footage	ROADS
AERIAL (SLACK SPAN) Footage	WORK POINTS
NEW / PROPOSED TRENCH Footage	RAILROADS
EXISTING INHERITED TRENCH Footage	

Pole Num:	906W - 27401	Pole Length / Class:	55 / 2	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.64	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	43.26	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.049077 Deg	Longitude:	-84.495276 Deg	Elevation:	866.151334455361		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	53.8	9.7
Groundline	52.6	0.0
Vertical	8.6	24.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	59,509	320.6
Groundline	76,410	320.2
GL Allowable	145,257	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 320.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,358	76.5	64,264	84.1	44.2	3,003	205	1	3,004	44.2
Comms	2	0.1	27	0.0	0.0	1	236	2	3	0.0
Pole	306	17.3	7,227	9.5	5.0	338	3,634	24	362	5.3
Crossarms	97	5.5	4,366	5.7	3.0	204	285	2	206	3.0
Insulators	12	0.7	526	0.7	0.4	25	78	1	25	0.4
Pole Load	1,775	100.0	76,410	100.0	52.6	3,570	4,437	30	3,600	52.9
Pole Reserve Capacity			68,847		47.4	3,230			3,200	47.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 320.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,370	77.2	64,790	84.8	44.6	3,027	264	2	3,029	44.5
Unknown, COMMUNICATION	2	0.1	27	0.0	0.0	1	255	2	3	0.0
Pole	306	17.3	7,227	9.5	5.0	338	3,634	24	362	5.3
<Undefined>	97	5.5	4,366	5.7	3.0	204	285	2	206	3.0
Totals:	1,775	100.0	76,410	100.0	52.6	3,570	4,437	30	3,600	52.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	47.29	18.54	0.5630	0.18	0.291	94.2	321.0	94.2	450	21,280	16	1	21,297
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	47.29	48.67	0.5630	0.18	0.291	94.2	321.0	94.2	450	21,280	6	1	21,287
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	47.29	48.67	0.5630	0.18	0.291	94.2	321.0	94.2	450	21,280	6	1	21,287
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	41.67	19.03	0.5630	0.06	0.291	15.0	120.0	15.0	25	-978	-8	21	-964
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	41.67	45.42	0.5630	0.06	0.291	15.0	120.0	15.0	25	-978	-14	21	-970
Primary	ACSR 4/0 AWG 6/1 PENGUIN	KU, UTILITY	41.67	45.42	0.5630	0.06	0.291	15.0	120.0	15.0	25	-978	6	21	-950
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.56	7.13	0.3980	0.12	0.145	94.2	321.0	94.3	100	3,755	17	1	3,773

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.55	7.79	0.3980	0.06	0.145	15.0	120.0	15.0	25	-623	-3	12	-614
											Totals:	64,038	28	79	64,144

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Overlashed Bundle	1/4" EHS	Unknown,	21.17	8.11	0.2500	0.07	0.121	49.2	142.3	49.2	800	-16,922	0	1	-16,921
		COMMUNICATION													
Overlashed Bundle	1/4" EHS	Unknown,	21.17	8.11	0.2500	0.25	0.121	94.2	321.0	94.2	800	16,931	-1	0	16,931
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.77	8.26	1.5000	0.69	0.900	49.2	142.3	49.2	2,000	-37,517	-2	1	-37,518
		COMMUNICATION													
Telco	TELE 1.5	Unknown,	18.77	8.26	1.5000	1.42	0.900	94.2	321.0	94.2	2,000	37,538	-3	1	37,536
		COMMUNICATION													
											Totals:	30	-6	3	27

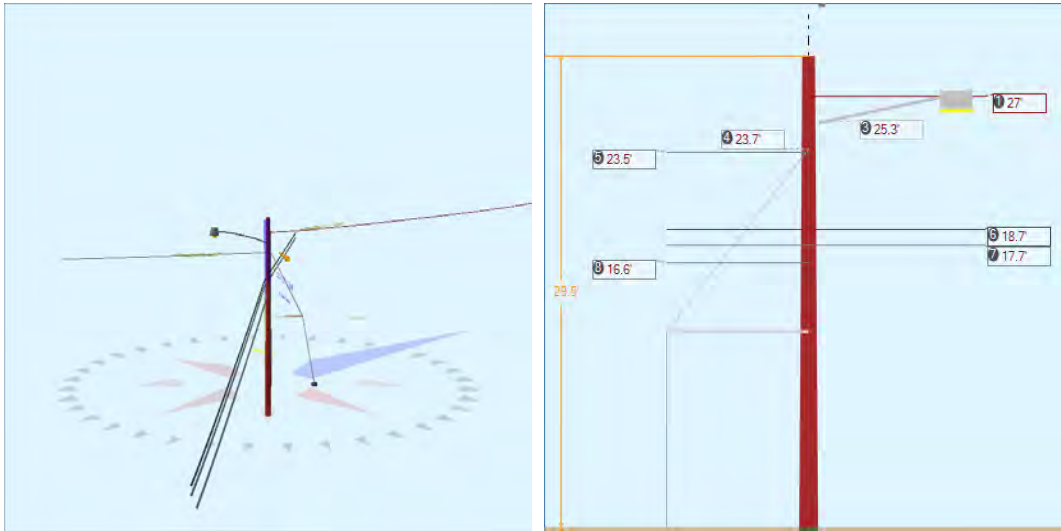
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	47.29	5.79	320.0	320.0	50.00	4.50	3.50	96.00	0	3,177	3,177	
Normal	Crossarm	40.86	6.18	120.0	120.0	50.00	4.50	3.50	96.00	-46	1,226	1,181	
										Totals:	-46	4,404	4,358

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	47.29	0.00	320.0	0.0	3.00	3.80	12.75	9	111	120
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	47.29	45.00	42.7	0.0	3.00	3.80	12.75	9	111	120
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	47.29	-45.00	237.3	0.0	3.00	3.80	12.75	9	111	120
Pin	Pin Insulator - 5 kV	KU, UTILITY	41.05	18.00	191.1	0.0	6.00	3.50	7.50	-11	53	41
Pin	Pin Insulator - 5 kV	KU, UTILITY	41.05	45.00	202.2	0.0	6.00	3.50	7.50	-20	53	32
Pin	Pin Insulator - 5 kV	KU, UTILITY	41.05	-45.00	37.8	0.0	6.00	3.50	7.50	9	53	62
Spool	Spool Insulator - 25 kV	KU, UTILITY	37.56	0.00	296.6	296.6	2.00	3.00	3.19	2	17	20
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.55	0.00	120.0	120.0	2.00	3.00	3.19	-2	12	10
Bolt	Three Bolt	Unknown, COMMUNICATION	21.17	0.00	228.2	138.2	5.00	3.00	0.00	0	0	0

Bolt	Three Bolt	Unknown, COMMUNICATION	18.77	0.00	228.2	138.2	5.00	3.00	0.00	0	0	0
Totals:										3	521	525

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.42	33.20	12.80	17.56	7.96	13.78	1.60e+6	60.00	57.00	48.36	51,442	515.99	11.63

Pole Num:	907W - NT	Pole Length / Class:	35 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.48	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	36.71	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.049032 Deg	Longitude:	-84.495206 Deg	Elevation:	895.789910630883		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	56.3	0.0 122.0
Groundline	56.3	0.0 122.0
Vertical	1.3	19.2 221.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	49,447	139.4 122.0
Groundline	49,447	139.4 122.0
GL Allowable	88,740	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	8.1	41.8		6.8	122.0	10.0	230.0
? EHS 1/4 (Sidewalk)			23.7	22.6	122.0	36.7	230.0
? Sidewalk Strut	6.0	41.8	12.3	16.3	122.0	24.0	230.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 139.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-104	-3.5	-2,803	-5.7	-3.2	-217	26	0	-216	-3.2
Comms	2,870	95.9	49,050	99.2	55.3	3,792	486	5	3,796	55.8
GuyBraces	-14	-0.5	-1,048	-2.1	-1.2	-81	1,812	17	-64	-0.9
Pole	161	5.4	2,476	5.0	2.8	191	1,792	17	208	3.1
Streetlights	27	0.9	856	1.7	1.0	66	142	1	67	1.0
Risers	51	1.7	899	1.8	1.0	70	51	0	70	1.0
Insulators	0	0.0	17	0.0	0.0	1	42	0	2	0.0
Pole Load	2,992	100.0	49,447	100.0	55.7	3,822	4,351	41	3,863	56.8
Pole Reserve Capacity			39,293		44.3	2,978			2,937	43.2

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 139.4°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	-26	-0.9	-1,037	-2.1	-1.2	-80	224	2	-78	-1.1
Unknown, COMMUNICATION	2,856	95.5	48,008	97.1	54.1	3,711	2,336	22	3,733	54.9
Pole	161	5.4	2,476	5.0	2.8	191	1,792	17	208	3.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	2,992	100.0	49,447	100.0	55.7	3,822	4,351	41	3,863	56.8

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	TRIPLEX 4 AWG	KU, UTILITY	26.99	6.64	0.6800	0.62	0.164	61.3	11.4	61.3	150	-3,239	-9	420	-2,828
Totals:											-3,239	-9	420	-2,828	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.50	6.86	0.6570	0.40	0.190	34.3	214.3	34.3	750	5,961	2	262	6,225
CATV	CATV 1.0	Unknown, COMMUNICATION	18.67	7.16	1.3300	1.36	0.337	103.2	138.9	103.2	925	22,448	-1	-3	22,444
CATV	CATV 1.0	Unknown, COMMUNICATION	18.67	7.16	1.3300	0.61	0.337	49.2	322.3	49.2	925	-22,420	0	9	-22,411
Telco	TELE 1.5	Unknown, COMMUNICATION	17.67	7.23	1.5000	1.58	0.900	103.2	138.9	103.2	2,000	45,936	-2	-3	45,932
Telco	TELE 1.5	Unknown, COMMUNICATION	17.67	7.23	1.5000	0.69	0.900	49.2	322.3	49.2	2,000	-45,878	-1	9	-45,870
Telco	TELE 1.5	Unknown, COMMUNICATION	16.57	7.30	1.5000	1.58	0.900	103.2	138.9	103.2	2,000	43,076	86	-2	43,160
Totals:											49,123	84	272	49,480	

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 8 ft. Arm	KU, UTILITY	25.34	4.24	218.0	218.0	75.00	24.00	20.00	3.00	96.00	172	691	863
Totals:											172	691	863

Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Riser 360.0°	KU, UTILITY	26.99	5.94	360.0	360.0	26.99	323.88	4.00	4.00	323.88	-10	917	907
Totals:											-10	917	907

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	KU, UTILITY	26.99	0.00	11.4	11.4	2.00	3.00	3.19	-1	12	11	
Bolt	Unknown, COMMUNICATION	23.50	0.00	214.3	304.3	5.00	3.00	0.00	1	0	1	
Bolt	Unknown, COMMUNICATION	18.67	0.00	230.6	320.6	5.00	3.00	0.00	0	0	0	
Bolt	Unknown, COMMUNICATION	17.67	0.00	230.6	320.6	5.00	3.00	0.00	0	0	0	
Bolt	Unknown, COMMUNICATION	16.57	0.00	138.9	138.9	5.00	3.00	0.00	6	0	6	
Totals:										6	12	18

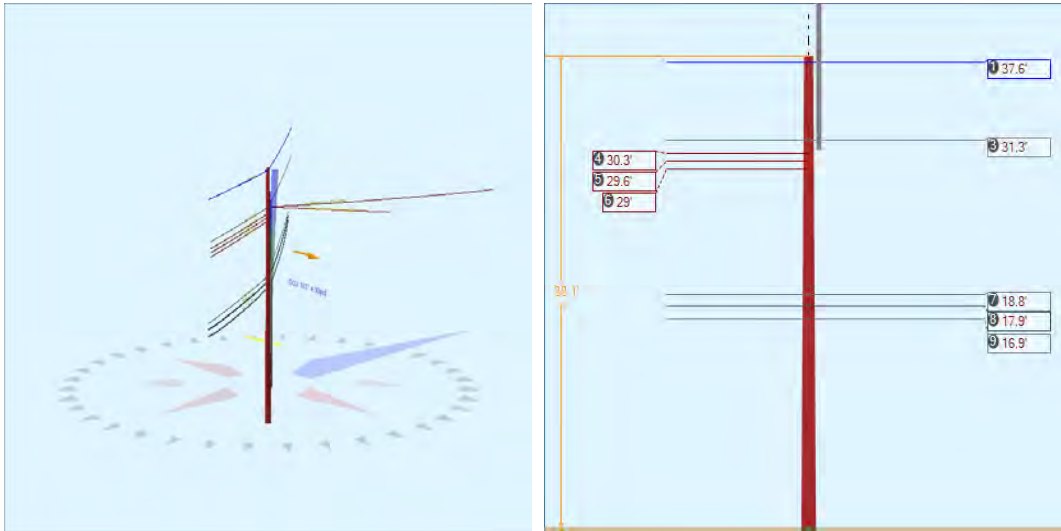
Guy Wire and Brace		Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 1/4	Sidewalk	Unknown, COMMUNICATION	23.69	0.00	8.13	0.25	75.00	41.8	61.9	0.121	23.69	0.47

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension*2 (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 1/4	Sidewalk	2.30e+7	6,650	0.90	5,985	700	2,194	1,994	1,350	1,190	637	-84	-1,058
Totals:										1,190	637	-84	-1,058

Anchor/Rod Load Summary		Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor			18.00	8.13	41.8	20,000	1.00	20,000	1,994	1,350	10.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.23	33.12	10.88	8.80	7.96	11.69	1.60e+6	60.00	57.00	29.52	346,795	3347.30	76.92

Pole Num:	909W - 61628-26007	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.85	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.18	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.048629 Deg	Longitude:	-84.494782 Deg	Elevation:	853.594706394055		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	30.0	102.7
Groundline	30.0	102.7
Vertical	5.1	102.7

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	27,356	102.7
Groundline	27,356	102.7
GL Allowable	92,243	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 111.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	743	73.5	22,077	80.7	23.9	1,633	144	1	1,634	24.0
Comms	-1	-0.1	-104	-0.4	-0.1	-8	287	3	-5	-0.1
Pole	211	20.8	4,024	14.7	4.4	298	2,217	20	318	4.7
Risers	51	5.1	1,120	4.1	1.2	83	62	1	83	1.2
Insulators	7	0.7	239	0.9	0.3	18	59	1	18	0.3
Pole Load	1,011	100.0	27,356	100.0	29.7	2,023	2,768	25	2,049	30.1
Pole Reserve Capacity			64,887		70.3	4,777			4,751	69.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 111.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	637	63.0	18,342	67.1	19.9	1,357	199	2	1,358	20.0
<Undefined>	164	16.2	5,103	18.7	5.5	377	37	0	378	5.6
Unknown, COMMUNICATION	-5	-0.5	-165	-0.6	-0.2	-12	219	2	-10	-0.2
AT&T, COMMUNICATION	5	0.5	52	0.2	0.1	4	96	1	5	0.1
Pole	211	20.8	4,024	14.7	4.4	298	2,217	20	318	4.7
Totals:	1,011	100.0	27,356	100.0	29.7	2,023	2,768	25	2,049	30.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.64	16.44	0.3980	0.37	0.145	34.3	149.0	34.3	250	7,481	3	148	7,632
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.64	16.44	0.3980	0.93	0.145	75.8	318.8	75.8	250	-8,374	-7	201	-8,180
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.33	6.56	0.3980	0.37	0.145	34.3	149.0	34.3	250	6,227	5	123	6,356
Secondary	TRIPLEX 2 AWG		31.33	6.56	0.8060	0.45	0.248	47.0	17.7	47.0	250	-535	-13	557	10
Secondary	TRIPLEX 2 AWG		31.33	6.56	0.8060	0.19	0.248	21.0	61.2	21.0	250	4,988	-6	128	5,110
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	31.33	6.56	0.3980	0.93	0.145	75.8	318.8	75.8	250	-6,970	-12	167	-6,815
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.26	6.63	0.3980	0.37	0.145	34.3	149.0	34.3	250	6,014	5	119	6,139

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.65	6.66	0.3980	0.37	0.145	34.3	149.0	34.3	250	5,892	5	117	6,014
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.00	6.70	0.3980	0.37	0.145	34.3	149.0	34.3	250	5,764	5	114	5,884
Totals:												20,489	-14	1,676	22,151

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.84	7.30	0.6570	0.55	0.190	34.3	149.0	34.3	150	2,247	-5	96	2,338
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	18.84	7.30	0.6570	1.46	0.190	75.8	318.8	75.8	150	-2,515	-11	130	-2,396
CATV	CATV 1.0	AT&T, COMMUNICATION	17.91	7.36	1.3300	0.55	0.337	34.3	149.0	34.3	150	2,136	-9	144	2,271
CATV	CATV 1.0	AT&T, COMMUNICATION	17.91	7.36	1.3300	1.88	0.337	75.8	318.8	75.9	150	-2,391	-19	195	-2,215
Telco	TELE 1.5	Unknown,	16.87	7.42	1.5000	0.75	0.900	34.3	149.0	34.3	250	3,352	-16	148	3,485
Telco	TELE 1.5	Unknown,	16.87	7.42	1.5000	2.84	0.900	75.8	318.8	76.1	250	-3,752	-34	201	-3,586
Totals:												-923	-94	913	-104

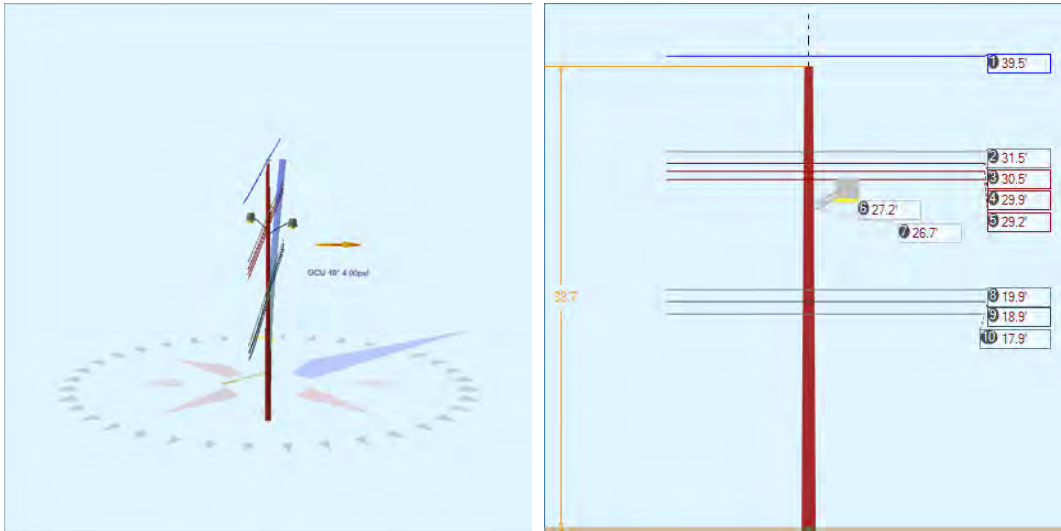
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Riser 60.0°	Riser	KU, UTILITY	32.71	6.09	60.0	60.0	32.71	392.55	4.00	4.00	392.55	10	1,114	1,124
Totals:												10	1,114	1,124

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.64	0.00	149.0	149.0	3.00	3.80	12.75	6	88	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	37.64	0.00	318.8	318.8	3.00	3.80	12.75	-7	88	81
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.33	0.00	143.9	143.9	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.33	0.00	318.8	318.8	2.00	3.00	3.19	-2	14	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.26	0.00	149.0	149.0	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.65	0.00	149.0	149.0	2.00	3.00	3.19	2	14	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.00	0.00	149.0	149.0	2.00	3.00	3.19	2	13	15

Bolt	Three Bolt	Unknown, COMMUNICATION	18.84	0.00	233.9	143.9	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	AT&T, COMMUNICATION	17.91	0.00	233.9	143.9	5.00	3.00	0.00	-3	0	-3
Bolt	Three Bolt	Unknown, COMMUNICATION	16.87	0.00	233.9	143.9	5.00	3.00	0.00	-3	0	-3
Totals:										-5	245	240

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	17.94	32.69	11.14	12.07	7.32	11.84	1.60e+6	60.00	57.00	38.15	54,792	542.78	19.61

Pole Num:	910W - NT	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.33	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.38	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.048563 Deg	Longitude:	-84.494717 Deg	Elevation:	843.715839468766		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	13.4	0.0
Groundline	13.4	0.0
Vertical	5.7	18.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,209	47.9
Groundline	12,209	47.9
GL Allowable	93,690	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 47.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	121	23.5	3,971	32.5	4.2	286	141	1	287	4.2
Comms	129	25.2	2,584	21.2	2.8	186	223	2	188	2.8
Pole	217	42.3	4,248	34.8	4.5	306	2,262	20	326	4.8
Streetlights	40	7.7	1,141	9.4	1.2	82	171	2	84	1.2
Insulators	7	1.3	264	2.2	0.3	19	68	1	20	0.3
Pole Load	513	100.0	12,209	100.0	13.0	878	2,865	26	904	13.3
Pole Reserve Capacity			81,481		87.0	5,922			5,896	86.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 47.9°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	167	32.5	5,359	43.9	5.7	385	351	3	389	5.7
Unknown, COMMUNICATION	129	25.2	2,602	21.3	2.8	187	251	2	189	2.8
Pole	217	42.3	4,248	34.8	4.5	306	2,262	20	326	4.8
Totals:	513	100.0	12,209	100.0	13.0	878	2,865	26	904	13.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	39.54	0.00	0.3980	0.59	0.145	51.1	138.6	51.1	250	-122	0	529	407
Primary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	39.54	0.00	0.3980	0.38	0.145	34.3	319.0	34.3	250	191	0	355	547
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	31.52	6.58	0.3980	0.59	0.145	51.1	138.6	51.1	250	-97	9	422	333
Neutral	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	31.52	6.58	0.3980	0.38	0.145	34.3	319.0	34.3	250	152	6	283	442
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	30.54	6.64	0.3980	0.59	0.145	51.1	138.6	51.1	250	-94	9	409	323
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	30.54	6.64	0.3980	0.38	0.145	34.3	319.0	34.3	250	148	6	274	428
Secondary	ACSR 1/0 AWG 6/1 RAVEN KU, UTILITY	29.86	6.68	0.3980	0.59	0.145	51.1	138.6	51.1	250	-92	9	400	317

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.86	6.68	0.3980	0.38	0.145	34.3	319.0	34.3	250	144	6	268	419
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.18	6.72	0.3980	0.59	0.145	51.1	138.6	51.1	250	-90	9	390	310
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.18	6.72	0.3980	0.38	0.145	34.3	319.0	34.3	250	141	6	262	409
Totals:											280	62	3,592	3,935	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.92	7.27	0.6570	0.88	0.190	51.1	138.6	51.1	150	-37	14	343	320
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.92	7.27	0.6570	0.55	0.190	34.3	319.0	34.3	150	58	9	230	298
CATV	CATV 1.0	Unknown,	18.93	7.33	1.3300	0.98	0.337	51.1	138.6	51.1	150	-35	25	516	506
CATV	CATV 1.0	Unknown,	18.93	7.33	1.3300	0.55	0.337	34.3	319.0	34.3	150	55	16	346	418
Telco	TELE 1.5	Unknown,	17.90	7.39	1.5000	1.02	0.900	51.1	138.6	51.1	450	-100	43	533	477
Telco	TELE 1.5	Unknown,	17.90	7.39	1.5000	0.60	0.900	34.3	319.0	34.3	450	156	29	358	543
Totals:											97	136	2,328	2,561	

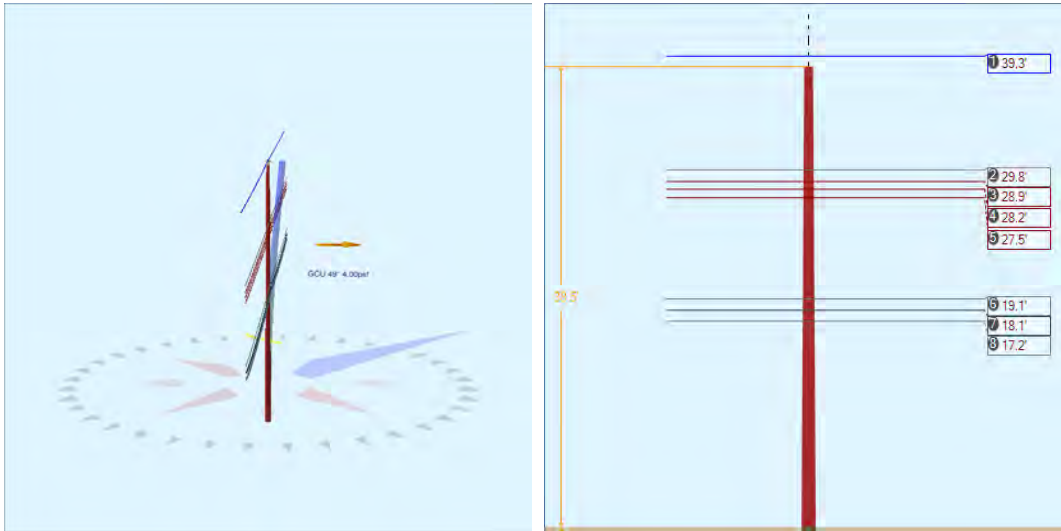
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 3 ft. Arm	KU, UTILITY	27.21	4.34	270.0	270.0	45.00	24.00	20.00	3.00	36.00	-177	540	362
General	Streetlight - 3 ft. Arm	KU, UTILITY	26.71	4.37	46.0	46.0	45.00	24.00	20.00	3.00	36.00	239	530	769
Totals:											62	1,069	1,131	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.67	0.00	0.0	0.0	13.00	9.00	10.50	0	180	180
Spool	Spool Insulator - 25 kV	KU, UTILITY	31.52	0.00	48.8	318.8	2.00	3.00	3.19	2	15	17
Spool	Spool Insulator - 25 kV	KU, UTILITY	30.54	0.00	48.8	318.8	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.86	0.00	48.8	318.8	2.00	3.00	3.19	2	14	16

Spool	Spool Insulator - 25 kV	KU, UTILITY	29.18	0.00	48.8	318.8	2.00	3.00	3.19	2	14	16
Bolt	Three Bolt	Unknown, COMMUNICATION	19.92	0.00	48.8	318.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.93	0.00	48.8	318.8	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.90	0.00	48.8	318.8	5.00	3.00	0.00	6	0	6
Totals:										26	236	262

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.80	32.81	11.17	12.50	7.32	11.90	1.60e+6	60.00	57.00	38.67	50,322	502.56	17.54

Pole Num:	911W - 61680-25956	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	6.53	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.30	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.048458 Deg	Longitude:	-84.494618 Deg	Elevation:	852.557896928219		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	13.5	48.6
Groundline	13.5	48.6
Vertical	5.1	48.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	12,261	48.6
Groundline	12,261	48.6
GL Allowable	93,138	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 48.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	148	27.8	4,678	38.2	5.0	338	181	2	340	5.0
Comms	162	30.5	3,120	25.4	3.4	226	286	3	228	3.4
Pole	215	40.5	4,203	34.3	4.5	304	2,245	20	324	4.8
Insulators	7	1.2	260	2.1	0.3	19	68	1	19	0.3
Pole Load	532	100.0	12,261	100.0	13.2	887	2,780	25	912	13.4
Pole Reserve Capacity			80,877		86.8	5,913			5,888	86.6

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 48.5°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	155	29.0	4,921	40.1	5.3	356	220	2	358	5.3
Unknown, COMMUNICATION	162	30.5	3,137	25.6	3.4	227	314	3	230	3.4
Pole	215	40.5	4,203	34.3	4.5	304	2,245	20	324	4.8
Totals:	532	100.0	12,261	100.0	13.2	887	2,780	25	912	13.4

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.35	0.00	0.3980	0.69	0.145	58.6	138.4	58.6	250	22	0	604	627
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.35	0.00	0.3980	0.59	0.145	51.1	318.6	51.1	250	12	0	527	539
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.83	6.67	0.3980	0.69	0.145	58.6	138.4	58.6	250	17	11	458	486
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.83	6.67	0.3980	0.59	0.145	51.1	318.6	51.1	250	9	9	399	418
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.88	6.73	0.3980	0.69	0.145	58.6	138.4	58.6	250	16	11	443	470
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.88	6.73	0.3980	0.59	0.145	51.1	318.6	51.1	250	9	9	386	405
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.24	6.77	0.3980	0.69	0.145	58.6	138.4	58.6	250	16	11	433	460
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.24	6.77	0.3980	0.59	0.145	51.1	318.6	51.1	250	9	9	378	396
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.50	6.81	0.3980	0.69	0.145	58.6	138.4	58.6	250	16	11	422	449
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	27.50	6.81	0.3980	0.59	0.145	51.1	318.6	51.1	250	8	10	368	386
										Totals:	134	81	4,419	4,634	

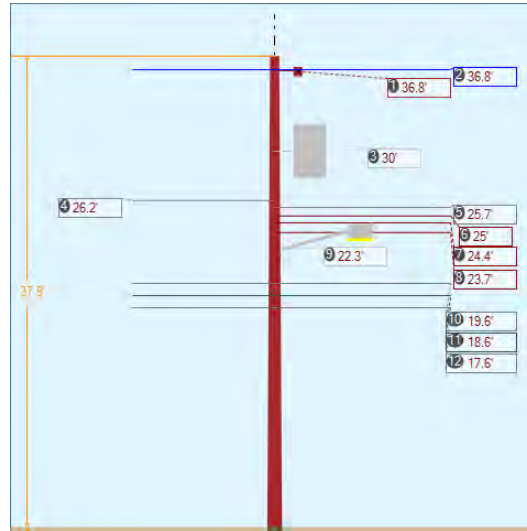
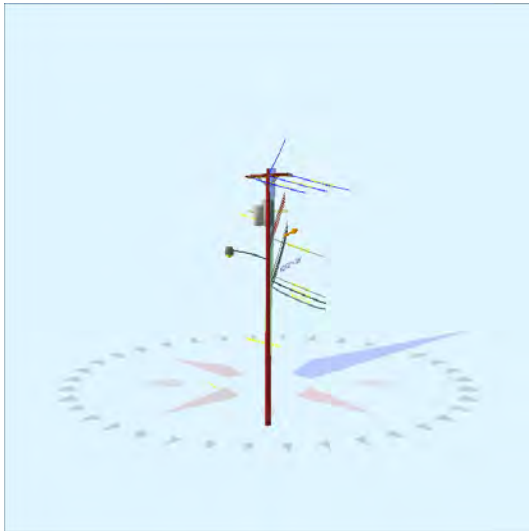
Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.08	7.31	0.6570	1.05	0.190	58.6	138.4	58.6	150	7	16	377	400
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	19.08	7.31	0.6570	0.88	0.190	51.1	318.6	51.1	150	3	14	329	346

CATV	CATV 1.0	Unknown, COMMUNICATION	18.12	7.36	1.3300	1.22	0.337	58.6	138.4	58.7	150	6	28	567	601
CATV	CATV 1.0	Unknown, COMMUNICATION	18.12	7.36	1.3300	0.98	0.337	51.1	318.6	51.1	150	3	25	494	522
Telco	TELE 1.5	Unknown, COMMUNICATION	17.21	7.42	1.5000	1.24	0.900	58.6	138.4	58.6	450	18	50	588	655
Telco	TELE 1.5	Unknown, COMMUNICATION	17.21	7.42	1.5000	1.02	0.900	51.1	318.6	51.1	450	9	43	513	565
Totals:											47	176	2,868	3,090	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	38.47	0.00	0.0	0.0	13.00	9.00	10.50	0	179	179
Spool	Spool Insulator - 25 kV	KU, UTILITY	29.83	0.00	48.5	318.5	2.00	3.00	3.19	2	14	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.88	0.00	48.5	318.5	2.00	3.00	3.19	2	13	16
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.24	0.00	48.5	318.5	2.00	3.00	3.19	2	13	15
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.50	0.00	48.5	318.5	2.00	3.00	3.19	2	13	15
Bolt	Three Bolt	Unknown, COMMUNICATION	19.08	0.00	48.5	318.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.12	0.00	48.5	318.5	5.00	3.00	0.00	6	0	6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.21	0.00	48.5	318.5	5.00	3.00	0.00	6	0	6
Totals:										26	232	258

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	18.16	32.72	11.17	12.17	7.32	11.88	1.60e+6	60.00	57.00	38.47	53,990	545.03	19.61

Pole Num:	912W - 61726-25911	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	7.16	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.07	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.048334 Deg	Longitude:	-84.494417 Deg	Elevation:	873.251246810597		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	59.6	0.0
Groundline	59.6	0.0
Vertical	20.6	24.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	53,850	333.2
Groundline	53,850	333.2
GL Allowable	91,397	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 333.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	1,210	53.0	30,209	56.1	33.1	2,252	125	1	2,253	33.1
Comms	681	29.9	12,336	22.9	13.5	919	206	2	921	13.5
PowerEquipments	107	4.7	5,405	10.0	5.9	403	2,346	21	424	6.2
Pole	211	9.2	4,008	7.4	4.4	299	2,190	20	319	4.7
Crossarms	35	1.6	1,300	2.4	1.4	97	190	2	99	1.5
Streetlights	25	1.1	184	0.3	0.2	14	114	1	15	0.2
Insulators	12	0.5	408	0.8	0.5	30	70	1	31	0.5
Pole Load	2,281	100.0	53,850	100.0	58.9	4,013	5,241	48	4,061	59.7
Pole Reserve Capacity			37,547		41.1	2,787			2,739	40.3

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 333.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	1,354	59.3	36,198	67.2	39.6	2,698	2,627	24	2,722	40.0
Unknown, COMMUNICATION	681	29.9	12,345	22.9	13.5	920	234	2	922	13.6
Pole	211	9.2	4,008	7.4	4.4	299	2,190	20	319	4.7
<Undefined>	35	1.6	1,300	2.4	1.4	97	190	2	99	1.5
Totals:	2,281	100.0	53,850	100.0	58.9	4,013	5,241	48	4,061	59.7

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	36.75	16.48	0.3980	0.68	0.145	58.6	318.4	58.6	250	11,545	6	41	11,592
Primary	#2 COPPER 7 STRAND	KU, UTILITY	36.77	18.22	0.2922	0.01	0.205	20.2	109.6	20.2	100	-3,459	-2	84	-3,376
Primary	#2 COPPER 7 STRAND	KU, UTILITY	36.77	48.55	0.2922	0.01	0.205	20.2	109.6	20.2	100	-3,459	-2	84	-3,377
Primary	#2 COPPER 7 STRAND	KU, UTILITY	36.77	48.55	0.2922	0.01	0.205	20.2	109.6	20.2	100	-3,459	1	84	-3,374
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.25	6.85	0.3980	0.18	0.145	20.2	109.6	20.2	100	-2,470	-3	68	-2,404

Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.69	6.88	0.3980	0.68	0.145	58.6	318.4	58.6	250	8,070	11	29	8,109
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.01	6.92	0.3980	0.68	0.145	58.6	318.4	58.6	250	7,856	11	28	7,895
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	24.44	6.95	0.3980	0.68	0.145	58.6	318.4	58.6	250	7,679	11	27	7,718
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	23.69	7.00	0.3980	0.68	0.145	58.6	318.4	58.6	250	7,441	11	26	7,479
Totals:											29,745	43	473	30,262	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.59	7.24	0.6570	0.23	0.190	20.2	109.6	20.2	100	-1,843	3	66	-1,774
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.59	7.24	0.6570	0.69	0.190	58.6	318.4	58.6	150	3,692	8	28	3,728
CATV	CATV 1.0	Unknown,	18.61	7.30	1.3300	0.24	0.337	20.2	109.6	20.2	100	-1,750	5	99	-1,647
CATV	CATV 1.0	Unknown,	18.61	7.30	1.3300	0.73	0.337	58.6	318.4	58.7	150	3,507	14	42	3,563
Telco	TELE 1.5	Unknown,	17.63	7.36	1.5000	0.27	0.900	20.2	109.6	20.3	100	-1,658	8	102	-1,548
Telco	TELE 1.5	Unknown,	17.63	7.36	1.5000	0.91	0.900	58.6	318.4	58.6	450	9,968	24	44	10,036
Totals:											11,915	61	381	12,358	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-75KVA	KU, UTILITY	30.04	23.12	315.0	315.0	870.00	52.00	--	26.00	--	3,025	1,973	4,998
Transformer	1PH-25KVA	KU, UTILITY	30.04	21.12	200.0	200.0	365.00	39.00	--	22.00	--	-836	1,252	416
Totals:											2,189	3,226	5,415	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm		36.77	5.47	109.6	109.6	50.00	4.50	3.50	96.00	0	1,302	1,302
Totals:											0	1,302	1,302

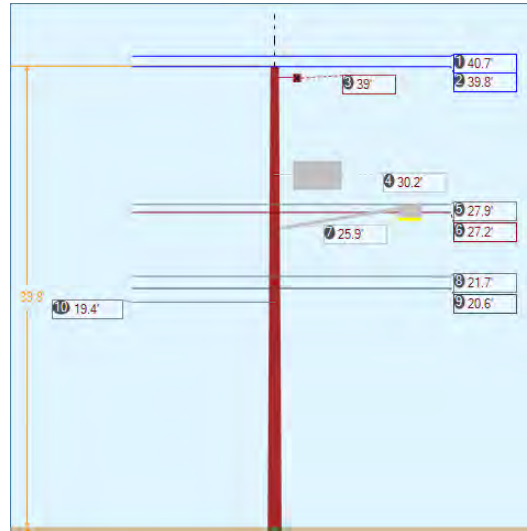
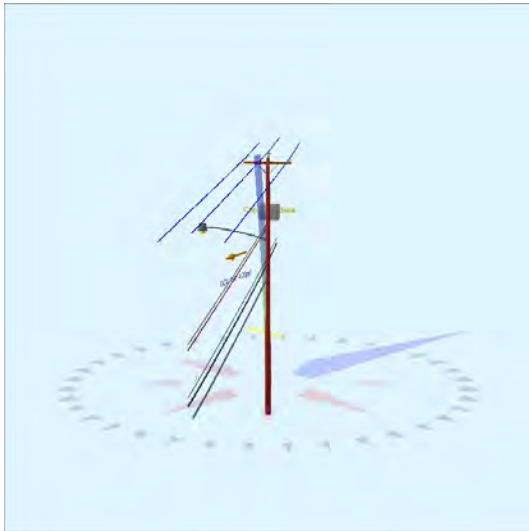
Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)

General	Streetlight - 6 ft. Arm	KU, UTILITY	22.34	4.58	200.0	200.0	60.00	24.00	20.00	3.00	72.00	-376	560	185
Totals:												-376	560	185

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend	Deadend 12.75"	KU, UTILITY	36.75	0.00	318.4	318.4	3.00	3.80	12.75	8	87	94
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.77	0.00	109.6	0.0	3.00	3.80	12.75	-6	87	80
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.77	45.00	192.7	0.0	3.00	3.80	12.75	-21	87	66
Deadend	Deadend Insulator - 15 kV	KU, UTILITY	36.77	-45.00	26.6	0.0	3.00	3.80	12.75	8	87	95
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.25	0.00	109.6	109.6	2.00	3.00	3.19	-2	12	11
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.69	0.00	318.4	318.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.01	0.00	318.4	318.4	2.00	3.00	3.19	2	12	14
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.44	0.00	318.4	318.4	2.00	3.00	3.19	2	11	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	23.69	0.00	318.4	318.4	2.00	3.00	3.19	2	11	13
Bolt	Three Bolt	Unknown, COMMUNICATION	19.59	0.00	34.0	304.0	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	18.61	0.00	34.0	304.0	5.00	3.00	0.00	3	0	3
Bolt	Three Bolt	Unknown, COMMUNICATION	17.63	0.00	34.0	304.0	5.00	3.00	0.00	3	0	3
Totals:										4	404	408

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	24.79	33.73	10.81	18.38	7.32	11.81	1.60e+6	60.00	57.00	37.84	25,415	254.41	4.85

Pole Num:	921W - 61757-25555	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.18	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.81	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.047434 Deg	Longitude:	-84.494256 Deg	Elevation:	864.057136619534		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	50.3	0.0
Groundline	50.3	0.0
Vertical	11.6	22.8

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	48,297	154.1
Groundline	48,297	154.1
GL Allowable	96,958	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 154.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	36	1.5	1,337	2.8	1.4	94	143	1	95	1.4
Comms	1,964	82.2	38,364	79.4	39.6	2,685	247	2	2,688	39.5
GenericEquipments	95	4.0	1,403	2.9	1.5	98	817	7	105	1.6
Pole	223	9.3	4,439	9.2	4.6	311	2,365	21	332	4.9
Crossarms	31	1.3	1,242	2.6	1.3	87	95	1	88	1.3
Streetlights	32	1.3	1,182	2.5	1.2	83	162	1	84	1.2
Insulators	8	0.3	329	0.7	0.3	23	84	1	24	0.3
Pole Load	2,389	100.0	48,297	100.0	49.8	3,381	3,911	34	3,415	50.2
Pole Reserve Capacity			48,661		50.2	3,419			3,385	49.8

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 154.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	76	3.2	2,840	5.9	2.9	199	359	3	202	3.0
Unknown, COMMUNICATION	1,964	82.2	38,373	79.5	39.6	2,686	275	2	2,688	39.5
<Undefined>	126	5.3	2,645	5.5	2.7	185	912	8	193	2.8
Pole	223	9.3	4,439	9.2	4.6	311	2,365	21	332	4.9
Totals:	2,389	100.0	48,297	100.0	49.8	3,381	3,911	34	3,415	50.2

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.70	0.00	0.3250	0.08	0.107	82.5	140.9	82.5	1,684	66,738	0	63	66,801
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	40.70	0.00	0.3250	0.01	0.107	25.5	320.0	25.5	1,684	-66,483	0	22	-66,461
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	45.33	0.3250	0.08	0.107	82.5	140.9	82.5	1,684	65,223	30	61	65,314
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	45.33	0.3250	0.01	0.107	25.5	320.0	25.5	1,684	-64,974	9	21	-64,944
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	45.33	0.3250	0.08	0.107	82.5	140.9	82.5	1,684	65,223	-10	61	65,274

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.78	45.33	0.3250	0.01	0.107	25.5	320.0	25.5	1,684	-64,974	-3	21	-64,956
Neutral	#4 COPPER SOLID	KU, UTILITY	27.90	6.87	0.2043	0.14	0.126	82.5	140.9	82.5	982	26,665	3	37	26,705
Neutral	#4 COPPER SOLID	KU, UTILITY	27.90	6.87	0.2043	0.01	0.126	25.5	320.0	25.5	982	-26,563	1	13	-26,550
Secondary	#4 COPPER SOLID	KU, UTILITY	27.21	6.91	0.2043	0.14	0.126	82.5	140.9	82.5	982	26,005	3	36	26,043
Secondary	#4 COPPER SOLID	KU, UTILITY	27.21	6.91	0.2043	0.01	0.126	25.5	320.0	25.5	982	-25,905	1	12	-25,892
Totals:											955	33	347	1,335	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.68	7.23	0.6570	1.01	0.190	82.5	140.9	82.5	750	15,825	5	47	15,877
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	21.68	7.23	0.6570	0.29	0.190	25.5	320.0	25.5	750	-15,765	2	16	-15,747
CATV	CATV 1.0	Unknown,	20.64	7.30	1.3300	1.05	0.337	82.5	140.9	82.5	925	18,582	9	71	18,662
CATV	CATV 1.0	Unknown,	20.64	7.30	1.3300	0.31	0.337	25.5	320.0	25.5	925	-18,511	3	24	-18,484
Telco	TELE 1.5	Unknown,	19.44	7.37	1.5000	1.22	0.900	82.5	140.9	82.5	2,000	37,841	68	73	37,981
Totals:											37,972	87	230	38,290	

GenericEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Box	Capacitor Bank	30.21	22.23	320.0	0.0	430.00	30.00	30.00	--	42.00	-1,468	2,868	1,401
Totals:											-1,468	2,868	1,401

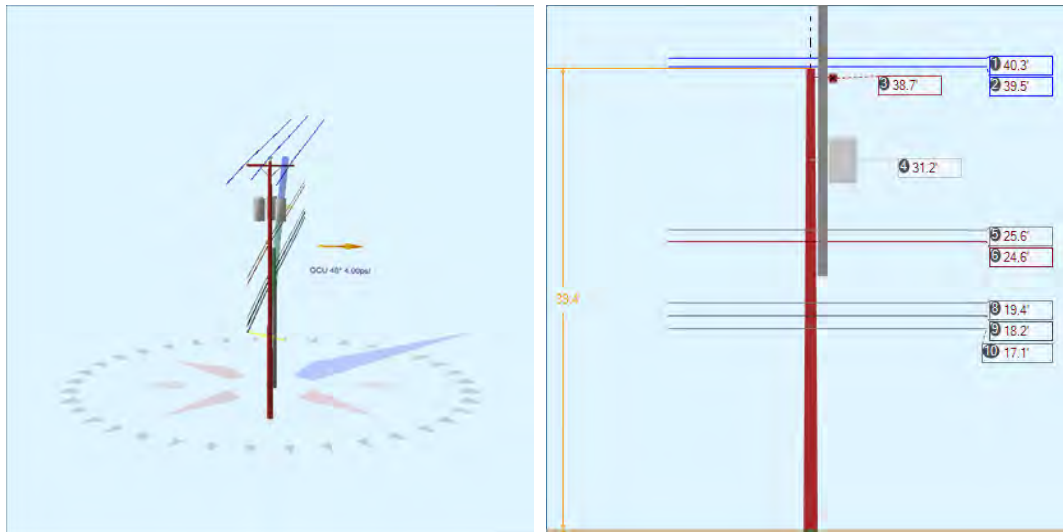
Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.96	5.46	140.5	140.5	50.00	4.50	3.50	96.00	42	1,197	1,239	
Totals:											42	1,197	1,239

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 10 ft. Arm	KU, UTILITY	25.86	4.49	227.0	227.0	85.00	24.00	20.00	3.00	120.00	356	824	1,180
Totals:											356	824	1,180	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.83	0.00	0.0	0.0	13.00	9.00	10.50	0	184	184
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.15	45.00	223.5	0.0	6.00	3.50	7.50	15	50	65
Pin	Pin Insulator - 5 kV	KU, UTILITY	39.15	-45.00	57.4	0.0	6.00	3.50	7.50	-5	50	45
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.90	0.00	230.5	140.5	2.00	3.00	3.19	1	13	13
Spool	Spool Insulator - 25 kV	KU, UTILITY	27.21	0.00	230.5	140.5	2.00	3.00	3.19	1	13	13
Bolt	Three Bolt	Unknown, COMMUNICATION	21.68	0.00	230.5	140.5	5.00	3.00	0.00	1	0	1
Bolt	Three Bolt	Unknown, COMMUNICATION	20.64	0.00	230.5	140.5	5.00	3.00	0.00	1	0	1
Bolt	Single Bolt	Unknown, COMMUNICATION	19.44	0.00	140.9	230.9	5.00	3.00	0.00	6	0	6
Totals:										20	309	328

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	22.83	33.37	11.13	15.54	7.32	12.04	1.60e+6	60.00	57.00	39.83	33,714	337.20	8.62

Pole Num:	922W - 61853-25440	Pole Length / Class:	45 / 3	Code:	NESC	Structure Type:	Unguyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Unguyed
Aux Data 2	Unset	Setting Depth (ft):	5.61	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	37.65	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.00
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.047229 Deg	Longitude:	-84.494130 Deg	Elevation:	844.073464515695		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	26.9	0.0
Groundline	26.9	0.0
Vertical	29.2	26.6

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	24,875	43.6
Groundline	24,875	43.6
GL Allowable	95,729	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 43.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	213	20.8	7,479	30.1	7.8	526	150	1	527	7.7
Comms	208	20.4	3,611	14.5	3.8	254	296	3	256	3.8
PowerEquipments	164	16.0	5,630	22.6	5.9	396	3,648	32	428	6.3
Pole	221	21.6	4,390	17.7	4.6	309	2,326	21	329	4.8
Crossarms	1	0.1	60	0.2	0.1	4	95	1	5	0.1
Risers	207	20.2	3,418	13.7	3.6	240	93	1	241	3.5
Insulators	8	0.8	287	1.2	0.3	20	84	1	21	0.3
Pole Load	1,022	100.0	24,875	100.0	26.0	1,748	6,692	59	1,807	26.6
Pole Reserve Capacity			70,854		74.0	5,052			4,993	73.4

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 43.6°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	591	57.9	16,832	67.7	17.6	1,183	3,946	35	1,218	17.9
Unknown, COMMUNICATION	208	20.4	3,593	14.4	3.8	253	325	3	255	3.8
Pole	221	21.6	4,390	17.7	4.6	309	2,326	21	329	4.8
<Undefined>	1	0.1	60	0.2	0.1	4	95	1	5	0.1
Totals:	1,022	100.0	24,875	100.0	26.0	1,748	6,692	59	1,807	26.6

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	40.27	0.00	0.3250	0.02	0.107	31.1	140.2	31.1	1,684	-7,841	0	299	-7,542
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	40.27	0.00	0.3250	0.11	0.107	82.5	320.9	82.5	1,684	8,663	0	792	9,455
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	39.52	45.33	0.3250	0.02	0.107	31.1	140.2	31.1	1,684	-7,696	32	294	-7,370
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	39.52	45.33	0.3250	0.11	0.107	82.5	320.9	82.5	1,684	8,503	84	777	9,365
Primary	ACSR 2 AWG 7/1 SPARATE KU, UTILITY	39.52	45.33	0.3250	0.02	0.107	31.1	140.2	31.1	1,684	-7,696	-31	294	-7,433

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	39.52	45.33	0.3250	0.11	0.107	82.5	320.9	82.5	1,684	8,503	-82	777	9,199
Neutral	#4 COPPER SOLID	KU, UTILITY	25.59	6.98	0.2043	0.02	0.126	31.1	140.2	31.1	982	-2,905	-5	162	-2,747
Neutral	#4 COPPER SOLID	KU, UTILITY	25.59	6.98	0.2043	0.15	0.126	82.5	320.9	82.5	982	3,209	-12	430	3,627
Secondary	#4 COPPER SOLID	KU, UTILITY	24.57	7.04	0.2043	0.02	0.126	31.1	140.2	31.1	982	-2,789	-5	156	-2,638
Secondary	#4 COPPER SOLID	KU, UTILITY	24.57	7.04	0.2043	0.15	0.126	82.5	320.9	82.5	982	3,081	-12	412	3,482
Totals:											3,035	-30	4,394	7,398	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.36	7.35	0.6570	0.36	0.190	31.1	140.2	31.1	750	-1,678	-8	202	-1,485
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	19.36	7.35	0.6570	1.05	0.190	82.5	320.9	82.5	750	1,855	-22	534	2,366
CATV	CATV 1.0	Unknown,	18.25	7.41	1.3300	0.38	0.337	31.1	140.2	31.1	925	-1,951	-15	301	-1,666
CATV	CATV 1.0	Unknown,	18.25	7.41	1.3300	1.07	0.337	82.5	320.9	82.5	925	2,156	-40	796	2,912
Telco	TELE 1.5	Unknown,	17.14	7.48	1.5000	0.43	0.900	31.1	140.2	31.1	2,000	-3,962	-26	309	-3,680
Telco	TELE 1.5	Unknown,	17.14	7.48	1.5000	1.22	0.900	82.5	320.9	82.5	2,000	4,377	-70	817	5,124
Totals:											796	-182	2,958	3,572	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-50KVA	KU, UTILITY	31.24	22.14	325.0	325.0	640.00	47.00	--	24.00	--	445	5,125	5,570
Totals:											445	5,125	5,570	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	38.71	5.45	320.5	320.5	50.00	4.50	3.50	96.00	5	54	60	
Totals:											5	54	60

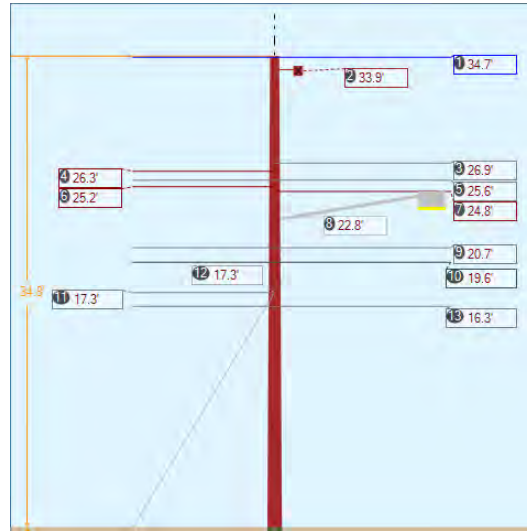
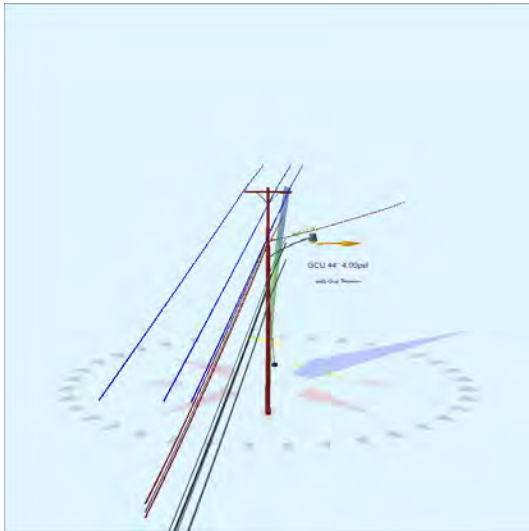
Riser	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)

Riser 352.0°	Riser	KU, UTILITY	24.43	6.09	352.0	352.0	24.43	293.19	8.00	8.00	293.19	15	1,533	1,548
Riser 310.0°	Riser	KU, UTILITY	24.43	6.09	310.0	310.0	24.43	293.19	8.00	8.00	293.19	-2	1,834	1,833
Totals:												14	3,368	3,381

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Pin	Pin Insulator - 22 kV	KU, UTILITY	39.39	0.00	0.0	0.0	13.00	9.00	10.50	0	182	182
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.90	45.00	43.6	0.0	6.00	3.50	7.50	43	50	93
Pin	Pin Insulator - 5 kV	KU, UTILITY	38.90	-45.00	237.4	0.0	6.00	3.50	7.50	-42	50	8
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.59	0.00	230.5	320.5	2.00	3.00	3.19	-2	12	10
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.57	0.00	230.5	320.5	2.00	3.00	3.19	-2	11	9
Bolt	Three Bolt	Unknown, COMMUNICATION	19.36	0.00	230.5	320.5	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	18.25	0.00	230.5	320.5	5.00	3.00	0.00	-6	0	-6
Bolt	Three Bolt	Unknown, COMMUNICATION	17.14	0.00	230.2	140.2	5.00	3.00	0.00	-6	0	-6
Totals:										-21	305	284

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
2.00	26.60	33.94	10.91	21.38	7.32	11.99	1.60e+6	60.00	57.00	39.39	22,954	229.18	3.42

Pole Num:	923W - 61874-25418	Pole Length / Class:	40 / 4	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	5.20	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	33.79	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.047201 Deg	Longitude:	-84.494062 Deg	Elevation:	835.971731417598		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	44.1
Groundline	0.0	44.1
Vertical	19.3	140.0

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	25,425	31.2
Groundline	25,425	31.2
GL Allowable	69,243	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	13.5	320.0		0.0	44.1	0.0	0.0
? EHS 1/4 (Down)			17.3	0.0	44.1	0.0	0.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 31.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	682	74.3	19,424	76.4	28.1	1,913	291	3	1,916	28.2
Comms	18	2.0	825	3.2	1.2	81	472	5	86	1.3
GuyBraces	5	0.5	84	0.3	0.1	8	4	0	8	0.1
Pole	173	18.8	3,035	11.9	4.4	299	1,675	18	317	4.7
Crossarms	2	0.2	88	0.4	0.1	9	95	1	10	0.1
Streetlights	31	3.4	1,737	6.8	2.5	171	162	2	173	2.5
Insulators	7	0.7	233	0.9	0.3	23	95	1	24	0.4
Pole Load	917	100.0	25,425	100.0	36.7	2,504	2,794	31	2,535	37.3
Pole Reserve Capacity			43,818		63.3	4,296			4,265	62.7

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 31.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	719	78.5	21,380	84.1	30.9	2,106	509	6	2,111	31.0
Unknown, COMMUNICATION	23	2.5	922	3.6	1.3	91	514	6	96	1.4
Pole	173	18.8	3,035	11.9	4.4	299	1,675	18	317	4.7
<Undefined>	2	0.2	88	0.4	0.1	9	95	1	10	0.1
Totals:	917	100.0	25,425	100.0	36.7	2,504	2,794	31	2,535	37.3

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	18.72	0.3250	0.27	0.107	128.1	139.4	128.1	1,684	-23,763	54	1,012	-22,697
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	18.72	0.3250	0.02	0.107	31.1	320.2	31.1	1,684	24,769	13	244	25,027
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	45.29	0.3250	0.27	0.107	128.1	139.4	128.1	1,684	-23,763	128	1,012	-22,623
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	45.29	0.3250	0.02	0.107	31.1	320.2	31.1	1,684	24,769	31	244	25,045
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	45.29	0.3250	0.27	0.107	128.1	139.4	128.1	1,684	-23,763	-119	1,012	-22,870

Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	34.71	45.29	0.3250	0.02	0.107	31.1	320.2	31.1	1,684	24,769	-29	244	24,985
Neutral	#4 COPPER SOLID	KU, UTILITY	26.90	6.30	0.2043	0.02	0.126	31.1	320.2	31.1	982	11,191	1	162	11,354
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	26.30	6.34	0.3980	1.51	0.145	128.1	139.4	128.1	450	-4,809	-7	834	-3,982
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.63	6.38	0.3980	1.51	0.145	128.1	139.4	128.1	450	-4,688	-7	813	-3,881
Secondary	DUPLEX 4 AWG	KU, UTILITY	25.63	6.38	0.6300	0.53	0.107	52.1	346.2	52.2	93	2,190	9	264	2,463
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	25.16	6.41	0.3980	1.51	0.145	128.1	139.4	128.1	450	-4,601	-7	798	-3,810
Secondary	#4 COPPER SOLID	KU, UTILITY	24.80	6.43	0.2043	0.02	0.126	31.1	320.2	31.1	982	10,318	1	149	10,469
Totals:											12,619	70	6,788	19,478	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.66	6.67	0.6570	1.76	0.190	128.1	139.4	128.1	750	-6,298	30	844	-5,423
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	20.66	6.67	0.6570	0.36	0.190	31.1	320.2	31.1	750	6,564	7	204	6,775
CATV	CATV 1.0	Unknown,	19.57	6.73	1.3300	1.77	0.337	128.1	139.4	128.1	925	-7,358	54	1,265	-6,039
CATV	CATV 1.0	Unknown,	19.57	6.73	1.3300	0.38	0.337	31.1	320.2	31.1	925	7,669	13	305	7,988
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.34	6.86	0.6570	1.76	0.190	128.1	139.4	128.1	750	-5,286	-10	709	-4,587
Telco	TELE 1.5	Unknown,	16.33	6.92	1.5000	2.07	0.900	128.1	139.4	128.1	2,000	-13,272	96	1,154	-12,022
Telco	TELE 1.5	Unknown,	16.33	6.92	1.5000	0.43	0.900	31.1	320.2	31.1	2,000	13,833	23	278	14,135
Totals:											-4,146	213	4,760	827	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Normal	Crossarm	33.90	5.15	319.8	319.8	50.00	4.50	3.50	96.00	13	75	88	
Totals:											13	75	88

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
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General	Streetlight - 10 ft. Arm	KU, UTILITY	22.79	4.04	360.0	360.0	85.00	24.00	20.00	3.00	120.00	1,029	713	1,742	
												Totals:	1,029	713	1,742

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.08	18.00	33.8	0.0	6.00	3.50	7.50	18	43	60	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.08	45.00	43.3	0.0	6.00	3.50	7.50	42	43	85	
Pin	Pin Insulator - 5 kV	KU, UTILITY	34.08	-45.00	236.3	0.0	6.00	3.50	7.50	-39	43	4	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.90	0.00	320.2	320.2	2.00	3.00	3.19	1	12	13	
Spool	Spool Insulator - 25 kV	KU, UTILITY	26.30	0.00	139.4	139.4	2.00	3.00	3.19	-1	12	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.63	0.00	139.4	139.4	2.00	3.00	3.19	-1	12	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.63	0.00	50.2	320.2	2.00	3.00	3.19	2	12	14	
Spool	Spool Insulator - 25 kV	KU, UTILITY	25.16	0.00	139.4	139.4	2.00	3.00	3.19	-1	11	11	
Spool	Spool Insulator - 25 kV	KU, UTILITY	24.80	0.00	320.2	320.2	2.00	3.00	3.19	1	11	12	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.66	0.00	49.8	319.8	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	19.57	0.00	49.8	319.8	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	17.34	0.00	139.4	139.4	5.00	3.00	0.00	-2	0	-2	
Bolt	Three Bolt	Unknown, COMMUNICATION	16.33	0.00	49.8	319.8	5.00	3.00	0.00	5	0	5	
										Totals:	36	198	233

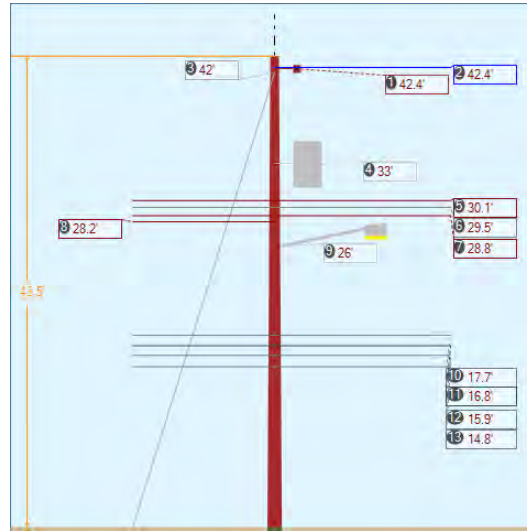
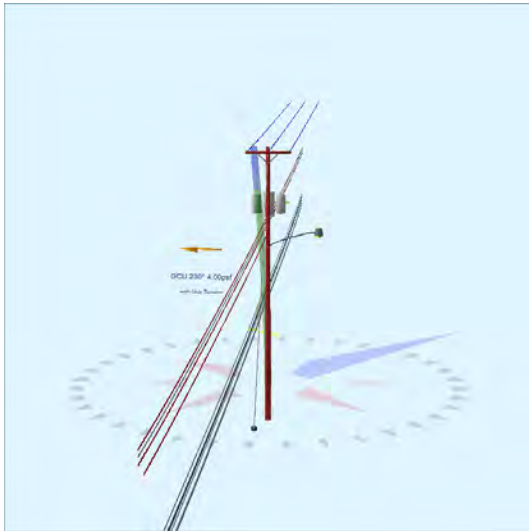
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	17.34	0.00	13.49	0.25	75.00	320.0	52.0	0.121	20.25	0.00

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)		
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	0	0	0	0	0	84		
										Totals:	0	0	0	84

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	13.49	320.0	20,000	1.00	20,000	0	0	0.0

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.32	33.15	10.01	7.22	6.69	10.76	1.60e+6	60.00	57.00	34.80	245,863	2539.86	90.91

Pole Num:	924W - 61940-25340	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Guyed Tangent
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	6.53	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.80	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.046936 Deg	Longitude:	-84.493808 Deg	Elevation:	858.350187625016		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	28.5	0.0
Groundline	28.5	0.0
Vertical	18.5	37.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	34,185	232.1
Groundline	34,185	232.1
GL Allowable	131,002	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	26.0	140.0		57.8	230.0	60.1	320.0
? EHS 3/8 (Down)			42.0	83.4	230.0	95.5	320.0
System Capacity Summary:				Adequate		Near Capacity	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 232.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	621	45.4	23,235	68.0	17.7	1,227	396	3	1,229	18.1
Comms	495	36.2	8,362	24.5	6.4	441	776	6	447	6.6
GuyBraces	-207	-15.1	-8,532	-25.0	-6.5	-450	14,802	106	-344	-5.1
PowerEquipments	149	10.9	5,044	14.8	3.9	266	3,040	22	288	4.2
Pole	269	19.7	5,689	16.6	4.3	300	3,119	22	323	4.7
Crossarms	3	0.2	103	0.3	0.1	6	190	1	7	0.1
Streetlights	29	2.1	-97	-0.3	-0.1	-5	142	1	-4	-0.1
Insulators	9	0.7	381	1.1	0.3	20	70	1	21	0.3
Pole Load	1,368	100.0	34,185	100.0	26.1	1,805	22,536	162	1,967	28.9
Pole Reserve Capacity			96,817		73.9	4,995			4,833	71.1

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 232.1°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	601	43.9	20,006	58.5	15.3	1,056	18,413	132	1,189	17.5
Unknown, COMMUNICATION	495	36.2	8,387	24.5	6.4	443	814	6	449	6.6
Pole	269	19.7	5,689	16.6	4.3	300	3,119	22	323	4.7
<Undefined>	3	0.2	103	0.3	0.1	6	190	1	7	0.1
Totals:	1,368	100.0	34,185	100.0	26.1	1,805	22,536	162	1,967	28.9

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	42.43	18.54	0.3250	0.27	0.107	128.1	319.4	128.1	1,684	4,351	1	1,306	5,658
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	42.43	48.67	0.3250	0.27	0.107	128.1	319.4	128.1	1,684	4,351	-11	1,306	5,647
Primary	ACSR 2 AWG 7/1 SPARATE	KU, UTILITY	42.43	48.67	0.3250	0.27	0.107	128.1	319.4	128.1	1,684	4,351	11	1,306	5,668
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.15	7.30	0.3980	1.48	0.145	125.9	139.8	125.9	450	-703	25	993	315

Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	30.15	7.30	0.3980	1.51	0.145	128.1	319.4	128.1	450	826	26	1,010	1,862
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.50	7.34	0.3980	1.48	0.145	125.9	139.8	125.9	450	-688	25	972	309
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	29.50	7.34	0.3980	1.51	0.145	128.1	319.4	128.1	450	808	26	988	1,823
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.75	7.38	0.3980	1.48	0.145	125.9	139.8	125.9	450	-671	25	947	302
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.75	7.38	0.3980	1.51	0.145	128.1	319.4	128.1	450	788	26	963	1,777
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	28.19	7.42	0.3980	1.48	0.145	125.9	139.8	125.9	450	-658	-1	929	270
Totals:											12,757	153	10,721	23,631	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.71	8.06	0.6570	1.72	0.190	125.9	139.8	125.9	750	-688	38	752	101
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	17.71	8.06	0.6570	1.76	0.190	128.1	319.4	128.1	750	809	39	764	1,612
CATV	CATV 1.0	Unknown,	16.75	8.12	1.3300	1.73	0.337	125.9	139.8	125.9	925	-803	67	1,125	388
CATV	CATV 1.0	Unknown,	16.75	8.12	1.3300	1.77	0.337	128.1	319.4	128.1	925	944	68	1,144	2,156
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.87	8.18	0.6570	1.72	0.190	125.9	139.8	125.9	750	-617	38	674	95
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown,	15.87	8.18	0.6570	1.76	0.190	128.1	319.4	128.1	750	725	39	685	1,449
Telco	TELE 1.5	Unknown,	14.83	8.24	1.5000	2.02	0.900	125.9	139.8	125.9	2,000	-1,537	118	1,088	-331
Telco	TELE 1.5	Unknown,	14.83	8.24	1.5000	2.07	0.900	128.1	319.4	128.1	2,000	1,806	121	1,107	3,034
Totals:											638	528	7,338	8,504	

PowerEquipment	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Transformer	1PH-75KVA	KU, UTILITY	33.02	23.62	320.0	320.0	870.00	52.00	--	26.00	--	118	2,169	2,287
Transformer	1PH-25KVA	KU, UTILITY	33.02	21.62	320.0	320.0	365.00	39.00	--	22.00	--	91	2,752	2,843
Totals:											209	4,921	5,130	

Crossarm	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
Normal Crossarm		42.43	5.79	319.4	319.4	50.00	4.50	3.50	96.00	0	105	105
Totals:										0	105	105

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)
General Streetlight - 8 ft. Arm	KU, UTILITY	25.97	5.06	35.0	35.0	75.00	24.00	20.00	3.00	96.00	-840	742	-99
Totals:										-840	742	-99	

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Deadend Deadend 12.75"	KU, UTILITY	42.43	0.00	319.4	0.0	3.00	3.80	12.75	0	100	100	
Deadend Deadend 12.75"	KU, UTILITY	42.43	45.00	42.1	0.0	3.00	3.80	12.75	-21	100	79	
Deadend Deadend 12.75"	KU, UTILITY	42.43	-45.00	236.7	0.0	3.00	3.80	12.75	22	100	122	
Spool Spool Insulator - 25 kV	KU, UTILITY	30.15	0.00	229.6	139.6	2.00	3.00	3.19	2	14	16	
Spool Spool Insulator - 25 kV	KU, UTILITY	29.50	0.00	229.6	139.6	2.00	3.00	3.19	2	14	16	
Spool Spool Insulator - 25 kV	KU, UTILITY	28.75	0.00	229.6	139.6	2.00	3.00	3.19	2	13	16	
Spool Spool Insulator - 25 kV	KU, UTILITY	28.19	0.00	139.8	139.8	2.00	3.00	3.19	0	13	13	
Bolt Three Bolt	Unknown, COMMUNICATION	17.71	0.00	229.6	139.6	5.00	3.00	0.00	6	0	6	
Bolt Three Bolt	Unknown, COMMUNICATION	16.75	0.00	229.6	139.6	5.00	3.00	0.00	6	0	6	
Bolt Three Bolt	Unknown, COMMUNICATION	15.87	0.00	229.6	139.6	5.00	3.00	0.00	6	0	6	
Bolt Three Bolt	Unknown, COMMUNICATION	14.83	0.00	229.6	139.6	5.00	3.00	0.00	7	0	7	
Totals:										34	354	388

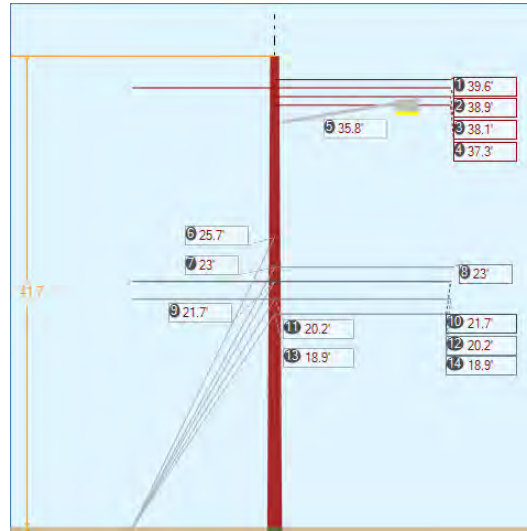
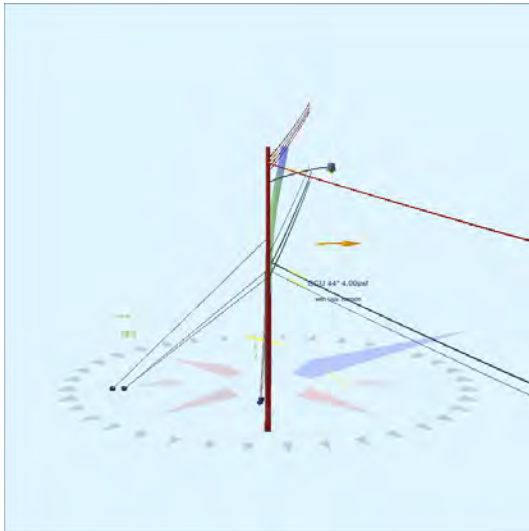
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)
EHS 3/8 Down	KU, UTILITY	41.99	0.00	26.00	0.375	75.00	140.0	58.0	0.273	47.71	3.47

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	13,231	12,028	11,553	9,800	6,118	-223	-8,677
Totals:										9,800	6,118	-223	-8,677

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	26.00	140.0	20,000	1.00	20,000	12,028	11,553	60.1

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	37.43	35.19	11.68	27.24	7.96	13.31	1.60e+6	60.00	57.00	43.47	121,759	1218.16	5.41

Pole Num:	925W - 62000-25271	Pole Length / Class:	50 / 2	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	8.33	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	41.10	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.046670 Deg	Longitude:	-84.493515 Deg	Elevation:	851.053182562408		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	36.8	26.0
Groundline	11.9	0.0
Vertical	4.0	22.4

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	19,003	46.1
Groundline	14,071	294.7
GL Allowable	124,583	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	27.0	220.0		19.8	44.1	19.8	44.8
? EHS 3/8 (Down)			25.7	28.5	44.1	31.4	44.8
? Single Helix Anchor	11.0	142.0		17.4	44.1	20.3	306.9
? EHS 1/4 (Down)			23.0	28.5	44.1	36.8	306.9
? EHS 1/4 (Down)			21.7	29.7	44.1	37.8	306.9
? Single Helix Anchor	25.0	220.0		4.3	44.1	4.3	50.0
? EHS 1/4 (Down)			20.2	8.8	44.1	9.7	50.0
? EHS 1/4 (Down)			18.9	5.7	44.1	6.3	50.0
? Single Helix Anchor	9.0	142.0		8.8	44.1	9.9	301.2
? EHS 1/4 (Down)			18.9	29.6	44.1	36.6	301.2
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 294.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	-442	-32.8	-13,269	-94.3	-10.7	-981	250	2	-979	-14.4
Comms	2,942	218.6	43,299	307.7	34.8	3,201	497	4	3,205	47.1
GuyBraces	-1,058	-78.6	-14,288	-101.5	-11.5	-1,056	12,105	90	-966	-14.2
Pole	-85	-6.3	-1,297	-9.2	-1.0	-96	2,925	22	-74	-1.1
Streetlights	-11	-0.8	-362	-2.6	-0.3	-27	162	1	-26	-0.4
Insulators	-1	-0.1	-11	-0.1	0.0	-1	57	0	0	0.0
Pole Load	1,346	100.0	14,071	100.0	11.3	1,040	15,994	119	1,159	17.0
Pole Reserve Capacity			110,512		88.7	5,760			5,641	83.0

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 294.7°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	294	21.9	524	3.7	0.4	39	4,560	34	73	1.1
Unknown, COMMUNICATION	1,136	84.4	14,844	105.5	11.9	1,097	8,510	63	1,161	17.1
Pole	-85	-6.3	-1,297	-9.2	-1.0	-96	2,925	22	-74	-1.1
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	1,346	100.0	14,071	100.0	11.3	1,040	15,994	119	1,159	17.0

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	39.60	6.61	0.3980	1.48	0.145	125.9	319.8	125.9	450	20,984	21	-550	20,455
Secondary	QUADRAPLEX 1/0	KU, UTILITY	38.87	6.65	1.1510	1.02	0.541	90.7	112.8	90.7	1,930	-97,456	-47	54	-97,449
Neutral	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.83	6.65	0.3980	1.48	0.145	125.9	319.8	125.9	450	20,579	21	-540	20,061
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	38.08	6.70	0.3980	1.48	0.145	125.9	319.8	125.9	450	20,182	21	-529	19,674
Secondary	ACSR 1/0 AWG 6/1 RAVEN	KU, UTILITY	37.33	6.75	0.3980	1.48	0.145	125.9	319.8	125.9	450	19,784	21	-519	19,287
Totals:											-15,926	37	-2,084	-17,973	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	23.00	7.63	0.6570	1.72	0.190	125.9	319.8	125.9	750	20,310	32	-412	19,931
CATV	CATV 1.0	Unknown, COMMUNICATION	21.73	7.71	1.3300	1.18	0.337	90.7	112.8	90.7	925	-26,119	-9	33	-26,095
CATV	CATV 1.0	Unknown, COMMUNICATION	21.73	7.71	1.3300	1.73	0.337	125.9	319.8	125.9	925	23,675	-13	-615	23,046
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.18	7.80	0.6570	1.16	0.190	90.7	112.8	90.7	750	-19,667	-5	20	-19,652
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.18	7.80	0.6570	1.72	0.190	125.9	319.8	125.9	750	17,826	-7	-361	17,457

Telco	TELE 1.5	Unknown,	18.87	7.88	1.5000	2.02	0.900	125.9	319.8	125.9	2,000	44,442	103	-584	43,961	
		COMMUNICATION														
												Totals:	60,467	101	-1,919	58,648

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
General	Streetlight - 10 ft. Arm	KU, UTILITY	35.84	4.34	30.0	30.0	85.00	24.00	20.00	3.00	120.00	-110	-380	-491	
												Totals:	-110	-380	-491

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)		
Spool	Spool Insulator - 25 kV	KU, UTILITY	39.60	0.00	319.8	319.8	2.00	3.00	3.19	2	-6	-4	
Spool	Spool Insulator - 25 kV	KU, UTILITY	38.87	0.00	112.8	112.8	2.00	3.00	3.19	-2	-6	-8	
Spool	Spool Insulator - 25 kV	KU, UTILITY	38.83	0.00	319.8	319.8	2.00	3.00	3.19	2	-6	-4	
Spool	Spool Insulator - 25 kV	KU, UTILITY	38.08	0.00	319.8	319.8	2.00	3.00	3.19	2	-6	-4	
Spool	Spool Insulator - 25 kV	KU, UTILITY	37.33	0.00	319.8	319.8	2.00	3.00	3.19	2	-6	-4	
Bolt	Three Bolt	Unknown, COMMUNICATION	23.00	0.00	319.8	319.8	5.00	3.00	0.00	5	0	5	
Bolt	Three Bolt	Unknown, COMMUNICATION	21.73	0.00	36.3	306.3	5.00	3.00	0.00	-1	0	-1	
Bolt	Three Bolt	Unknown, COMMUNICATION	20.18	0.00	36.3	306.3	5.00	3.00	0.00	-1	0	-1	
Bolt	Three Bolt	Unknown, COMMUNICATION	18.87	0.00	319.8	319.8	5.00	3.00	0.00	6	0	6	
										Totals:	14	-30	-15

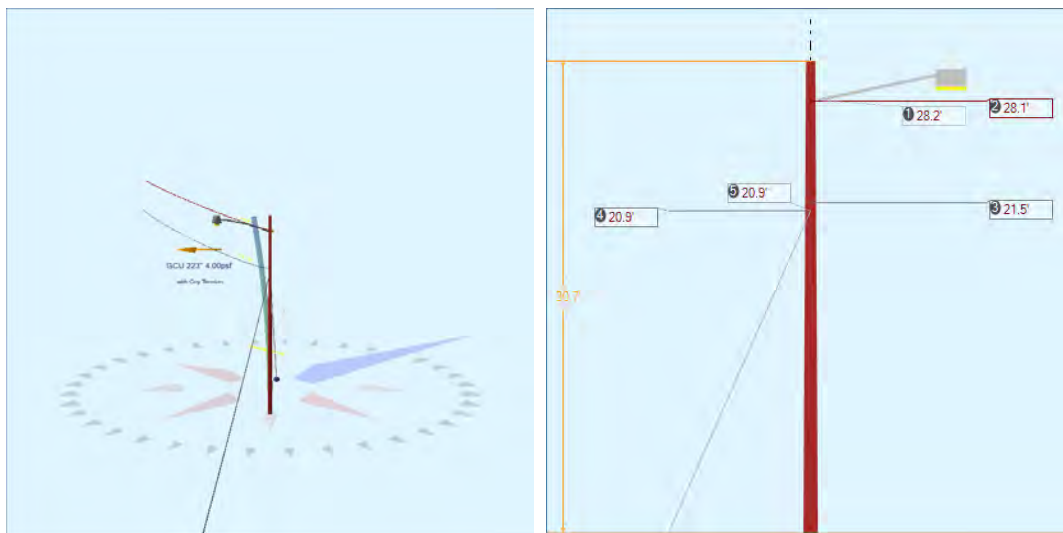
Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 3/8	Down	KU, UTILITY	25.68	0.00	27.00	0.375	75.00	220.0	43.4	0.273	35.46	0.88
EHS 1/4	Down	Unknown, COMMUNICATION	22.99	0.00	11.00	0.25	75.00	142.0	64.2	0.121	23.81	0.58
EHS 1/4	Down	Unknown, COMMUNICATION	21.73	0.00	11.00	0.25	75.00	142.0	62.9	0.121	22.67	0.57
EHS 1/4	Down	Unknown, COMMUNICATION	20.18	0.00	25.00	0.25	75.00	220.0	38.8	0.121	30.29	0.23
EHS 1/4	Down	Unknown, COMMUNICATION	18.87	0.00	25.00	0.25	75.00	220.0	36.9	0.121	29.47	0.14
EHS 1/4	Down	Unknown, COMMUNICATION	18.87	0.00	9.00	0.25	75.00	142.0	64.3	0.121	19.22	0.48

Guy Wire and Brace (Loads and Reactions)		Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)
EHS 3/8	Down	2.30e+7	15,400	0.90	13,860	700	4,347	3,952	3,952	2,716	2,870	755	19,198
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,202	2,001	1,706	1,536	742	-660	-14,646
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,260	2,055	1,778	1,583	809	-719	-15,090
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	580	527	526	330	410	108	2,155
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	375	341	340	204	271	71	1,334
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,188	1,989	1,769	1,593	768	-683	-12,305
Totals:										7,962	5,872	-1,127	-19,353

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	27.00	220.0	20,000	1.00	20,000	3,952	3,952	19.8
Single Helix Anchor		18.00	11.00	142.0	20,000	1.00	20,000	4,056	3,483	20.3
Single Helix Anchor		18.00	25.00	220.0	20,000	1.00	20,000	867	866	4.3
Single Helix Anchor		18.00	9.00	142.0	20,000	1.00	20,000	1,989	1,769	9.9

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	22.37	33.15	12.17	17.96	7.96	13.09	1.60e+6	60.00	57.00	41.68	401,301	3998.61	25.00

Pole Num:	943W - 62632-24497	Pole Length / Class:	35 / 5	Code:	NESC	Structure Type:	Angle
Aux Data 1	Unset	Species:	SOUTHERN PINE	NESC Rule:	Rule 250B	Status	Guy Wires Adequate
Aux Data 2	Unset	Setting Depth (ft):	4.30	Construction Grade:	C	Pole Strength Factor:	0.85
Aux Data 3	Unset	G/L Circumference (in):	29.58	Loading District:	Medium	Transverse Wind LF:	1.75
Aux Data 4	Unset	G/L Fiber Stress (psi):	8,000	Ice Thickness (in):	0.25	Wire Tension LF:	1.30
Aux Data 5	Unset	Allowable Stress (psi):	6,800	Wind Speed (mph):	39.53	Vertical LF:	1.90
Aux Data 6	Unset	Fiber Stress Ht. Reduc:	No	Wind Pressure (psf):	4.00		
Latitude:	38.044478 Deg	Longitude:	-84.491360 Deg	Elevation:	864.250402485892		Feet



Pole Capacity Utilization (%)	Height (ft)	Wind Angle (deg)
Maximum	0.0	223.4
Groundline	0.0	223.4
Vertical	19.4	144.5

Pole Moments (ft-lb)	Load Angle (deg)	Wind Angle (deg)
Max Cap Util	207.2	223.4
Groundline	207.2	223.4
GL Allowable	46,460	

Guy System Component Summary				Load From Worst Wind Angle on Pole		Individual Maximum Load	
Description	Lead Length (ft)	Lead Angle (deg)	Height (ft)	Nominal Capacity (%)	Wind Angle (deg)	Max Load Capacity (%)	Wind Angle (deg)
? Single Helix Anchor	7.0	324.5		8.6	223.4	9.8	160.0
? EHS 1/4 (Down)			20.9	28.8	223.4	35.8	160.0
System Capacity Summary:				Adequate		Adequate	

Groundline Load Summary - Reporting Angle Mode: Load - Reporting Angle: 207.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
Powers	32	8.6	807	10.6	1.7	131	27	0	132	1.9
Comms	420	111.4	7,930	103.8	17.1	1,291	95	1	1,292	19.0
GuyBraces	-236	-62.8	-4,452	-58.3	-9.6	-725	2,469	35	-689	-10.1
Pole	133	35.3	1,887	24.7	4.1	307	1,159	17	324	4.8
Streetlights	28	7.3	1,453	19.0	3.1	237	142	2	239	3.5
Insulators	0	0.1	12	0.2	0.0	2	23	0	2	0.0
Pole Load	377	100.0	7,637	100.0	16.4	1,243	3,916	56	1,299	19.1
Pole Reserve Capacity			38,823		83.6	5,557			5,501	80.9

Load Summary by Owner - Reporting Angle Mode: Load - Reporting Angle: 207.2°										
	Shear Load* (lbs)	Applied Load (%)	Bending Moment (ft-lb)	Applied Moment (%)	Pole Capacity (%)	Bending Stress (+/- psi)	Vertical Load (lbs)	Vertical Stress (psi)	Total Stress (psi)	Pole Capacity (%)
KU, UTILITY	60	16.0	2,270	29.7	4.9	370	173	2	372	5.5
Unknown, COMMUNICATION	183	48.7	3,480	45.6	7.5	566	2,583	37	604	8.9
Pole	133	35.3	1,887	24.7	4.1	307	1,159	17	324	4.8
<Undefined>	0	0.0	0	0.0	0.0	0	0	0	0	0.0
Totals:	377	100.0	7,637	100.0	16.4	1,243	3,916	56	1,299	19.1

Detailed Load Components:

Power	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Secondary	DUPLEX 4 AWG	KU, UTILITY	28.09	5.67	0.6300	0.72	0.107	73.6	292.9	73.6	100	274	-13	637	898
Totals:											274	-13	637	898	

Comm	Owner	Height (ft)	Horiz. Offset (in)	Cable Diameter (in)	Sag at Max Temp (ft)	Cable Weight (lbs/ft)	Lead/Span Length (ft)	Span Angle (deg)	Wire Length (ft)	Tension (lbs)	Tension Moment* (ft-lb)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	21.47	6.03	0.6570	0.92	0.190	73.6	292.9	73.7	100	209	1	498	709

Telco	BELOPTIX AT072 - 72 FIBERS - ARMORED (0.657)	Unknown, COMMUNICATION	20.94	6.06	0.6570	1.93	0.190	138.7	137.8	138.7	750	7,184	11	915	8,110
Totals:												7,393	12	1,413	8,819

Streetlight	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Height (in)	Unit Depth (in)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
General	Streetlight - 8 ft. Arm	KU, UTILITY	28.17	3.16	220.0	220.0	75.00	24.00	20.00	3.00	96.00	843	773	1,616
Totals:												843	773	1,616

Insulator	Owner	Height (ft)	Horiz. Offset (in)	Offset Angle (deg)	Rotate Angle (deg)	Unit Weight (lbs)	Unit Diameter (in)	Unit Length (in)	Offset Moment* (ft-lb)	Wind Moment* (ft-lb)	Moment at GL* (ft-lb)	
Spool	Spool Insulator - 25 kV	KU, UTILITY	28.09	0.00	22.9	292.9	2.00	3.00	3.19	-2	13	11
Bolt	Single Bolt	Unknown, COMMUNICATION	21.47	0.00	292.9	382.9	5.00	3.00	0.00	0	0	0
Bolt	Single Bolt	Unknown, COMMUNICATION	20.94	0.00	137.8	227.8	5.00	3.00	0.00	2	0	2
Totals:										0	13	13

Guy Wire and Brace	Owner	Attach Height (ft)	End Height (ft)	Lead/Span Length (ft)	Wire Diameter (in)	Percent Solid (%)	Lead Angle (deg)	Incline Angle (deg)	Wire Weight (lbs/ft)	Rest Length (ft)	Stretch Length (in)	
EHS 1/4	Down	Unknown, COMMUNICATION	20.94	0.00	6.96	0.25	75.00	324.5	71.4	0.121	20.48	0.50

Guy Wire and Brace (Loads and Reactions)	Elastic Modulus (psi)	Rated Tensile Strength (lbs)	Guy Strength Factor	Allowable Tension (lbs)	Initial Tension (lbs)	Loaded Tension ² (lbs)	Maximum Tension ² (lbs)	Applied Tension ³ (lbs)	Vertical Load (lbs)	Shear Load In Guy Dir (lbs)	Shear Load At Report Angle (lbs)	Moment at GL ³ (ft-lb)	
EHS 1/4	Down	2.30e+7	6,650	0.90	5,985	700	2,144	1,949	1,725	1,634	551	-253	-4,951
Totals:										1,634	551	-253	-4,951

Anchor/Rod Load Summary	Owner	Rod Length AGL (in)	Lead Length (ft)	Lead Angle (deg)	Strength of Assembly (lbs)	Anchor/Rod Strength Factor	Allowable Load (lbs)	Max Load ² (lbs)	Load at Pole MCU ³ (lbs)	Max Required Capacity ² (%)
Single Helix Anchor		18.00	6.96	324.5	20,000	1.00	20,000	1,949	1,725	9.7

Pole Buckling													
Buckling Constant	Buckling Column Height* (ft)	Buckling Section Height (% Buckling Col. Hgt.)	Buckling Section Diameter (in)	Minimum Buckling Diameter at GL (in)	Diameter at Tip (in)	Diameter at GL (in)	Modulus of Elasticity (psi)	Pole Density (pcf)	Ice Density (pcf)	Pole Tip Height (ft)	Buckling Load Capacity at Height (lbs)	Buckling Load Applied at Height (lbs)	Buckling Load Factor of Safety
0.71	19.39	33.39	8.71	8.31	6.05	9.42	1.60e+6	60.00	57.00	30.70	139,927	1398.42	35.71

48' 4" - 906W - 27401

26' 7" - Lowest Power

22' 2" - Proposed Metronet

20' - Highest Tel Cable

4' - Base offset

Base

29' 6" - 907W - NT

25' 4" - Lowest Power

19' 8" - Proposed Metronet

17' 8" - Highest Tel Cable

4' - Base offset

Base



38' 2" - 909W - 61628-26007

28' 6" - Lowest Power

20' 10" - Proposed Metronet

19' 10" - Highest Tel Cable

19' 5" - Highest Tel Drop

4' - Base offset

Base



38' 8" - 910W - NT

26' 6" - Lowest Power

20' 11" - Proposed Metronet

20' 9" - Highest Tel Drop

18' 11" - Highest Tel Cable

4' - Base offset

Base

ONE WAY
←



5
TL140

38' 6" - 911W - 61680-25956

27' 6" - Lowest Power

20' 1" - Proposed Metronet

18' 5" - Highest Tel Drop

18' 1" - Highest Tel Cable

4' - Base offset

Base

WIN7394

37' 10" - 912W - 61726-25911

21' 9" - Lowest Power

19' 7" - Proposed Metronet

18' 7" - Highest Tel Cable

4' - Base offset

Base

39' 10" - 921W - 61757-25555

25' 1" - Lowest Power

22' 8" - Proposed Metronet

19' 5" - Highest Tel Cable

4' - Base offset

Base

WIN7396

39' 5" - 922W - 61853-25440

24' 5" - Lowest Power

20' 4" - Proposed Metronet

17' 2" - Highest Tel Cable

16' 5" - Highest Tel Drop

4' - Base offset

Base

WIN7397

34' 10" - 923W - 61874-25418

22' 7" - Lowest Power

21' 6" - Proposed Metronet

17' 4" - Highest Tel Cable

4' - Base offset

Base

43' 6" - 924W - 61940-25340

22' 5" - Proposed Metronet

4' - Base offset

Base

WIN7399

41' 8" - 925W - 62000-25271

23' - Proposed Metronet

4' - Base offset

Base

WIN7400

30' 8" - 943W - 62632-24497

26' 9" - Lowest Power

22' 6" - Proposed Metronet

21' 6" - Highest Tel Cable

4' - Base offset

Base

From: Hays, Sarah K
Sent: Wednesday, March 21, 2018 2:39 PM
To: Lauren Sandefur
Cc: Hodges, Felicia N; Edwards, Kimberly; Sanders, Ashley L; Lloyd, James
Subject: MetroNet Lexington Applications

Lauren,

We have received 375 poles over 18 applications from MetroNet since March 14. We can only accept 300 poles over a 30 day rolling calendar period to allow our field adequate time to survey these poles.

Since we are over the 300 poles we allow, the next application date we will be able to start processing application from MetroNet will be 04/18/18. By this date, 191 poles will have rolled out of the 30 days and we will be able to accept 116. After that date we will be able to stay at 300 poles for the 30 day period.

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Hays, Sarah K
Sent: Tuesday, March 13, 2018 5:09 PM
To: Lauren Sandefur
Subject: RE: FW: Windstream Priority

Lauren,

Here is the response from our engineer. It was a new question to her, but this is what she said:

I'd say it's the lowest power on the pole period.

Thank you,
Sarah

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 12, 2018 9:58 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: FW: FW: Windstream Priority
Importance: High

Good Morning Sarah,
Please see highlighted below.
Thank you,

Lauren Sandefur
Permit Specialist

From: David Solomon [mailto:dsolomon@iconengineering.net]
Sent: Monday, March 12, 2018 9:56 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: Re: FW: Windstream Priority

Ok,

So there is still an issue with the photo labeling as they both require different terminology. KU is looking for "Top Comm" & "Bottom Comm" where Windstream is looking for "Highest Tel Cable" & Highest Tel Drop" only. We currently don't call out drop cables for KU permits.

We are still unclear as to what Windstream wants to see labeled as "Lowest Power". Is this the lowest power cable attachment (bolt) on the pole or the lowest governing power (attachment, streetlight, riser, drip loop, etc)? Or is this just the lowest power on the pole period even though it may not be the NESC governing measurement?

David Solomon
National Technical Services Manager
Icon Engineering, Inc.
400 Kimberly Way

Suite 403
Canton, GA. 30114
Office [770-592-9797](tel:770-592-9797)
Cell [770-687-4932](tel:770-687-4932)

From: David Solomon [mailto:dsolomon@iconengineering.net]
Sent: Friday, March 9, 2018 1:20 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: Re: Windstream Priority

Thank you very much for the update!

Hope you have a great weekend as well!

David Solomon

National Technical Services Manager

Icon Engineering, Inc.

[400 Kimberly Way](#)

[Suite 403](#)

[Canton, GA. 30114](#)

[Office 770-592-9797](tel:770-592-9797)

[Cell 770-687-4932](tel:770-687-4932)

On Fri, Mar 9, 2018 at 2:02 PM, Lauren Sandefur <Lauren.Sandefur@metronetinc.com> wrote:

Good Afternoon David,

I am still waiting on responses from Windstream regarding a couple of questions I had on our call this morning.

We are also still working on the priority list and I will have that to you Monday after the meeting.

LX135 will be our first LCP though!

Thanks!

Have a great weekend

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: [812.213.1328](tel:812.213.1328)

www.MetronetInc.com

METRONET.

From: Hays, Sarah K
Sent: Tuesday, March 06, 2018 2:49 PM
To: Lauren Sandefur
Subject: RE: LX Application

Lauren,

Nicole has sent it on our OSP Manager for the area so she can have a look at it and make sure it meets our requirements.

We'll let you know.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 06, 2018 12:16 PM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: FW: LX Application

Sarah,
That was the email I was referring to!
We have 350 poles on backlog for Windstream we are hoping to start submitting this week if we get approval on that application.
Thank you,

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Monday, March 5, 2018 2:29 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX Application

Lauren,

I found it from 3/1. Is this the email you are talking about?

We should get it processed today and let you know.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Monday, March 05, 2018 9:35 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: LX Application

Good Morning Sarah,
I submitted an application for Lexington last week. I was just wondering if you could let me know if I left anything out or if that was all the information that was needed.
I have several others that I'm ready to send off, we're just waiting on approval of that one.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



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From: Hays, Sarah K
Sent: Monday, March 05, 2018 3:29 PM
To: Lauren Sandefur
Subject: RE: LX Application

Lauren,

I found it from 3/1. Is this the email you are talking about?

We should get it processed today and let you know.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Monday, March 05, 2018 9:35 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: LX Application

Good Morning Sarah,

I submitted an application for Lexington last week. I was just wondering if you could let me know if I left anything out or if that was all the information that was needed.

I have several others that I'm ready to send off, we're just waiting on approval of that one.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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METRONET.

From: Hays, Sarah K
Sent: Monday, March 05, 2018 3:27 PM
To: Lauren Sandefur
Subject: RE: LX Application

Good afternoon, Lauren

I received your email with the application from this afternoon, but I did not see a submission from last week. What day did you send it? Can you forward the email to me?

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Monday, March 05, 2018 9:35 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: LX Application

Good Morning Sarah,

I submitted an application for Lexington last week. I was just wondering if you could let me know if I left anything out or if that was all the information that was needed.

I have several others that I'm ready to send off, we're just waiting on approval of that one.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Hays, Sarah K
Sent: Monday, March 19, 2018 9:51 AM
To: Lauren Sandefur
Subject: RE: LX Pole Photos

Lauren,

I can check with the engineer, but I know it probably depends on how much work WIN has to do and how large the area is.

Thank you,
Sarah

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Tuesday, March 13, 2018 4:35 PM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: RE: LX Pole Photos

Thank you Sarah!

One more thing and I will stop bugging you for a little bit. Once we get the application process down how long will the average turn around rate be on us getting applications back?

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Tuesday, March 13, 2018 4:07 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX Pole Photos

Lauren,

Here is the response from our engineer:

Same as K.U. with proposed make ready requests will work.

Thank you,
Sarah

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 12, 2018 9:22 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: RE: LX Pole Photos

Good Morning Sarah,
I was hoping that you had an update regarding this?
Kentucky Utilities is requiring these photos to be marked with our make ready response proposed.

So we were assuming that it would be the same for Windstream.
Thanks!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [<mailto:Sarah.K.Hays@windstream.com>]
Sent: Friday, March 9, 2018 10:08 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Subject: RE: LX Pole Photos

Lauren,

I have not heard a response from our OSP manager for the area regarding the pole photos.

I will let you know when I do.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Friday, March 09, 2018 8:28 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Subject: FW: LX Pole Photos

Yes, our application does state that but we were wondering how you would like the pole photos.
Either with existing attachments as it is today or with our make ready proposed.
Thanks,

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [<mailto:Sarah.K.Hays@windstream.com>]
Sent: Friday, March 9, 2018 8:24 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: RE: LX Pole Photos

Lauren,

MetroNet will need to note on the applications where they are wanting to attach and where they are wanting Windstream to lower/move to. MetroNet cannot move or touch Windstream facilities.

Let me know if you have any questions.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Thursday, March 08, 2018 3:29 PM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: LX Pole Photos

Good afternoon Sarah,

As far as our pole photos for PLA do we model the pole as it is today (Existing) or with make ready and proposed Metronet plant installed?

I would assume the second since we are doing our own make ready for these poles?

Thanks,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, March 13, 2018 5:35 PM
To: Hays, Sarah K
Subject: RE: LX Pole Photos

Thank you Sarah!

One more thing and I will stop bugging you for a little bit. Once we get the application process down how long will the average turn around rate be on us getting applications back?

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Tuesday, March 13, 2018 4:07 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX Pole Photos

Lauren,

Here is the response from our engineer:

Same as K.U. with proposed make ready requests will work.

Thank you,
Sarah

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 12, 2018 9:22 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: RE: LX Pole Photos

Good Morning Sarah,
I was hoping that you had an update regarding this?
Kentucky Utilities is requiring these photos to be marked with our make ready response proposed.
So we were assuming that it would be the same for Windstream.
Thanks!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Friday, March 9, 2018 10:08 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Subject: RE: LX Pole Photos

Lauren,

I have not heard a response from our OSP manager for the area regarding the pole photos.

I will let you know when I do.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Friday, March 09, 2018 8:28 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>

Subject: FW: LX Pole Photos

Yes, our application does state that but we were wondering how you would like the pole photos.

Either with existing attachments as it is today or with our make ready proposed.

Thanks,

Lauren Sandefur

Permit Specialist

From: Hays, Sarah K [<mailto:Sarah.K.Hays@windstream.com>]

Sent: Friday, March 9, 2018 8:24 AM

To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>

Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>

Subject: RE: LX Pole Photos

Lauren,

MetroNet will need to note on the applications where they are wanting to attach and where they are wanting Windstream to lower/move to. MetroNet cannot move or touch Windstream facilities.

Let me know if you have any questions.

Thank you,

Sarah Hays

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sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Thursday, March 08, 2018 3:29 PM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: LX Pole Photos

Good afternoon Sarah,

As far as our pole photos for PLA do we model the pole as it is today (Existing) or with make ready and proposed Metronet plant installed?

I would assume the second since we are doing our own make ready for these poles?

Thanks,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



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From: Hays, Sarah K
Sent: Tuesday, March 13, 2018 5:07 PM
To: Lauren Sandefur
Subject: RE: LX Pole Photos

Lauren,

Here is the response from our engineer:

Same as K.U. with proposed make ready requests will work.

Thank you,
Sarah

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 12, 2018 9:22 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: RE: LX Pole Photos

Good Morning Sarah,
I was hoping that you had an update regarding this?
Kentucky Utilities is requiring these photos to be marked with our make ready response proposed.
So we were assuming that it would be the same for Windstream.
Thanks!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
Sent: Friday, March 9, 2018 10:08 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>
Subject: RE: LX Pole Photos

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sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Friday, March 09, 2018 8:28 AM
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Yes, our application does state that but we were wondering how you would like the pole photos. Either with existing attachments as it is today or with our make ready proposed.

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Sent: Friday, March 9, 2018 8:24 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>
Subject: RE: LX Pole Photos

Lauren,

MetroNet will need to note on the applications where they are wanting to attach and where they are wanting Windstream to lower/move to. MetroNet cannot move or touch Windstream facilities.

Let me know if you have any questions.

Thank you,

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sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Thursday, March 08, 2018 3:29 PM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
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Good afternoon Sarah,

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I would assume the second since we are doing our own make ready for these poles?

Thanks,

Lauren Sandefur
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Office: 812.213.1328
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From: Hays, Sarah K
Sent: Friday, March 09, 2018 11:08 AM
To: Lauren Sandefur
Cc: Edwards, Kimberly
Subject: RE: LX Pole Photos

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Thank you,

Sarah Hays

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sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

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Sent: Friday, March 9, 2018 8:24 AM

To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>

Cc: Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>

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o: 501.748.5864 | f: 330.486.3600

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Thanks,

Lauren Sandefur

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Office: 812.213.1328

www.MetronetInc.com

METRONET.

From: Windstream Jointuse
Sent: Wednesday, March 07, 2018 4:07 PM
To: Lauren Sandefur
Cc: Edwards, Kimberly
Subject: RE: LX132-01W
Attachments: RE: LX135-01 Metronet Application; LX135-1 - METRONET POLE INVENTORY REPORT.XLSX; WS Pole Attachment Data Sheet Exhibit B II multiple pages.pdf

Lauren,

This is the same as LX135-01W.

Windstream is rejecting this application submission.

I have attached a previous email. We do not have enough information with the files you have attached.

Windstream OSP previously stated they would accept the Pole Inventory Report in replacement of the Pole Data Sheet, but we did not receive a Pole Inventory Report with this application submission.

Please resubmit with the Pole Inventory Report or please fill out the Windstream Pole Data Sheet for each pole MetroNet is wanting to attach.

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Thursday, March 01, 2018 9:29 AM

To: Windstream Jointuse <Windstream.Jointuse@windstream.com>

Cc: Permits <Permits@metronetinc.com>

Subject: LX132-01W

Please see attached for the proposal titled LX132-01W. This is a proposal for Windstream Poles. Let me know if you have questions or anything else.

Thanks!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

LX135-1 Pole Inventory Report								
		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole Owner	Pole Capacity Utilization %	Nearest Street Name
POLE COUNT	125	1P	24380-143	50/ 2		WS	26.70	143 IDLE HOUR DR
Windstream (WS)	125	1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		2	NT	40/ 3		WS		151 IDLE HOUR DR
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		3	NT	40/ 3		WS		165 IDLE HOUR DR
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		4	NT	40/ 3		WS		183 IDLE HOUR DR
		4	NT			WS		
		4	NT			WS		
		4	NT			WS		
		4	NT			WS		
		4	NT			WS		
		4	NT			WS		
		4	NT			WS		
		5	NT	40/ 3		WS		203 IDLE HOUR DR
		5	NT			WS		
		5	NT			WS		

5	NT		WS	
5	NT		WS	
5	NT		WS	
5	NT		WS	
5	NT		WS	
5	NT		WS	
5	NT		WS	
6	NT	40/ 3	WS	211 IDLE HOUR DR
6	NT		WS	
6	NT		WS	
6	NT		WS	
6	NT		WS	
6	NT		WS	
6	NT		WS	
6	NT		WS	
7	NT	40/ 3	WS	235 IDLE HOUR DR
7	NT		WS	
7	NT		WS	
7	NT		WS	
7	NT		WS	
7	NT		WS	
7	NT		WS	
7	NT		WS	
7	NT		WS	
7	NT		WS	
8	NT	45/ 3	WS	251 IDLE HOUR DR
8	NT		WS	
8	NT		WS	
8	NT		WS	
8	NT		WS	
8	NT		WS	
8	NT		WS	
8	NT		WS	
9	NT	30/ 5	WS	259 IDLE HOUR DR
9	NT		WS	
9	NT		WS	
9	NT		WS	
9	NT		WS	
9	NT		WS	
10	NT	45/ 3	WS	259 IDLE HOUR DR
10	NT		WS	
10	NT		WS	
10	NT		WS	
10	NT		WS	
10	NT		WS	

10	NT		WS	
10	NT		WS	
11	NT	35/ 3	WS	271 IDLE HOUR DR
11	NT		WS	
11	NT		WS	
11	NT		WS	
11	NT		WS	
11	NT		WS	
11	NT		WS	
11	NT		WS	
11	NT		WS	
12	NT	40/ 3	WS	275 IDLE HOUR DR
12	NT		WS	
12	NT		WS	
12	NT		WS	
12	NT		WS	
12	NT		WS	
12	NT		WS	
12	NT		WS	
12	NT		WS	
12	NT		WS	
13	NT	40/ 4	WS	287 IDLE HOUR DR
13	NT		WS	
13	NT		WS	
13	NT		WS	
13	NT		WS	
13	NT		WS	
13	NT		WS	
13	NT		WS	
14	NT	40/ 3	WS	291 IDLE HOUR DR
14	NT		WS	
14	NT		WS	
14	NT		WS	
14	NT		WS	
14	NT		WS	
14	NT		WS	
14	NT		WS	
14	NT		WS	
15	NT	35/4	WS	121 ST MARGARET DR, 1
15	NT		WS	
15	NT		WS	
16	NT	45/ 3	WS	126 ST MARGARET DR
16	NT		WS	
16	NT		WS	
16	NT		WS	

16	NT		WS	
16	NT		WS	
16	NT		WS	
16	NT		WS	
16	NT		WS	
17	27310-125	40/ 3	WS	2047 COBURN BLVD, 12
17	27310-125		WS	
17	27310-125		WS	
17	27310-125		WS	
17	27310-125		WS	
17	27310-125		WS	
17	27310-125		WS	
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17	27310-125		WS	
17	27310-125		WS	
17	27310-125		WS	
17	27310-125		WS	
18	27310-125-02	45/ 3	WS	125 ST WILLIAM DR
18	27310-125-02		WS	
18	27310-125-02		WS	
18	27310-125-02		WS	
18	27310-125-02		WS	
18	27310-125-02		WS	
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18	27310-125-02		WS	
18	27310-125-02		WS	
18	27310-125-02		WS	
18	27310-125-02		WS	
19	27310-126-01	45/ 1	WS	126 ST WILLIAM DR
19	27310-126-01		WS	
19	27310-126-01		WS	
19	27310-126-01		WS	
19	27310-126-01		WS	
19	27310-126-01		WS	
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19	27310-126-01		WS	
19	27310-126-01		WS	
19	27310-126-01		WS	
19	27310-126-01		WS	
20	27310-126	45/ 3	WS	2115 COBURN BLVD

20	27310-126		WS	
20	27310-126		WS	
20	27310-126		WS	
20	27310-126		WS	
20	27310-126		WS	
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20	27310-126		WS	
20	27310-126		WS	
20	27310-126		WS	
20	27310-126		WS	
20	27310-126		WS	
21	27310-126-02	40/ 3	WS	125 ST JAMES DR
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
22	27220-125-01	40/ 3	WS	126 ST JAMES DR
22	27220-125-01		WS	
22	27220-125-01		WS	
22	27220-125-01		WS	
22	27220-125-01		WS	
22	27220-125-01		WS	
22	27220-125-01		WS	
22	27220-125-01		WS	
22	27220-125-01		WS	
23	27220-125	40/ 3	WS	2137 COBURN BLVD, 4
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
23	27220-125		WS	
24P	27220-127-02	40/ 2	WS	26.90 125 ST ANN DR
24P	27220-127-02		WS	

24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
25	27220-126-01	40/ 2	WS	126 ST ANN DR
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
26	27220	40/ 3	WS	2205 COBURN BLVD, 4
26	27220		WS	
26	27220		WS	
26	27220		WS	
26	27220		WS	
26	27220		WS	
26	27220		WS	
26	27220		WS	
26	27220		WS	
26	27220		WS	
27	27220-125-02	40/ 3	WS	125 ST PHILLIP DR
27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
28	27290-126-01	40/ 3	WS	126 ST PHILLIP DR
28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
29	NT	45/ 3	WS	2233 RICHMOND RD

29	NT		WS	
29	NT		WS	
29	NT		WS	
29	NT		WS	
29	NT		WS	
29	NT		WS	
30	1869446	45/ 3	WS	2233 RICHMOND RD
30	1869446		WS	
30	1869446		WS	
30	1869446		WS	
30	1869446		WS	
30	1869446		WS	
31	27295-120	45/ 3	WS	118 ST PHILLIP DR, 4
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
32P	27290-126-02	40/ 2	WS	29.20 118 ST PHILLIP DR, 4
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
33	27290-126	45/ 3	WS	122 ST PHILLIP DR
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
34	NT	35/ 5	WS	134 ST PHILLIP DR
34	NT		WS	
34	NT		WS	

34	NT		WS	
34	NT		WS	
34	NT		WS	
34	NT		WS	
34	NT		WS	
34	NT		WS	
34	NT		WS	
35	NT	40/ 3	WS	142 ST PHILLIP DR
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
35	NT		WS	
36	NT	45/ 3	WS	150 ST PHILLIP DR
36	NT		WS	
36	NT		WS	
36	NT		WS	
36	NT		WS	
36	NT		WS	
36	NT		WS	
36	NT		WS	
36	NT		WS	
36	NT		WS	
36	NT		WS	
37	NT	45/ 3	WS	158 ST PHILLIP DR
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
37	NT		WS	
38P	L27290-P166-WS	45/ 3	WS	27.60 166 ST PHILLIP DR
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	

42	27295-142		WS	
43	27295-146	45/ 3	WS	195 LIFE LN
43	27295-146		WS	
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44P	NT	50/ 2	WS	54.80 195 LIFE LN
44P	NT		WS	
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45	1869445	45/ 3	WS	166 ST PHILLIP DR
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46P	NT	40/ 3	WS	40.10 166 ST PHILLIP DR
46P	NT		WS	
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47	NT	45/ 3	WS	212 ST ANN DR
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47	NT		WS	
47	NT		WS	
48	NT	45/ 3	WS	212 ST ANN DR
48	NT		WS	
48	NT		WS	
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49	NT	45/ 3	WS	232 ST ANN DR
49	NT		WS	
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49	NT		WS	
50	L508-P1	45/ 3	WS	244 ST ANN DR
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51	L508-P2	50/ 2	WS	252 ST ANN DR
51	L508-P2		WS	
51	L508-P2		WS	
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51	L508-P2		WS	
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52	L508-P3	45/ 3	WS	260 ST ANN DR
52	L508-P3		WS	
52	L508-P3		WS	
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53	L508-P4	45/ 3	WS	264 ST ANN DR
53	L508-P4		WS	
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54	L508-P5	45/ 3	WS	1490 E NEW CIRCLE RD
54	L508-P5		WS	
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55	NT	45/ 3	WS	1490 E NEW CIRCLE RD
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60	NT	40/ 3	WS	256 ST ANN DR
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61	27220-260	40/ 2	WS	260 ST ANN DR
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62	NT	40/ 3	WS	268 ST ANN DR
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63	NT	40/ 1	WS	272 ST ANN DR
63	NT		WS	
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68P	28930-2141	40/ 3	WS	32.30 2143 WILL FANT DR, 1/2
68P	28930-2141		WS	
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68P	28930-2141		WS	
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68P	28930-2141		WS	
69	28930-2137	40/ 4	WS	2141 WILL FANT DR
69	28930-2137		WS	
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70	28930-2135	40/ 3	WS	2137 WILL FANT DR, 4
70	28930-2135		WS	
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71	28930-2129	45/ 3	WS	2133 WILL FANT DR, 4
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72	28930-2119	45/ 3	WS	2121 WILL FANT DR, 2
72	28930-2119		WS	
72	28930-2119		WS	
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73	28930-2115	45/ 3	WS	2117 WILL FANT DR, 3
73	28930-2115		WS	
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74	NT	45/ 3	WS	2216 YOUNG DR, 6
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75P	28930-2111	45/ 2	WS	25.10 2216 YOUNG DR, 7
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76	NT	40/ 4	WS	308 ST GEORGE DR
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78	NT	40/ 3	WS	2057 ST MICHAEL DR
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79	NT	40/ 3	WS	2102 WILL FANT DR
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80	NT	40/ 3	WS	2105 ST MICHAEL DR, B
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81	NT	40/ 3	WS	2128 WILL FANT DR, 6
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82	NT	40/ 3	WS	2134 WILL FANT DR
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83	27285-2049	45/ 3	WS	308 ST GEORGE DR
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84	27285-2045	45/ 3	WS	2041 ST MICHAEL DR, 6
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86P	NT	45/ 3	WS	35.50 2029 ST MICHAEL DR, 10
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88	NT	40/ 3	WS	2017 ST MICHAEL DR, 5
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89	NT	40/ 3	WS	2015 ST MICHAEL DR, 5
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90	NT	40/ 3	WS	2001 ST MICHAEL DR, 4
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92	NT	40/ 3	WS	302 IDLE HOUR DR
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97	NT	40/ 4	WS	257 ST MARGARET DR
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98	NT	40/ 3	WS	245 ST MARGARET DR
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100	24380-258	35/ 4	WS	229 ST MARGARET DR
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102	NT	40/ 3	WS	209 ST MARGARET DR
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103	24380-218	35/ 3	WS	201 ST MARGARET DR
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104	24380-210	35/ 3	WS	185 ST MARGARET DR
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105	NT	35/3	WS	181 ST MARGARET DR
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106	24380-196	40/ 3	WS	196 IDLE HOUR DR
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107	24380-188	40/ 3	WS	188 IDLE HOUR DR
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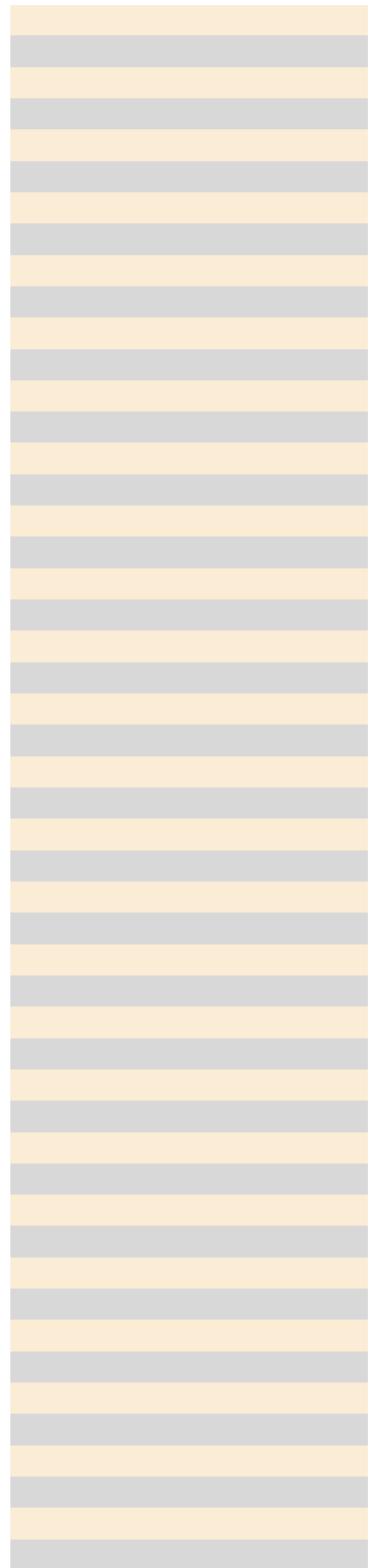
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113	24340-120		WS	
113	24340-120		WS	
113	24340-120		WS	
114	24340-114	20/ 1	WS	3408 DESTIN CT
114	24340-114		WS	
114	24340-114		WS	
114	24340-114		WS	
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114	24340-114		WS	
114	24340-114		WS	
114	24340-114		WS	
115	24340-100-20	40/ 3	WS	1000 KAVENAUGH LN
115	24340-100-20		WS	
115	24340-100-20		WS	
115	24340-100-20		WS	
115	24340-100-20		WS	
115	24340-100-20		WS	
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115	24340-100-20		WS	
115	24340-100-20		WS	
115	24340-100-20		WS	
115	24340-100-20		WS	
116P	24340-116	40/ 3	WS	26.00 100 IDLE HOUR DR, 12
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
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116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	

117	NT	40/ 3	WS	133 ST WILLIAM DR
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
118	27310-141	35/ 3	WS	141 ST WILLIAM DR
118	27310-141		WS	
118	27310-141		WS	
118	27310-141		WS	
118	27310-141		WS	
118	27310-141		WS	
118	27310-141		WS	
118	27310-141		WS	
118	27310-141		WS	
118	27310-141		WS	
119	27310-157	35/ 4	WS	149 ST WILLIAM DR
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
120	27310-165	35/ 4	WS	153 ST WILLIAM DR
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
121	27310-173	40/ 3	WS	165 ST WILLIAM DR
121	27310-173		WS	
121	27310-173		WS	
121	27310-173		WS	

121	27310-173		WS	
121	27310-173		WS	
121	27310-173		WS	
121	27310-173		WS	
121	27310-173		WS	
121	27310-173		WS	
122	27310-179	40/ 3	WS	166 ST MARGARET DR
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
122	27310-179		WS	
123	27310-177	35/4	WS	175 ST WILLIAM DR
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
123	27310-177		WS	
124	27310-181	35/ 4	WS	181 ST WILLIAM DR
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
124	27310-181		WS	
125P	27310-185	50/ 2	WS	37.10 185 ST WILLIAM DR
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	

END



Latitude	Longitude	Existing Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance to Ground	Mid Span Clearance Comm to Power	3rd Party Comm Clearance Issue At Pole Y/N
38.02332	-84.46745	KU	Primary	42'0"				N
38.02332	-84.46745	KU	Neutral	32'4"				N
38.02332	-84.46745	KU	Secondary	31'2"				N
38.02332	-84.46745	KU	Secondary	30'3"				N
38.02332	-84.46745	KU	Streetlight	28'3"				N
38.02332	-84.46745	Metronet	Communication		20'9"			N
38.02332	-84.46745	Charter	Communication	19'9"			140	N
38.02332	-84.46745	Windstream	Communication	18'8"		15'7"		N
38.02369	-84.46690	KU	Primary	32'10"				N
38.02369	-84.46690	KU	Neutral	30'3"				N
38.02369	-84.46690	KU	Secondary	29'5"				N
38.02369	-84.46690	KU	Secondary	28'9"				N
38.02369	-84.46690	Metronet	Communication		20'0"			N
38.02369	-84.46690	Charter	Communication	19'0"			157	N
38.02369	-84.46690	Windstream	Communication	17'10"		17'1"		N
38.02408	-84.46637	KU	Primary	33'2"				N
38.02408	-84.46637	KU	Transformer	26'3"				N
38.02408	-84.46637	KU	Neutral	26'0"				N
38.02408	-84.46637	KU	Secondary	25'3"				N
38.02408	-84.46637	KU	Secondary	24'8"				N
38.02408	-84.46637	KU	Secondary Riser	23'6"				N
38.02408	-84.46637	Metronet	Communication		19'10"			N
38.02408	-84.46637	Charter	Communication	18'10"			64	N
38.02408	-84.46637	Windstream	Communication	17'8"		14'9"		N
38.02444	-84.46589	KU	Primary	32'0"				N
38.02444	-84.46589	KU	Neutral	30'0"				N
38.02444	-84.46589	KU	Secondary	29'4"				N
38.02444	-84.46589	KU	Secondary	28'9"				N
38.02444	-84.46589	KU	OH Guy	27'4"				N
38.02444	-84.46589	Metronet	Communication		20'2"			N
38.02444	-84.46589	Charter	Communication	19'2"			110	N
38.02444	-84.46589	Windstream	Communication	18'1"		14'6"		N
38.02477	-84.46540	KU	Primary	32'1"				N
38.02477	-84.46540	KU	Secondary Riser	30'7"				N
38.02477	-84.46540	KU	Neutral	29'10"				N

38.02477	-84.46540	KU	Neutral	29'5"		N
38.02477	-84.46540	KU	Secondary	28'9"		N
38.02477	-84.46540	KU	Secondary	28'0"		N
38.02477	-84.46540	KU	OH Guy	27'1"		N
38.02477	-84.46540	Metronet	Communication		19'7"	N
38.02477	-84.46540	Charter	Communication	18'7"		95 N
38.02477	-84.46540	Windstream	Communication	17'4"	16'4"	N
38.02519	-84.46487	KU	Primary	33'0"		N
38.02519	-84.46487	KU	Neutral	30'4"		N
38.02519	-84.46487	KU	Secondary	29'8"		N
38.02519	-84.46487	KU	Secondary	28'10"		N
38.02519	-84.46487	KU	Streetlight	25'11"		N
38.02519	-84.46487	Metronet	Communication		20'1"	N
38.02519	-84.46487	Charter	Communication	19'1"		87 N
38.02519	-84.46487	Windstream	Communication	17'10"	12'11"	N
38.02553	-84.46436	KU	Primary	32'8'		Y
38.02553	-84.46436	KU	Neutral	30'6"		Y
38.02553	-84.46436	KU	Secondary	29'7"		Y
38.02553	-84.46436	KU	Secondary	28'10"		Y
38.02553	-84.46436	KU	Secondary Riser	24'9"		Y
38.02553	-84.46436	KU	Transformer	24'5"		Y
38.02553	-84.46436	KU	Secondary Riser	21'2"	23'4"	Y
38.02553	-84.46436	Metronet	Communication		20'0"	Y
38.02553	-84.46436	Charter	Communication	19'0"		88 Y
38.02553	-84.46436	Windstream	Communication	17'11"	16'10"	Y
38.02591	-84.46383	KU	Primary	35'4"		N
38.02591	-84.46383	KU	Neutral	32'5"		N
38.02591	-84.46383	KU	Secondary	31'7"		N
38.02591	-84.46383	KU	Secondary	30'11"		N
38.02591	-84.46383	KU	Secondary Riser	28'9"		N
38.02591	-84.46383	Metronet	Communication		21'8"	N
38.02591	-84.46383	Charter	Communication	20'8"		70 N
38.02591	-84.46383	Windstream	Communication	19'5"	18'5"	N
38.02609	-84.46356	KU	Neutral	24'9"		N
38.02609	-84.46356	KU	Secondary	24'5"		N
38.02609	-84.46356	KU	Secondary	23'10"		N
38.02609	-84.46356	Metronet	Communication		19'8"	N
38.02609	-84.46356	Charter	Communication	18'8"		60 N
38.02609	-84.46356	Windstream	Communication	17'7"	17'8"	N
38.02632	-84.46331	KU	Primary	34'9"		N
38.02632	-84.46331	KU	Neutral	32'3"		N
38.02632	-84.46331	KU	Secondary	31'7"		N
38.02632	-84.46331	KU	Secondary	30'9"		N
38.02632	-84.46331	KU	Transformer	24'3"		N
38.02632	-84.46331	Metronet	Communication		19'11"	N

38.02632	-84.46331	Charter	Communication	20'4"	18'11"		57	N
38.02632	-84.46331	Windstream	Communication	18'8"	17'11"	16'0"		N
38.02665	-84.46278	KU	Primary	29'0"				Y
38.02665	-84.46278	KU	Neutral	26'7"				Y
38.02665	-84.46278	KU	Secondary	25'5"				Y
38.02665	-84.46278	KU	Secondary	24'6"				Y
38.02665	-84.46278	KU	Secondary Riser	23'3"				Y
38.02665	-84.46278	KU	Secondary Riser	21'9"				Y
38.02665	-84.46278	Metronet	Communication		18'5"			Y
38.02665	-84.46278	Charter	Communication	19'2"	17'5"		73	Y
38.02665	-84.46278	Windstream	Communication	17'11"	16'5"	16'4"		Y
38.02702	-84.46228	KU	Primary	33'2"				Y
38.02702	-84.46228	KU	Neutral	29'6"				Y
38.02702	-84.46228	KU	Secondary	28'10"				Y
38.02702	-84.46228	KU	Secondary	28'1"				Y
38.02702	-84.46228	KU	Transformer	23'2"				Y
38.02702	-84.46228	KU	Secondary Drip Loop	21'5"				Y
38.02702	-84.46228	Metronet	Communication		18'1"			Y
38.02702	-84.46228	Charter	Communication	19'9"	17'1"		53	Y
38.02702	-84.46228	Windstream	Communication	18'7"	16'1"	19'7"		Y
38.02740	-84.46174	KU	Primary	33'10"				N
38.02740	-84.46174	KU	Neutral	30'4"				N
38.02740	-84.46174	KU	Secondary	28'10"				N
38.02740	-84.46174	KU	Secondary	27'6"				N
38.02740	-84.46174	KU	Secondary Riser	26'10"				N
38.02740	-84.46174	Metronet	Communication		23'1"			N
38.02740	-84.46174	Charter	Communication	22'1"			34	N
38.02740	-84.46174	Windstream	Communication	20'9"		19'7"		N
38.02778	-84.46125	KU	Primary	33'4"				N
38.02778	-84.46125	KU	Transformer	27'7"				N
38.02778	-84.46125	KU	Neutral	26'2"				N
38.02778	-84.46125	KU	Secondary	25'5"				N
38.02778	-84.46125	KU	Secondary	24'10"				N
38.02778	-84.46125	KU	Secondary Riser	24'2"				N
38.02778	-84.46125	Metronet	Communication		20'10"			N
38.02778	-84.46125	Charter	Communication	20'7"	19'10"		36	N
38.02778	-84.46125	Windstream	Communication	19'6"	18'10"	19'3"		N
38.02171	-84.46651	KU	Primary	28'8"		29'10"		N
38.02171	-84.46651	KU	Secondary	21'2"				N
38.02171	-84.46651	Metronet	Communication		17'10"			N
38.02139	-84.46603	KU	Primary	34'8"				N
38.02139	-84.46603	KU	Transformer	27'0"				N
38.02139	-84.46603	KU	Neutral	25'11"				N
38.02139	-84.46603	KU	Secondary	25'2"				N

38.02139	-84.46603	KU	Secondary	24'6"			N
38.02139	-84.46603	KU	Streetlight	23'5"			N
38.02139	-84.46603	Metronet	Communication		21'2"		N
38.02139	-84.46603	Charter	Communication	20'6'	19'3"		23 N
38.02139	-84.46603	Windstream	Communication	19'3"	18'3"	16'5"	N
38.02117	-84.46575	KU	Primary	32'9"			Y
38.02117	-84.46575	KU	Primary	30'5"			Y
38.02117	-84.46575	KU	Transformer	25'6"			Y
38.02117	-84.46575	KU	Neutral	23'11"	24'10"		Y
38.02117	-84.46575	KU	Secondary	23'1"	24'2"		Y
38.02117	-84.46575	KU	Secondary	22'4"	23'6"		Y
38.02117	-84.46575	KU	Streetlight	21'4"			Y
38.02117	-84.46575	KU	Streetlight Drip Loop	20'11"	21'4"		Y
38.02117	-84.46575	Metronet	Communication		20'2"		Y
38.02117	-84.46575	Metronet	Communication		19'10"		Y
38.02117	-84.46575	Charter	Communication	19'2"			Y
38.02117	-84.46575	Charter	Communication	18'11"			44 Y
38.02117	-84.46575	Windstream	Communication	18'5"			Y
38.02117	-84.46575	Windstream	Communication	18'2"			Y
38.02117	-84.46575	Windstream	Communication	17'9"			Y
38.02117	-84.46575	Windstream	Communication	17'5"			Y
38.02117	-84.46575	Windstream	Communication	16'10"			Y
38.02117	-84.46575	Windstream	Communication	16'4"		15'5"	Y
38.02091	-84.46549	KU	Primary	39'8"			N
38.02091	-84.46549	KU	Transformer	31'5"			N
38.02091	-84.46549	KU	Neutral	30'3"			N
38.02091	-84.46549	KU	Secondary	29'1"			N
38.02091	-84.46549	KU	Secondary	28'4"			N
38.02091	-84.46549	KU	Streetlight	26'3"			N
38.02091	-84.46549	KU	Streetlight Drip Loop	25'7"			N
38.02091	-84.46549	Metronet	Communication		21'6"		N
38.02091	-84.46549	Charter	Communication	20'6"			113 N
38.02091	-84.46549	Windstream	Communication	19'4"			N
38.02091	-84.46549	Windstream	Communication	18'3"			N
38.02091	-84.46549	Windstream	Communication	17'3"		16'6"	N
38.02064	-84.46514	KU	Primary	38'6"			N
38.02064	-84.46514	KU	Neutral	30'10"			N
38.02064	-84.46514	KU	Secondary	29'11"			N
38.02064	-84.46514	KU	Secondary	28'11"			N
38.02064	-84.46514	KU	Streetlight	27'6"			N
38.02064	-84.46514	Metronet	Communication		22'7"		N
38.02064	-84.46514	Charter	Communication	21'3"			72 N
38.02064	-84.46514	Windstream	Communication	20'2"			N
38.02064	-84.46514	Windstream	Communication	19'0"			N
38.02064	-84.46514	Windstream	Communication	18'0"		15'2"	N
38.02041	-84.46491	KU	Primary	38'0"			N

38.02041	-84.46491	KU	Primary	33'6"		N	
38.02041	-84.46491	KU	Transformer	27'4"		N	
38.02041	-84.46491	KU	Neutral	26'9"		N	
38.02041	-84.46491	KU	Secondary	25'6"		N	
38.02041	-84.46491	KU	Secondary	24'3"		N	
38.02041	-84.46491	Metronet	Communication		20'2"	N	
38.02041	-84.46491	Metronet	Communication		19'10"	N	
38.02041	-84.46491	Charter	Communication	18'10"		22 N	
38.02041	-84.46491	Charter	Communication	17'10"		N	
38.02041	-84.46491	Windstream	Communication	16'10"		N	
38.02041	-84.46491	Windstream	Communication	16'2"		N	
38.02041	-84.46491	Windstream	Communication	15'9"		N	
38.02041	-84.46491	Windstream	Communication	15'1"		N	
38.02041	-84.46491	Windstream	Communication	14'7"		N	
38.02041	-84.46491	Windstream	Communication	14'1"	16'2"	N	
38.02041	-84.46491	Windstream	Communication	13'7"		N	
38.02012	-84.46461	KU	Primary	33'7'		N	
38.02012	-84.46461	KU	Neutral	26'2"		N	
38.02012	-84.46461	KU	Secondary Riser	25'6"		N	
38.02012	-84.46461	KU	Secondary	25'1'		N	
38.02012	-84.46461	KU	Secondary	24'3"		N	
38.02012	-84.46461	Metronet	Communication		20'11"	N	
38.02012	-84.46461	Charter	Communication	19'11"		71 N	
38.02012	-84.46461	Windstream	Communication	19'0"		N	
38.02012	-84.46461	Windstream	Communication	18'0"	19'7"	N	
38.01986	-84.46426	KU	Primary	33'7"		N	
38.01986	-84.46426	KU	Neutral	26'1"		N	
38.01986	-84.46426	KU	Secondary	25'1"		N	
38.01986	-84.46426	KU	Secondary	24'2"		N	
38.01986	-84.46426	Metronet	Communication		20'10"	N	
38.01986	-84.46426	Charter	Communication	19'10"		49 N	
38.01986	-84.46426	Windstream	Communication	18'10"		N	
38.01986	-84.46426	Windstream	Communication	17'10"	13'6"	N	
38.01964	-84.46403	KU	Primary		32'8"	N	
38.01964	-84.46403	KU	Transformer		25'10"	N	
38.01964	-84.46403	KU	Neutral		24'10"	N	
38.01964	-84.46403	KU	Secondary		24'2"	N	
38.01964	-84.46403	KU	Secondary		23'6"	N	
38.01964	-84.46403	KU	Streetlight		21'2"	N	
38.01964	-84.46403	Metronet	Communication		20'2"	N	
38.01964	-84.46403	Metronet	Communication		19'10"	N	
38.01964	-84.46403	Charter	Communication		18'10"	71 N	
38.01964	-84.46403	Windstream	Communication		17'10"	N	
38.01964	-84.46403	Windstream	Communication		17'6"	15'1"	N
38.01941	-84.46376	KU	Primary		33'2"	N	
38.01941	-84.46376	KU	Primary		32'10"	N	

38.01941	-84.46376	KU	Neutral		27'10"		N
38.01941	-84.46376	KU	Secondary		26'10"		N
38.01941	-84.46376	KU	Secondary		25'10"		N
38.01941	-84.46376	Metronet	Communication		22'6"		N
38.01941	-84.46376	Charter	Communication		21'6"		74 N
38.01941	-84.46376	Windstream	Communication		20'6"		N
38.01941	-84.46376	Windstream	Communication		19'6"	17'6"	N
38.01912	-84.46343	KU	Primary		33'11"		N
38.01912	-84.46343	KU	Neutral		26'3"		N
38.01912	-84.46343	KU	Secondary		25'6"		N
38.01912	-84.46343	KU	Secondary		24'9"		N
38.01912	-84.46343	Metronet	Communication		21'4"		N
38.01912	-84.46343	Charter	Communication		21'4"	20'4"	35 N
38.01912	-84.46343	Windstream	Communication		19'2"		N
38.01912	-84.46343	Windstream	Communication		18'3"	16'5"	N
38.01890	-84.46321	KU	Primary		34'0"		N
38.01890	-84.46321	KU	Transformer		27'8"		N
38.01890	-84.46321	KU	Neutral		26'8"		N
38.01890	-84.46321	KU	Secondary		25'8"		N
38.01890	-84.46321	KU	Secondary		24'8"		N
38.01890	-84.46321	KU	Streetlight		23'8"		N
38.01890	-84.46321	Metronet	Communication		21'4"		N
38.01890	-84.46321	Charter	Communication		20'4"		41 N
38.01890	-84.46321	Windstream	Communication		19'4"		N
38.01890	-84.46321	Windstream	Communication		18'4"	16'0"	N
38.01867	-84.46295	KU	Primary		32'10"		Y
38.01867	-84.46295	KU	Neutral		25'9"		Y
38.01867	-84.46295	KU	Secondary		25'0"		Y
38.01867	-84.46295	KU	Secondary Riser		24'8"		Y
38.01867	-84.46295	KU	Secondary		24'4"		Y
38.01867	-84.46295	KU	Secondary Drip Loop		23'10"		Y
38.01867	-84.46295	Metronet	Communication		20'6"		Y
38.01867	-84.46295	Charter	Communication		20'9"	19'6"	42 Y
38.01867	-84.46295	Windstream	Communication		19'9"	18'6"	Y
38.01867	-84.46295	Windstream	Communication		18'10"	17'6" 17'5"	Y
38.01841	-84.46261	KU	Primary		33'10"		N
38.01841	-84.46261	KU	Neutral		25'9"		N
38.01841	-84.46261	KU	Secondary Riser		25'2"		N
38.01841	-84.46261	KU	Secondary		24'5"		N
38.01841	-84.46261	KU	Secondary		23'9"		N
38.01841	-84.46261	Metronet	Communication		20'3"		N
38.01841	-84.46261	Charter	Communication		20'3"	19'3"	UNK N
38.01841	-84.46261	Windstream	Communication		19'2"	18'3"	N
38.01841	-84.46261	Windstream	Communication		18'1"	17'3" UNK	N
38.01734	-84.46321	KU	Primary		35'5"		Y

38.01734 -84.46321	KU	Neutral	27'11"				Y
38.01734 -84.46321	KU	Primary Riser	27'4"				Y
38.01734 -84.46321	Metronet	Communication		23'2"			Y
38.01734 -84.46321	Charter	Communication	24'7"	22'1"			57 Y
38.01734 -84.46321	Windstream	Communication	23'2"	21'1"			Y
38.01734 -84.46321	Windstream	Communication	22'1"	20'1"	21'3"		Y
38.01751 -84.46297	KU	Primary	35'3"				Y
38.01751 -84.46297	KU	Neutral	28'6"				Y
38.01751 -84.46297	Metronet	Communication		25'2"			Y
38.01751 -84.46297	Charter	Communication	25'5"	24'2"			55 Y
38.01751 -84.46297	Windstream	Communication	24'8"	23'2"			Y
38.01751 -84.46297	Windstream	Communication	23'6"	22'2"	20'7"		Y
38.01783 -84.46251	KU	Primary	38'7"				N
38.01783 -84.46251	KU	Primary Riser	31'11"				N
38.01783 -84.46251	KU	Neutral	30'11"				N
38.01783 -84.46251	Metronet	Communication		27'7"			N
38.01783 -84.46251	Charter	Communication	27'7"	26'7"	22'4"	N/A	N
38.01783 -84.46251	Windstream	Communication	26'2"	25'7"			N
38.01783 -84.46251	Windstream	Communication	25'3"	24'7"			N
38.01805 -84.46255	KU	Primary	33'0"				N
38.01805 -84.46255	KU	Transformer	27'2"				N
38.01805 -84.46255	KU	Neutral	25'7"				N
38.01805 -84.46255	KU	Secondary Riser	24'7"				N
38.01805 -84.46255	KU	Down Guy	24'3"				N
38.01805 -84.46255	Metronet	Communication		21'3"			N
38.01805 -84.46255	Metronet	Communication		20'11"			N
38.01805 -84.46255	Charter	Communication	20'11"	20'3"			N
38.01805 -84.46255	Charter	Communication	19'9"				85 N
38.01805 -84.46255	Windstream	Communication	18'7"				N
38.01805 -84.46255	Windstream	Communication	17'8"		15'1"		N
38.01820 -84.46238	KU	Primary		37'8"			N
38.01820 -84.46238	KU	Primary		34'8"			N
38.01820 -84.46238	KU	Neutral		28'8"			N
38.01820 -84.46238	KU	Secondary		27'8"			N
38.01820 -84.46238	KU	Secondary		26'8"			N
38.01820 -84.46238	KU	Transformer		29'8"			N
38.01820 -84.46238	Metronet	Communication		23'4"			N
38.01820 -84.46238	Charter	Communication		22'4"			40 N
38.01820 -84.46238	Windstream	Communication		21'4"			N
38.01820 -84.46238	Windstream	Communication		21'0"			N
38.01820 -84.46238	Windstream	Communication		20'4"			N
38.01820 -84.46238	Windstream	Communication		20'0"	12'10"		N
38.01842 -84.46205	KU	Primary	29'0"				Y
38.01842 -84.46205	KU	Neutral	22'11"				Y
38.01842 -84.46205	KU	Secondary	22'1"				Y

38.01842	-84.46205	KU	Secondary	21'4"			Y
38.01842	-84.46205	KU	Secondary Riser	20'9"			Y
38.01842	-84.46205	Metronet	Communication		17'6"		Y
38.01842	-84.46205	Charter	Communication	18'3"	16'6"		40 Y
38.01842	-84.46205	Windstream	Communication	17'6"	15'5"		Y
38.01842	-84.46205	Windstream	Communication	16'9"	14'5"		Y
38.01842	-84.46205	Windstream	Communication	15'5"	13'5"	12'2"	Y
38.01867	-84.46175	KU	Primary	33'5"			Y
38.01867	-84.46175	KU	Transformer	26'7"			Y
38.01867	-84.46175	KU	Neutral	26'2"			Y
38.01867	-84.46175	KU	Secondary	25'5"			Y
38.01867	-84.46175	KU	Secondary	24'9"			Y
38.01867	-84.46175	KU	Secondary Riser	20'7"	24'0"		Y
38.01867	-84.46175	Metronet	Communication		19'8"		Y
38.01867	-84.46175	Charter	Communication	18'8"			76 Y
38.01867	-84.46175	Windstream	Communication	17'11"			Y
38.01867	-84.46175	Windstream	Communication	17'4"			Y
38.01867	-84.46175	Windstream	Communication	16'2"			Y
38.01867	-84.46175	Windstream	Communication	14'9"		12'7"	Y
38.01885	-84.46142	KU	Primary	36'1"			N
38.01885	-84.46142	KU	Primary	35'8"			N
38.01885	-84.46142	KU	Neutral	28'10"			N
38.01885	-84.46142	KU	Secondary	28'1"			N
38.01885	-84.46142	KU	Secondary	27'5"			N
38.01885	-84.46142	Metronet	Communication		21'5"		N
38.01885	-84.46142	Charter	Communication	20'5"			69 N
38.01885	-84.46142	Windstream	Communication	19'2"			N
38.01885	-84.46142	Windstream	Communication	18'1"			N
38.01885	-84.46142	Windstream	Communication	16'0"		12'6"	N
38.01905	-84.46110	KU	Primary	36'5"			N
38.01905	-84.46110	KU	Primary	36'0"			N
38.01905	-84.46110	KU	Transformer	29'6"			N
38.01905	-84.46110	KU	Neutral	28'6"			N
38.01905	-84.46110	KU	Secondary	27'9"			N
38.01905	-84.46110	KU	Secondary	27'0"			N
38.01905	-84.46110	KU	Secondary Riser	25'3"	26'6"		N
38.01905	-84.46110	Metronet	Communication		22'5"		N
38.01905	-84.46110	Charter	Communication	21'5"			58 N
38.01905	-84.46110	Windstream	Communication	20'8"			N
38.01905	-84.46110	Windstream	Communication	19'9"			N
38.01905	-84.46110	Windstream	Communication	18'3"		13'2"	N
38.01931	-84.46081	KU	Primary	36'5"			N
38.01931	-84.46081	KU	Primary	35'10"			N
38.01931	-84.46081	KU	Primary	31'10"			N
38.01931	-84.46081	KU	Neutral	28'1"			N
38.01931	-84.46081	KU	Neutral	27'7"			N

38.01931	-84.46081	KU	Secondary	26'9"				N
38.01931	-84.46081	KU	Secondary	26'0"				N
38.01931	-84.46081	KU	Down Guy	24'11"				N
38.01931	-84.46081	Metronet	Communication		19'0"			N
38.01931	-84.46081	Metronet	Communication		18'8"			N
38.01931	-84.46081	Charter	Down Guy	17'8"		16'10"		82 N
38.01931	-84.46081	Charter	Communication	17'2"				N
38.01931	-84.46081	Charter	Communication	17'0"				N
38.01931	-84.46081	Windstream	Communication	16'5"				N
38.01931	-84.46081	Windstream	Communication	15'6"				N
38.01931	-84.46081	Windstream	Communication	13'7"				N
38.01926	-84.46075	KU	Primary	30'0"				N
38.01926	-84.46075	KU	Recloser Bank	24'8"				N
38.01926	-84.46075	KU	Neutral	24'0"				N
38.01926	-84.46075	Metronet	Communication		20'8"			N
38.01926	-84.46075	Charter	Communication	19'8"	19'6"	UNK	UNK	N
38.01913	-84.46070	KU	Primary	37'3"				N
38.01913	-84.46070	KU	Primary	37'0"				N
38.01913	-84.46070	KU	Primary	33'10"				N
38.01913	-84.46070	KU	Neutral	29'9"				N
38.01913	-84.46070	KU	Down Guy	28'9"				N
38.01913	-84.46070	Metronet	Communication		24'0"			N
38.01913	-84.46070	Charter	Communication	23'0"				N
38.01913	-84.46070	Windstream	Communication	22'0"				49 N
38.01913	-84.46070	Windstream	Communication	21'5"				N
38.01913	-84.46070	Windstream	Communication	21'0"				N
38.01913	-84.46070	Windstream	Communication	20'5"				N
38.01913	-84.46070	Windstream	Communication	19'3"				N
38.01913	-84.46070	Windstream	Communication	18'10"		18'6"		N
38.01913	-84.46070	Windstream	Communication	18'6"				N
38.01883	-84.46017	KU	Primary	37'1"				Y
38.01883	-84.46017	KU	Transformer	29'1"				Y
38.01883	-84.46017	KU	Neutral	28'9"				Y
38.01883	-84.46017	KU	Secondary	28'4"				Y
38.01883	-84.46017	KU	Primary Riser	26'6"				Y
38.01883	-84.46017	Metronet	Communication		22'6"			Y
38.01883	-84.46017	Charter	Communication	24'3"	21'6"			28 Y
38.01883	-84.46017	Windstream	Communication	23'2"	20'6"			Y
38.01883	-84.46017	Windstream	Communication	22'1"	19'6"			Y
38.01883	-84.46017	Windstream	Communication	21'0"	18'6"	16'7"		Y
38.01862	-84.45975	KU	Primary	36'4"				N
38.01862	-84.45975	KU	Neutral	30'1"				N
38.01862	-84.45975	Metronet	Communication		24'7"			N
38.01862	-84.45975	Charter	Communication	23'7"				56 N
38.01862	-84.45975	Windstream	Communication	22'6"				N
38.01862	-84.45975	Windstream	Communication	21'5"				N

38.01862	-84.45975	Windstream	Communication	20'2"	17'5"	N
38.01841	-84.45937	KU	Primary	37'0"		N
38.01841	-84.45937	KU	Neutral	30'0"		N
38.01841	-84.45937	Metronet	Communication		24'7"	N
38.01841	-84.45937	Charter	Communication	23'7"		52 N
38.01841	-84.45937	Windstream	Communication	22'4"		N
38.01841	-84.45937	Windstream	Communication	21'1"		N
38.01841	-84.45937	Windstream	Communication	20'0"	15'11"	N
38.01827	-84.45874	KU	Primary	42'3"		N
38.01827	-84.45874	KU	Primary	38'9"		N
38.01827	-84.45874	KU	Neutral	32'8"		N
38.01827	-84.45874	KU	Neutral	32'3"		N
38.01827	-84.45874	Metronet	Communication		26'6"	N
38.01827	-84.45874	Charter	Communication	25'6"		59 N
38.01827	-84.45874	Windstream	Communication	24'3"		N
38.01827	-84.45874	Windstream	Communication	23'3"		N
38.01827	-84.45874	Windstream	Communication	21'11"	19'11"	N
38.01937	-84.46031	KU	Primary	36'10"		N
38.01937	-84.46031	KU	Neutral	25'11"		N
38.01937	-84.46031	Metronet	Communication		21'8"	N
38.01937	-84.46031	Charter	Communication	20'8"	21'4"	71 N
38.01947	-84.46018	KU	Primary	34'7"		N
38.01947	-84.46018	KU	Primary	33'11"		N
38.01947	-84.46018	KU	Primary	30'8"		N
38.01947	-84.46018	KU	Neutral	26'10"		N
38.01947	-84.46018	KU	Secondary	26'4"		N
38.01947	-84.46018	Metronet	Communication		21'9"	N
38.01947	-84.46018	Charter	Communication	20'9"	14'10"	106 N
38.01996	-84.45953	KU	Primary	36'10"		N
38.01996	-84.45953	KU	Neutral	29'11"		N
38.01996	-84.45953	KU	Transformer	29'3"		N
38.01996	-84.45953	KU	Secondary	28'7"		N
38.01996	-84.45953	KU	Secondary Riser	26'8"		N
38.01996	-84.45953	Metronet	Communication		22'10"	N
38.01996	-84.45953	Charter	Communication	21'10"		89 N
38.01996	-84.45953	Windstream	Communication	20'11"	14'6"	N
38.02049	-84.45879	KU	Primary	38'0"		N
38.02049	-84.45879	KU	Neutral	30'6"		N
38.02049	-84.45879	KU	Secondary	29'3"		N
38.02049	-84.45879	KU	Streetlight	26'10"		N
38.02049	-84.45879	Metronet	Communication		23'4"	N
38.02049	-84.45879	Charter	Communication	22'4"		104 N
38.02049	-84.45879	Windstream	Communication	21'7"	15'6"	N

38.02093	-84.45819	KU	Primary	37'9"			N
38.02093	-84.45819	KU	Transformer	30'10"			N
38.02093	-84.45819	KU	Neutral	30'7"			N
38.02093	-84.45819	Metronet	Communication		24'5"		N
38.02093	-84.45819	Charter	Communication	23'5"	23'2"	28	N
38.02093	-84.45819	Windstream	Communication	22'5"			N
38.02127	-84.45765	KU	Primary	37'2"			N
38.02127	-84.45765	KU	Neutral	30'3"			N
38.02127	-84.45765	Metronet	Communication		24'0"		N
38.02127	-84.45765	Windstream	Communication	23'0"	23'3"	57	N
38.02127	-84.45765	Charter	Communication	22'2"			N
38.02171	-84.45703	KU	Primary	43'1"			N
38.02171	-84.45703	KU	Transformer	36'6"			N
38.02171	-84.45703	KU	Neutral	36'0"			N
38.02171	-84.45703	KU	Secondary Riser	33'4"			N
38.02171	-84.45703	Metronet	Communication		28'0"		N
38.02171	-84.45703	Windstream	Communication	27'0"	29'8"	84	N
38.02215	-84.45655	KU	Primary	36'3"			N
38.02215	-84.45655	KU	Capacitor Bank	30'6"			N
38.02215	-84.45655	KU	Neutral	29'4"			N
38.02215	-84.45655	KU	Secondary	28'4"			N
38.02215	-84.45655	Metronet	Communication		25'1"		N
38.02215	-84.45655	Windstream	Communication	24'1"	21'8"	54	N
38.02212	-84.45645	KU	Primary	33'3"			N
38.02212	-84.45645	KU	Primary Riser	27'2"			N
38.02212	-84.45645	KU	Neutral	25'5"			N
38.02212	-84.45645	KU	Streetlight	23'7"			N
38.02212	-84.45645	Metronet	Communication		22'1"		N
38.02212	-84.45645	Windstream	Communication	21'1"	19'6"	55	N
38.02252	-84.45588	KU	Primary	37'10"			N
38.02252	-84.45588	KU	Transformer	28'1"			N
38.02252	-84.45588	KU	Neutral	27'6"			N
38.02252	-84.45588	KU	Secondary	26'3"			N
38.02252	-84.45588	KU	Secondary	25'3"			N
38.02252	-84.45588	KU	Streetlight	22'11"			N
38.02252	-84.45588	KU	Streetlight Drip Loop	22'5"	22'11"		N
38.02252	-84.45588	Metronet	Communication		21'11"		N
38.02252	-84.45588	Charter	Communication	20'0"			N
38.02252	-84.45588	Windstream	Communication	20'2"		40	N
38.02252	-84.45588	Windstream	Communication	19'5"	18'8"		N
38.02293	-84.45536	KU	Primary	37'5"			N
38.02293	-84.45536	KU	Neutral	29'7"			N
38.02293	-84.45536	KU	Secondary	29'0"			N
38.02293	-84.45536	KU	Secondary	27'9"			N

38.02293	-84.45536	KU	Streetlight	27'2"			N
38.02293	-84.45536	Metronet	Communication		24'5"		N
38.02293	-84.45536	Charter	Communication	24'0"	23'5"		33 N
38.02293	-84.45536	Windstream	Communication	22'11"	22'5"	22'2"	N
38.02328	-84.45484	KU	Primary	42'5"			N
38.02328	-84.45484	KU	Primary	39'1"			N
38.02328	-84.45484	KU	Neutral	30'9"			N
38.02328	-84.45484	KU	Secondary	29'11"			N
38.02328	-84.45484	KU	Secondary Riser	29'8"			N
38.02328	-84.45484	Metronet	Communication		26'4"		N
38.02328	-84.45484	Charter	Communication	25'4"			60 N
38.02328	-84.45484	Charter	Communication	24'2"			N
38.02328	-84.45484	Charter	Communication	23'0"			N
38.02328	-84.45484	Windstream	Communication	19'3"		18'3"	N
38.02107	-84.45838	KU	Primary	39'0"			N
38.02107	-84.45838	KU	Primary	34'4"			N
38.02107	-84.45838	KU	Neutral	29'2"			N
38.02107	-84.45838	KU	Neutral	28'11"			N
38.02107	-84.45838	KU	Secondary	28'7"			N
38.02107	-84.45838	KU	Secondary	28'2"			N
38.02107	-84.45838	KU	Secondary	27'11"			N
38.02107	-84.45838	KU	Secondary	27'1"			N
38.02107	-84.45838	Metronet	Communication		22'7"		N
38.02107	-84.45838	Charter	Communication	21'7"			61 N
38.02107	-84.45838	Charter	Communication	20'7"			N
38.02107	-84.45838	Windstream	Communication	19'5"			N
38.02107	-84.45838	Windstream	Communication	18'10"			N
38.02107	-84.45838	Windstream	Communication	18'5"			N
38.02107	-84.45838	Windstream	Communication	18'0"			N
38.02107	-84.45838	Windstream	Communication	17'3"			N
38.02107	-84.45838	Windstream	Communication	16'4"			N
38.02107	-84.45838	Windstream	Communication	15'7"		10'8"	N
38.02138	-84.45792	KU	Primary	31'10"			Y
38.02138	-84.45792	KU	Neutral	29'0"			Y
38.02138	-84.45792	KU	Secondary	28'0"			Y
38.02138	-84.45792	KU	Secondary	27'5"			Y
38.02138	-84.45792	KU	Transformer	22'5"			Y
38.02138	-84.45792	Metronet	Communication		19'1"		Y
38.02138	-84.45792	Charter	Communication	19'6"	18'2"		UNK Y
38.02138	-84.45792	Windstream	Communication	18'2"	17'2"		Y
38.02138	-84.45792	Windstream	Communication	16'9"	16'2"		Y
38.02138	-84.45792	Windstream	Communication	15'8"	15'2"		Y
38.02138	-84.45792	Windstream	Communication	14'6"	14'2"	UNK	Y
38.02162	-84.45758	KU	Primary	37'4"			N
38.02162	-84.45758	KU	Neutral	33'0"			N
38.02162	-84.45758	KU	Secondary	32'3"			N

38.02162	-84.45758	KU	Secondary	31'7"		N
38.02162	-84.45758	Metronet	Communication		24'4"	N
38.02162	-84.45758	Charter	Communication	23'4"		84 N
38.02162	-84.45758	Windstream	Communication	22'5"		N
38.02162	-84.45758	Windstream	Communication	21'6"		N
38.02162	-84.45758	Windstream	Communication	20'5"		N
38.02162	-84.45758	Windstream	Communication	19'5"	17'0"	N
38.02187	-84.45727	KU	Primary	32'3"		N
38.02187	-84.45727	KU	Neutral	28'10"		N
38.02187	-84.45727	KU	Secondary	28'1"		N
38.02187	-84.45727	KU	Secondary	27'6"		N
38.02187	-84.45727	Metronet	Communication		21'10"	N
38.02187	-84.45727	Charter	Communication	20'10"		56 N
38.02187	-84.45727	Windstream	Communication	18'9"		N
38.02187	-84.45727	Windstream	Communication	17'7"		N
38.02187	-84.45727	Windstream	Communication	16'6"		N
38.02187	-84.45727	Windstream	Communication	15'5"	14'11"	N
38.02208	-84.45694	KU	Primary	34'2"		N
38.02208	-84.45694	KU	Neutral	27'0"		N
38.02208	-84.45694	KU	Secondary	26'4"		N
38.02208	-84.45694	KU	Secondary	25'8"		N
38.02208	-84.45694	Metronet	Communication		22'4"	N
38.02208	-84.45694	Charter	Communication	21'5"		16'11" N
38.02208	-84.45694	Windstream	Communication	20'5"		N
38.02208	-84.45694	Windstream	Communication	19'3"		N
38.02208	-84.45694	Windstream	Communication	18'5"		N
38.02208	-84.45694	Windstream	Communication	17'5"	12'11"	N
38.02236	-84.45662	KU	Primary	33'11"		N
38.02236	-84.45662	KU	Transformer	27'3"		N
38.02236	-84.45662	KU	Neutral	26'6"		N
38.02236	-84.45662	KU	Secondary	25'11"		N
38.02236	-84.45662	KU	Secondary	25'3"		N
38.02236	-84.45662	Metronet	Communication		19'9"	N
38.02236	-84.45662	Charter	Communication	18'9"		55 N
38.02236	-84.45662	Windstream	Communication	17'5"		N
38.02236	-84.45662	Windstream	Communication	16'3"		N
38.02236	-84.45662	Windstream	Communication	15'3"		N
38.02236	-84.45662	Windstream	Communication	14'0"	14'8"	N
38.02265	-84.45641	KU	Primary	33'6"		Y
38.02265	-84.45641	KU	Neutral	26'3"		Y
38.02265	-84.45641	KU	Secondary	25'6"		Y
38.02265	-84.45641	KU	Secondary	24'9"		Y
38.02265	-84.45641	Metronet	Communication		21'5"	Y
38.02265	-84.45641	Charter	Communication	21'9"	20'5"	39 Y
38.02265	-84.45641	Windstream	Communication	20'9"	19'5"	Y
38.02265	-84.45641	Windstream	Communication	19'8"	18'5"	Y

38.02265	-84.45641	Windstream	Communication	18'8"	17'4"		Y
38.02265	-84.45641	Windstream	Communication	17'7"	16'4"	15'10"	Y
38.02294	-84.45623	KU	Primary		33'10"		N
38.02294	-84.45623	KU	Neutral		28'4"		N
38.02294	-84.45623	KU	Secondary		27'4"		N
38.02294	-84.45623	KU	Secondary		26'4"		N
38.02294	-84.45623	Metronet	Communication		23'0"		N
38.02294	-84.45623	Charter	Communication		22'0"		67 N
38.02294	-84.45623	Windstream	Communication		21'0"		N
38.02294	-84.45623	Windstream	Communication		20'0"		N
38.02294	-84.45623	Windstream	Communication		19'0"		N
38.02294	-84.45623	Windstream	Communication		18'0"	14'9"	N
38.02325	-84.45602	KU	Primary	34'1"			N
38.02325	-84.45602	KU	Neutral	28'2"			N
38.02325	-84.45602	KU	Secondary	27'4"			N
38.02325	-84.45602	KU	Secondary	26'5"			N
38.02325	-84.45602	Metronet	Communication		22'0"		N
38.02325	-84.45602	Charter	Communication	21'0"			60 N
38.02325	-84.45602	Windstream	Communication	19'9"			N
38.02325	-84.45602	Windstream	Communication	18'9"			N
38.02325	-84.45602	Windstream	Communication	17'6"			N
38.02325	-84.45602	Windstream	Communication	16'7"		15'0"	N
38.02352	-84.45586	KU	Primary	33'5"			N
38.02352	-84.45586	KU	Primary	32'7"			N
38.02352	-84.45586	KU	Transformer	27'3"			N
38.02352	-84.45586	KU	Neutral	25'7"			N
38.02352	-84.45586	KU	Secondary	24'11"			N
38.02352	-84.45586	KU	Secondary	24'3"			N
38.02352	-84.45586	Metronet	Communication		20'11"		N
38.02352	-84.45586	Charter	OH Guy	20'3"			N
38.02352	-84.45586	Charter	Communication	19'11"			42 N
38.02352	-84.45586	Windstream	Communication	18'4"			N
38.02352	-84.45586	Windstream	Communication	17'4"			N
38.02352	-84.45586	Windstream	Communication	16'4"			N
38.02352	-84.45586	Windstream	Communication	15'1"		13'8"	N
38.02382	-84.45561	KU	Primary	32'5"			N
38.02382	-84.45561	KU	Neutral	25'5"			N
38.02382	-84.45561	KU	Secondary	24'9"			N
38.02382	-84.45561	KU	Secondary	24'1"			N
38.02382	-84.45561	Metronet	Communication		20'6"		N
38.02382	-84.45561	Charter	Communication	19'6"			45 N
38.02382	-84.45561	Windstream	Communication	18'7"			N
38.02382	-84.45561	Windstream	Communication	17'7"			N
38.02382	-84.45561	Windstream	Communication	16'6"			N
38.02382	-84.45561	Windstream	Communication	15'6"		14'6"	N

38.02413	-84.45541	KU	Primary	33'5"		N
38.02413	-84.45541	KU	Neutral	26'11"		N
38.02413	-84.45541	KU	Secondary	26'3"		N
38.02413	-84.45541	KU	Secondary	25'6"		N
38.02413	-84.45541	KU	Down Guy	24'7"		N
38.02413	-84.45541	Metronet	Communication		21'2"	N
38.02413	-84.45541	Charter	Communication	20'2"		94 N
38.02413	-84.45541	Windstream	Communication	18'4"		N
38.02413	-84.45541	Windstream	Communication	17'5"		N
38.02413	-84.45541	Windstream	Communication	16'6"		N
38.02413	-84.45541	Windstream	Communication	15'1"	14'1"	N
38.02419	-84.45539	KU	Primary	30'8"		N
38.02419	-84.45539	KU	Primary	28'4"		N
38.02419	-84.45539	KU	Neutral	23'8"		N
38.02419	-84.45539	KU	OH Guy	21'3"		N
38.02419	-84.45539	Metronet	Communication		17'5"	N
38.02419	-84.45539	Charter	OH Guy	16'5"		N
38.02419	-84.45539	Charter	Communication	16'3"		N
38.02419	-84.45539	Windstream	Communication	15'10"		81 N
38.02419	-84.45539	Windstream	Communication	15'8"		N
38.02419	-84.45539	Windstream	Communication	15'4"		N
38.02419	-84.45539	Windstream	Communication	15'2"		N
38.02419	-84.45539	Windstream	Communication	13'7"		N
38.02419	-84.45539	Windstream	Communication	13'1"		N
38.02419	-84.45539	Windstream	Communication	12'6"	12'9"	N
38.02419	-84.45539	Windstream	Communication	12'3"		N
38.02428	-84.45550	KU	Primary	35'6"		N
38.02428	-84.45550	KU	Primary	33'1"		N
38.02428	-84.45550	KU	Neutral	25'6"		N
38.02428	-84.45550	KU	Secondary	24'6"		N
38.02428	-84.45550	KU	Secondary	23'10"		N
38.02428	-84.45550	KU	Secondary	22'9"		N
38.02428	-84.45550	Metronet	Communication		16'11"	N
38.02428	-84.45550	Charter	Communication	15'11"		72 N
38.02428	-84.45550	Windstream	Communication	15'8"		N
38.02428	-84.45550	Windstream	Communication	14'11"		N
38.02428	-84.45550	Windstream	Communication	14'0"		N
38.02428	-84.45550	Windstream	Communication	13'1"	14'4"	N
38.02458	-84.45587	KU	Primary	38'7"		N
38.02458	-84.45587	KU	Primary	38'1"		N
38.02458	-84.45587	KU	Transformer	30'8"		N
38.02458	-84.45587	KU	Neutral	30'0"		N
38.02458	-84.45587	KU	Secondary	29'1"		N
38.02458	-84.45587	KU	Secondary	28'3"		N
38.02458	-84.45587	KU	Secondary	27'4"		N
38.02458	-84.45587	KU	Streetlight	25'9"		N
38.02458	-84.45587	KU	Streetlight	25'2"		N

38.02458	-84.45587	Metronet	Communication		23'1"		N
38.02458	-84.45587	Windstream	Communication	22'1"			N
38.02458	-84.45587	Charter	Communication	20'8"			N
38.02458	-84.45587	Charter	Communication	20'1"		67	N
38.02458	-84.45587	Windstream	Communication	19'1"			N
38.02458	-84.45587	Windstream	Communication	18'2"			N
38.02458	-84.45587	Windstream	Communication	17'4"			N
38.02458	-84.45587	Windstream	Communication	16'6"	14'5"		N
38.02478	-84.45611	KU	Primary	37'10"			Y
38.02478	-84.45611	KU	Transformer	27'7"			Y
38.02478	-84.45611	KU	Neutral	27'2"			Y
38.02478	-84.45611	KU	Secondary	26'7"			Y
38.02478	-84.45611	KU	Secondary	25'10"			Y
38.02478	-84.45611	KU	Secondary	25'3"			Y
38.02478	-84.45611	KU	Streetlight	24'6"			Y
38.02478	-84.45611	KU	Secondary Riser	24'2"			Y
38.02478	-84.45611	KU	Secondary Drip Loop	23'0"	24'2"		Y
38.02478	-84.45611	Metronet	Communication		21'0"		Y
38.02478	-84.45611	Windstream	Communication	21'10"	20'0"		Y
38.02478	-84.45611	Charter	Communication	21'0"	19'1"	49	Y
38.02478	-84.45611	Windstream	Communication	20'3"	18'2"		Y
38.02478	-84.45611	Windstream	Communication	19'1"	17'3"		Y
38.02478	-84.45611	Windstream	Communication	18'2"	16'3"		Y
38.02478	-84.45611	Windstream	Communication	17'3"	15'3"	15'8"	Y
38.02502	-84.45640	KU	Primary	35'11"			N
38.02502	-84.45640	KU	Primary	35'1"			N
38.02502	-84.45640	KU	Transformer	30'7"			N
38.02502	-84.45640	KU	Neutral	30'5"			N
38.02502	-84.45640	KU	Secondary	29'1"			N
38.02502	-84.45640	KU	Secondary	27'11"			N
38.02502	-84.45640	KU	Streetlight	27'7"			N
38.02502	-84.45640	KU	Secondary	26'10"			N
38.02502	-84.45640	KU	OH Guy	25'9"			N
38.02502	-84.45640	Metronet	Communication		21'5"		N
38.02502	-84.45640	Charter	Communication	20'5"		85	N
38.02502	-84.45640	Windstream	Communication	19'1"			N
38.02502	-84.45640	Windstream	Communication	18'1"			N
38.02502	-84.45640	Windstream	Communication	17'0"			N
38.02502	-84.45640	Windstream	Communication	16'2"	12'10"		N
38.02524	-84.45671	KU	Primary	38'4"			N
38.02524	-84.45671	KU	Primary	37'10"			N
38.02524	-84.45671	KU	Transformer	28'10"			N
38.02524	-84.45671	KU	Neutral	27'9"			N
38.02524	-84.45671	KU	Secondary	27'0"			N
38.02524	-84.45671	KU	Secondary	26'2"			N
38.02524	-84.45671	KU	Secondary	25'6"			N
38.02524	-84.45671	KU	Secondary Drip Loop	24'11"			N

38.02524	-84.45671	KU	Streetlight	23'10"			N
38.02524	-84.45671	Metronet	Communication		18'9"		N
38.02524	-84.45671	Charter	Communication	17'9"			99 N
38.02524	-84.45671	Windstream	Communication	16'8"			N
38.02524	-84.45671	Windstream	Communication	15'8"			N
38.02524	-84.45671	Windstream	Communication	14'5"		15'0"	N
38.02532	-84.45678	KU	Primary	39'11"			Y
38.02532	-84.45678	KU	Primary	39'3"			Y
38.02532	-84.45678	KU	Primary	35'10"			Y
38.02532	-84.45678	KU	Neutral	25'11"			Y
38.02532	-84.45678	KU	Secondary	24'8"			Y
38.02532	-84.45678	Metronet	Communication		21'4"		Y
38.02532	-84.45678	Charter	Communication	22'3"	20'4"		49 Y
38.02532	-84.45678	Charter	Communication	20'11"	19'4"		Y
38.02532	-84.45678	Windstream	Communication	19'11"	18'4"	18'7"	Y
38.02532	-84.45678	Windstream	Communication	18'9"	17'4"		Y
38.02532	-84.45678	Windstream	Communication	18'0"	16'4"		Y
38.02529	-84.45688	KU	Primary	34'1"			N
38.02529	-84.45688	KU	Neutral	26'9"			N
38.02529	-84.45688	KU	Secondary	25'10"			N
38.02529	-84.45688	KU	Secondary	25'0"			N
38.02529	-84.45688	Metronet	Communication		20'11"		N
38.02529	-84.45688	Charter	Communication	19'11"			70 N
38.02529	-84.45688	Windstream	Communication	19'1"		15'8"	N
38.02516	-84.45714	KU	Primary	33'0"			N
38.02516	-84.45714	KU	Transformer	25'10"			N
38.02516	-84.45714	KU	Neutral	25'4"			N
38.02516	-84.45714	KU	Secondary	24'7"			N
38.02516	-84.45714	KU	Secondary	23'11"			N
38.02516	-84.45714	Metronet	Communication		20'4"		N
38.02516	-84.45714	Charter	Communication	20'4"	19'4"		57 N
38.02516	-84.45714	Windstream	Communication	18'11"	18'4"	16'0"	N
38.02504	-84.45741	KU	Primary	32'6"			N
38.02504	-84.45741	KU	Neutral	25'10"			N
38.02504	-84.45741	KU	OH Guy	23'5"			N
38.02504	-84.45741	Metronet	Communication		21'2"		N
38.02504	-84.45741	Charter	Communication	20'2"			69 N
38.02504	-84.45741	Windstream	Communication	18'5"		18'6"	N
38.02464	-84.45718	KU	Primary	32'7"			Y
38.02464	-84.45718	KU	Neutral	25'6"			Y
38.02464	-84.45718	KU	Secondary	24'1"			Y
38.02464	-84.45718	KU	Secondary	23'6"			Y
38.02464	-84.45718	KU	Streetlight	21'5"			Y
38.02464	-84.45718	Metronet	Communication		20'2"		Y
38.02464	-84.45718	Charter	Communication	20'8"	19'2"		20 Y

38.02464	-84.45718	Windstream	Communication	19'8"	18'2"	12'0"	Y
38.02433	-84.45701	KU	Primary	33'5"			Y
38.02433	-84.45701	KU	Transformer	26'7"			Y
38.02433	-84.45701	KU	Neutral	25'6"			Y
38.02433	-84.45701	KU	Secondary	24'9"			Y
38.02433	-84.45701	KU	Secondary	24'0"			Y
38.02433	-84.45701	KU	Secondary Drip Loop	21'11"	23'7"		Y
38.02433	-84.45701	Metronet	Communication		20'3"		Y
38.02433	-84.45701	Charter	Communication	19'3"			Y
38.02433	-84.45701	Windstream	Communication	17'10"			45 Y
38.02433	-84.45701	Windstream	Communication	17'5"		17'1"	Y
38.02401	-84.45683	KU	Primary	32'10"			Y
38.02401	-84.45683	KU	Transformer	25'8"			Y
38.02401	-84.45683	KU	Neutral	24'8"			Y
38.02401	-84.45683	KU	Secondary	23'11"			Y
38.02401	-84.45683	KU	Secondary	23'3"			Y
38.02401	-84.45683	KU	Secondary Drip Loop	22'8"	23'3"		Y
38.02401	-84.45683	Metronet	Communication		19'11"		Y
38.02401	-84.45683	Charter	Communication	18'11"			42 Y
38.02401	-84.45683	Windstream	Communication	18'3"			Y
38.02401	-84.45683	Windstream	Communication	17'8"		11'0"	Y
38.02369	-84.45671	KU	Primary	31'10"			Y
38.02369	-84.45671	KU	Neutral	25'3"			Y
38.02369	-84.45671	KU	Secondary	24'8"			Y
38.02369	-84.45671	KU	Secondary	24'0"			Y
38.02369	-84.45671	KU	Secondary Drip Loop	21'7"	24'0"		Y
38.02369	-84.45671	Metronet	Communication		20'8"		Y
38.02369	-84.45671	Charter	OH Guy	19'11"	19'8"		Y
38.02369	-84.45671	Charter	Communication	18'8"			N/A Y
38.02369	-84.45671	Windstream	Communication	18'3"			Y
38.02369	-84.45671	Windstream	Communication	17'8"		N/A	Y
38.02557	-84.45709	KU	Primary	39'3"			N
38.02557	-84.45709	KU	Primary	38'8"			N
38.02557	-84.45709	KU	Capacitor Bank	32'3"			N
38.02557	-84.45709	KU	Neutral	31'7"			N
38.02557	-84.45709	KU	Secondary	30'6"			N
38.02557	-84.45709	KU	Secondary Riser	28'4"			N
38.02557	-84.45709	KU	OH Guy	28'1"			N
38.02557	-84.45709	KU	Streetlight	25'2"			N
38.02557	-84.45709	Metronet	Communication		22'5"		N
38.02557	-84.45709	Charter	Communication	21'5"			71 N
38.02557	-84.45709	Windstream	Communication	20'11"			N
38.02557	-84.45709	Windstream	Communication	20'3"		18'10"	N
38.02580	-84.45740	KU	Primary	36'7"			N
38.02580	-84.45740	KU	Transformer	27'4"			N

38.02580	-84.45740	KU	Neutral	25'11"		N
38.02580	-84.45740	KU	Secondary	25'3"		N
38.02580	-84.45740	KU	Secondary	24'7"		N
38.02580	-84.45740	KU	Secondary	23'10"		N
38.02580	-84.45740	KU	OH Guy	22'6"		N
38.02580	-84.45740	Metronet	Communication		20'6"	N
38.02580	-84.45740	Charter	Communication	19'6"		14 N
38.02580	-84.45740	Windstream	Communication	18'8"		N
38.02580	-84.45740	Windstream	Communication	17'9"	13'10"	N
38.02606	-84.45773	KU	Primary	37'10"		N
38.02606	-84.45773	KU	Transformer	28'6"		N
38.02606	-84.45773	KU	Neutral	25'9"		N
38.02606	-84.45773	KU	Secondary	25'1"		N
38.02606	-84.45773	KU	Secondary	24'4"		N
38.02606	-84.45773	KU	Secondary	23'4"	24'8"	N
38.02606	-84.45773	KU	Streetlight	22'3"		N
38.02606	-84.45773	KU	Streetlight Drip Loop	21'1"		N
38.02606	-84.45773	Metronet	Communication		20'0"	N
38.02606	-84.45773	Charter	Communication	20'1"		63 N
38.02606	-84.45773	Charter	Communication	19'1"		N
38.02606	-84.45773	Windstream	Communication	18'1"		N
38.02606	-84.45773	Windstream	Communication	16'9"		N
38.02606	-84.45773	Windstream	Communication	15'9"	14'5"	N
38.02628	-84.45799	KU	Primary	36'8"		N
38.02628	-84.45799	KU	Neutral	29'0"		N
38.02628	-84.45799	KU	Secondary	28'3"		N
38.02628	-84.45799	KU	Secondary	27'6"		N
38.02628	-84.45799	KU	Streetlight	25'9"		N
38.02628	-84.45799	Metronet	Communication		19'7"	N
38.02628	-84.45799	Charter	Communication	18'7"		91 N
38.02628	-84.45799	Windstream	Communication	17'7"		N
38.02628	-84.45799	Windstream	Communication	16'7"	13'11"	N
38.02653	-84.45829	KU	Primary	34'7"		N
38.02653	-84.45829	KU	Transformer	27'0"		N
38.02653	-84.45829	KU	Neutral	26'9"		N
38.02653	-84.45829	KU	Secondary	26'1"		N
38.02653	-84.45829	KU	Secondary	25'4"		N
38.02653	-84.45829	KU	Streetlight	23'10"		N
38.02653	-84.45829	KU	Secondary Drip Loop	23'1"		N
38.02653	-84.45829	Metronet	Communication		18'11"	N
38.02653	-84.45829	Charter	Communication	17'11"		73 N
38.02653	-84.45829	Windstream	Communication	16'0"		N
38.02653	-84.45829	Windstream	Communication	15'3"	16'0"	N
38.02665	-84.45844	KU	Primary	33'3"		N
38.02665	-84.45844	KU	Primary	30'7"		N
38.02665	-84.45844	KU	Neutral	25'5"		N

38.02665	-84.45844	KU	Secondary	24'5"		N
38.02665	-84.45844	KU	Secondary	23'10"		N
38.02665	-84.45844	KU	Streetlight	21'7"		N
38.02665	-84.45844	Metronet	Communication		20'1"	N
38.02665	-84.45844	Charter	Communication	19'1"		62 N
38.02665	-84.45844	Windstream	Communication	18'4"		N
38.02665	-84.45844	Windstream	Communication	17'7"	16'8"	N
38.02677	-84.45860	KU	Primary	34'4"		Y
38.02677	-84.45860	KU	Primary	33'9"		Y
38.02677	-84.45860	KU	Transformer	27'7"		Y
38.02677	-84.45860	KU	Neutral	26'5"		Y
38.02677	-84.45860	KU	Secondary	25'7"		Y
38.02677	-84.45860	KU	Secondary	24'9"		Y
38.02677	-84.45860	KU	Secondary Riser	21'3"	24'3"	Y
38.02677	-84.45860	Metronet	Communication		20'0"	Y
38.02677	-84.45860	Charter	Communication	19'0"		Y
38.02677	-84.45860	Charter	Communication	18'9"		70 Y
38.02677	-84.45860	Windstream	Communication	18'1"		Y
38.02677	-84.45860	Windstream	Communication	17'11"		Y
38.02677	-84.45860	Windstream	Communication	17'1"		Y
38.02677	-84.45860	Windstream	Communication	16'0"	14'11"	Y
38.02705	-84.45896	KU	Primary	34'3"		N
38.02705	-84.45896	KU	Neutral	30'10"		N
38.02705	-84.45896	KU	Secondary	29'11"		N
38.02705	-84.45896	KU	Secondary	29'3"		N
38.02705	-84.45896	Metronet	Communication		19'3"	N
38.02705	-84.45896	Charter	Communication	18'3"		85 N
38.02705	-84.45896	Windstream	Communication	16'8"		N
38.02705	-84.45896	Windstream	Communication	15'11"	14'9"	N
38.02728	-84.45923	KU	Primary	33'5"		N
38.02728	-84.45923	KU	Primary	32'11"		N
38.02728	-84.45923	KU	Primary Riser	25'10"		N
38.02728	-84.45923	KU	Primary Drip Loop	24'10"		N
38.02728	-84.45923	KU	Neutral	24'8"		N
38.02728	-84.45923	KU	Secondary	24'0'		N
38.02728	-84.45923	KU	Secondary	23'3"		N
38.02728	-84.45923	Metronet	Communication		19'11"	N
38.02728	-84.45923	Charter	Communication		18'11"	59 N
38.02728	-84.45923	Windstream	Communication		17'11"	N
38.02728	-84.45923	Windstream	Communication		16'11" 15'7"	N
38.02733	-84.45929	KU	Primary	32'2"		Y
38.02733	-84.45929	KU	Primary	28'7"		Y
38.02733	-84.45929	KU	Neutral	24'3"		Y
38.02733	-84.45929	KU	Secondary	23'7"		Y
38.02733	-84.45929	KU	Secondary	22'9"		Y
38.02733	-84.45929	KU	Down Guy	22'1"		Y

38.02733	-84.45929	Metronet	Communication		19'4"		Y
38.02733	-84.45929	Metronet	Communication		19'0"		Y
38.02733	-84.45929	Charter	Communication	19'8"	18'5"		35 Y
38.02733	-84.45929	Charter	Communication	19'4"	18'1"		Y
38.02733	-84.45929	Windstream	Communication	18'5"	17'5"		Y
38.02733	-84.45929	Windstream	Communication	17'10"	17'1"		Y
38.02733	-84.45929	Windstream	Communication	16'9"	16'5"	15'10"	Y
38.02712	-84.45959	KU	Primary		33'2"		Y
38.02712	-84.45959	KU	Primary		32'9"		Y
38.02712	-84.45959	KU	Transformer		26'7"		Y
38.02712	-84.45959	KU	Neutral		25'5"		Y
38.02712	-84.45959	KU	Secondary		24'11'		Y
38.02712	-84.45959	KU	Secondary		24'3"		Y
38.02712	-84.45959	KU	Secondary Riser		23'8"		Y
38.02712	-84.45959	KU	Secondary Riser		23'3"		Y
38.02712	-84.45959	KU	Secondary Drip Loop		22'10"		Y
38.02712	-84.45959	Metronet	Communication		19'6"		Y
38.02712	-84.45959	Charter	Communication	20'1"	18'6"		92 Y
38.02712	-84.45959	Windstream	Communication	19'3"	17'6"		Y
38.02712	-84.45959	Windstream	Communication	17'6"	16'6"	15'3"	Y
38.02688	-84.45994	KU	Primary		32'4"		N
38.02688	-84.45994	KU	Neutral		29'9"		N
38.02688	-84.45994	KU	Secondary		29'2"		N
38.02688	-84.45994	KU	Secondary		28'5"		N
38.02688	-84.45994	Metronet	Communication		20'11"		N
38.02688	-84.45994	Charter	Communication	19'11"			99 N
38.02688	-84.45994	Windstream	Communication	18'1"			N
38.02688	-84.45994	Windstream	Communication	16'11"		16'2"	N
38.02664	-84.46023	KU	Primary		33'7"		Y
38.02664	-84.46023	KU	Transformer		28'3"		Y
38.02664	-84.46023	KU	Neutral		25'11"		Y
38.02664	-84.46023	KU	Secondary		25'0"		Y
38.02664	-84.46023	KU	Secondary		24'4"		Y
38.02664	-84.46023	KU	Secondary Riser		22'5"		Y
38.02664	-84.46023	Metronet	Communication		19'1"		Y
38.02664	-84.46023	Charter	Communication	19'8"	18'1"		31 Y
38.02664	-84.46023	Windstream	Communication	18'1"	17'0"		Y
38.02664	-84.46023	Windstream	Communication	17'0"	16'0"	13'8"	Y
38.02637	-84.46063	KU	Primary		30'8"		Y
38.02637	-84.46063	KU	Primary		29'10"		Y
38.02637	-84.46063	KU	Transformer		24'6"		Y
38.02637	-84.46063	KU	Neutral		21'10"		Y
38.02637	-84.46063	KU	Secondary		21'2"		Y
38.02637	-84.46063	KU	Secondary		20'6"		Y
38.02637	-84.46063	Metronet	Communication		17'2"		Y
38.02637	-84.46063	Charter	Communication	17'2"	16'2"		29 Y

38.02637	-84.46063	Windstream	Communication	15'5"	15'2"		Y
38.02637	-84.46063	Windstream	Communication	14'8"	14'2"	15'5"	Y
38.02609	-84.46104	KU	Primary	33'7"			N
38.02609	-84.46104	KU	Transformer	27'8"			N
38.02609	-84.46104	KU	Secondary	25'10"			N
38.02609	-84.46104	KU	Neutral	25'2"			N
38.02609	-84.46104	KU	Secondary	24'5"			N
38.02609	-84.46104	KU	Secondary	23'9"			N
38.02609	-84.46104	KU	OH Guy	23'2"			N
38.02609	-84.46104	Metronet	Communication		20'0"		N
38.02609	-84.46104	Charter	Communication	19'0"			71 N
38.02609	-84.46104	Windstream	Communication	15'11"			N
38.02609	-84.46104	Windstream	Communication	15'5"		16'3"	N
38.02583	-84.46140	KU	Primary	32'3"			N
38.02583	-84.46140	KU	Transformer	25'11"			N
38.02583	-84.46140	KU	Neutral	25'2"			N
38.02583	-84.46140	KU	Neutral	24'4"			N
38.02583	-84.46140	KU	Secondary	23'8"			N
38.02583	-84.46140	KU	Secondary	23'0"			N
38.02583	-84.46140	Metronet	Communication		19'6"		N
38.02583	-84.46140	Charter	Communication	18'10"	18'6"		52 N
38.02583	-84.46140	Windstream	Communication	17'3"			N
38.02583	-84.46140	Windstream	Communication	16'2"		15'2"	N
38.02556	-84.46177	KU	Primary	34'9"			Y
38.02556	-84.46177	KU	Primary	34'6"			Y
38.02556	-84.46177	KU	Neutral	31'8"			Y
38.02556	-84.46177	KU	Secondary	31'0"			Y
38.02556	-84.46177	KU	Secondary	30'4"			Y
38.02556	-84.46177	KU	Secondary Riser	27'6"			Y
38.02556	-84.46177	Metronet	Communication		24'2"		Y
38.02556	-84.46177	Charter	Communication	24'7"	23'2"		43 Y
38.02556	-84.46177	Windstream	Communication	21'8"			Y
38.02556	-84.46177	Windstream	Communication	19'0"		14'10"	Y
38.02528	-84.46217	KU	Primary	29'3"			Y
38.02528	-84.46217	KU	Primary	28'8"			Y
38.02528	-84.46217	KU	Neutral	26'1"			Y
38.02528	-84.46217	KU	Secondary	25'4"			Y
38.02528	-84.46217	KU	Secondary	24'6"			Y
38.02528	-84.46217	KU	Secondary Riser	23'11"			Y
38.02528	-84.46217	Metronet	Communication		20'7"		Y
38.02528	-84.46217	Charter	Communication	21'1"	19'7"		43 Y
38.02528	-84.46217	Windstream	Communication	18'8"			Y
38.02528	-84.46217	Windstream	Communication	16'11"		16'5"	Y
38.02500	-84.46257	KU	Primary	33'11"			N
38.02500	-84.46257	KU	Primary	33'6"			N

38.02500	-84.46257	KU	Transformer	28'0"		N
38.02500	-84.46257	KU	Secondary	27'5"		N
38.02500	-84.46257	KU	Neutral	26'7"		N
38.02500	-84.46257	KU	Secondary	25'11"		N
38.02500	-84.46257	KU	Secondary	25'3"		N
38.02500	-84.46257	Metronet	Communication		21'11"	N
38.02500	-84.46257	Charter	Communication	21'4"	20'11"	51 N
38.02500	-84.46257	Windstream	Communication	20'2"	19'11"	N
38.02500	-84.46257	Windstream	Communication	18'11"	14'10"	N
38.02473	-84.46295	KU	Primary	33'11"		N
38.02473	-84.46295	KU	Primary	33'4"		N
38.02473	-84.46295	KU	Neutral	31'2"		N
38.02473	-84.46295	KU	Neutral	30'5"		N
38.02473	-84.46295	KU	Secondary	29'10"		N
38.02473	-84.46295	KU	Secondary	29'3"		N
38.02473	-84.46295	Metronet	Communication		23'2"	N
38.02473	-84.46295	Charter	Communication	22'2"		59 N
38.02473	-84.46295	Windstream	Communication	20'11"		N
38.02473	-84.46295	Windstream	Communication	15'7"	9'10"	N
38.02446	-84.46334	KU	Primary	29'6"		N
38.02446	-84.46334	KU	Primary	28'11"		N
38.02446	-84.46334	KU	Transformer	25'3"		N
38.02446	-84.46334	KU	Neutral	23'10"		N
38.02446	-84.46334	KU	Secondary	23'2"		N
38.02446	-84.46334	KU	Secondary	22'6"		N
38.02446	-84.46334	KU	Secondary Riser	22'2"		N
38.02446	-84.46334	Metronet	Communication		18'10"	N
38.02446	-84.46334	Charter	Communication	18'10"	17'11"	44 N
38.02446	-84.46334	Windstream	Communication	17'11"	16'11"	N
38.02446	-84.46334	Windstream	Communication	15'10"	16'2"	N
38.02425	-84.46364	KU	Primary	28'7"		Y
38.02425	-84.46364	KU	Primary	28'3"		Y
38.02425	-84.46364	KU	Neutral	25'8"		Y
38.02425	-84.46364	KU	Secondary	24'11"		Y
38.02425	-84.46364	KU	Secondary	24'5"		Y
38.02425	-84.46364	KU	Secondary Riser	23'5"		Y
38.02425	-84.46364	Metronet	Communication		20'1"	Y
38.02425	-84.46364	Charter	Communication	21'1"	19'1"	46 Y
38.02425	-84.46364	Windstream	Communication	19'10"	18'1"	Y
38.02425	-84.46364	Windstream	Communication	17'2"	16'7"	Y
38.02404	-84.46393	KU	Primary	29'7"		N
38.02404	-84.46393	KU	Primary	29'2"		N
38.02404	-84.46393	KU	Neutral	26'10"		N
38.02404	-84.46393	KU	Secondary	26'2"		N
38.02404	-84.46393	KU	Secondary	25'6"		N
38.02404	-84.46393	Metronet	Communication		21'11"	N

38.02404	-84.46393	Charter	Communication	20'11"		65	N
38.02404	-84.46393	Windstream	Communication	19'10"			N
38.02404	-84.46393	Windstream	Communication	18'10"	18'4"		N
38.02378	-84.46430	KU	Primary	34'6"			N
38.02378	-84.46430	KU	Primary	33'8"			N
38.02378	-84.46430	KU	Transformer	29'2"			N
38.02378	-84.46430	KU	Secondary	27'9"			N
38.02378	-84.46430	KU	Neutral	26'8"			N
38.02378	-84.46430	KU	Secondary	26'0"			N
38.02378	-84.46430	KU	Secondary	25'4"			N
38.02378	-84.46430	KU	Secondary Riser	24'6"			N
38.02378	-84.46430	Metronet	Communication		21'2"		N
38.02378	-84.46430	Charter	Communication	20'2"		62	N
38.02378	-84.46430	Windstream	Communication	19'2"			N
38.02378	-84.46430	Windstream	Communication	18'2"	15'10"		N
38.02349	-84.46467	KU	Primary	32'11"			N
38.02349	-84.46467	KU	Primary	32'6"			N
38.02349	-84.46467	KU	Transformer	26'5"			N
38.02349	-84.46467	KU	Secondary	26'0"			N
38.02349	-84.46467	KU	Neutral	25'6"			N
38.02349	-84.46467	KU	Secondary	24'10"			N
38.02349	-84.46467	KU	Secondary	24'2"			N
38.02349	-84.46467	Metronet	Communication		20'10"		N
38.02349	-84.46467	Charter	Communication	20'5"	19'10"	46	N
38.02349	-84.46467	Windstream	Communication	19'3"	18'10"		N
38.02349	-84.46467	Windstream	Communication	17'7"			N
38.02349	-84.46467	Windstream	Communication	16'4"	13'3"		N
38.02320	-84.46508	KU	Primary	33'10"			Y
38.02320	-84.46508	KU	Primary	33'3"			Y
38.02320	-84.46508	KU	Transformer	27'1"			Y
38.02320	-84.46508	KU	Neutral	25'9"			Y
38.02320	-84.46508	KU	Secondary	25'0"			Y
38.02320	-84.46508	KU	Secondary Riser	24'7"			Y
38.02320	-84.46508	KU	Secondary	24'4"			Y
38.02320	-84.46508	KU	Secondary Riser X 2	23'8"			Y
38.02320	-84.46508	KU	Secondary Drip Loop	23'3"			Y
38.02320	-84.46508	Metronet	Communication		19'11"		Y
38.02320	-84.46508	Charter	Communication	20'3"	18'11"	34	Y
38.02320	-84.46508	Windstream	Communication	18'5"	17'11"		Y
38.02320	-84.46508	Windstream	Communication	17'1"	16'10"		Y
38.02320	-84.46508	Windstream	Communication	16'2"	15'10"	13'11"	Y
-84.46544	275.42241	KU	Primary	32'4"			N
-84.46544	275.42241	KU	Primary	32'0"			N
-84.46544	275.42241	KU	Neutral	29'8"			N
-84.46544	275.42241	KU	Secondary	29'0"			N
-84.46544	275.42241	KU	Secondary	28'5"			N

-84.46544	275.42241	Metronet	Communication		22'3"	N
-84.46544	275.42241	Charter	Communication	21'3"		66 N
-84.46544	275.42241	Windstream	Communication	19'0"		N
-84.46544	275.42241	Windstream	Communication	17'5"		N
-84.46544	275.42241	Windstream	Communication	16'5"	14'8"	N
						N
-84.46586	278.48334	KU	Primary	38'6"		N
-84.46586	278.48334	KU	Primary	38'2"		N
-84.46586	278.48334	KU	Transformer	31'6"		N
-84.46586	278.48334	KU	Transformer	30'0"		N
-84.46586	278.48334	KU	Neutral	29'9"		N
-84.46586	278.48334	KU	Secondary	29'1"		N
-84.46586	278.48334	KU	Secondary	28'7"		N
-84.46586	278.48334	KU	Secondary	28'0"		N
-84.46586	278.48334	KU	Secondary Riser	27'2"		N
-84.46586	278.48334	Metronet	Communication		22'0"	N
-84.46586	278.48334	Charter	Communication	21'0"		53 N
-84.46586	278.48334	Windstream	Communication	18'9"		N
-84.46586	278.48334	Windstream	Communication	17'8"		N
-84.46586	278.48334	Windstream	Communication	16'10"	13'9"	N
-84.46624	272.21088	KU	Primary	33'3"		N
-84.46624	272.21088	KU	Neutral	30'10"		N
-84.46624	272.21088	KU	Secondary Riser	30'8"		N
-84.46624	272.21088	KU	Secondary	30'1"		N
-84.46624	272.21088	KU	Secondary	29'6"		N
-84.46624	272.21088	KU	Secondary	28'10"		N
-84.46624	272.21088	KU	Secondary Riser	28'2"		N
-84.46624	272.21088	Metronet	Communication		22'0"	N
-84.46624	272.21088	Charter	Communication	21'0"		77 N
-84.46624	272.21088	Windstream	Communication	19'1"		N
-84.46624	272.21088	Windstream	Communication	18'0"		N
-84.46624	272.21088	Windstream	Communication	16'10"	15'2"	N
-84.46662	277.17968	KU	Primary	31'2"		Y
-84.46662	277.17968	KU	Primary	30'10"		Y
-84.46662	277.17968	KU	Transformer	24'11"		Y
-84.46662	277.17968	KU	Neutral	24'1"		Y
-84.46662	277.17968	KU	Secondary	23'6"		Y
-84.46662	277.17968	KU	Secondary	22'11"		Y
-84.46662	277.17968	KU	Secondary	19'9"	22'11"	Y
-84.46662	277.17968	Metronet	Communication		19'6"	Y
-84.46662	277.17968	Charter	Communication	18'6"		60 Y
-84.46662	277.17968	Windstream	Communication	16'10"		Y
-84.46662	277.17968	Windstream	Communication	16'2"		Y
-84.46662	277.17968	Windstream	Communication	15'0"	15'0"	Y
-84.46682	269.64331	KU	Primary	33'1"		Y
-84.46682	269.64331	KU	Primary	32'5"		Y
-84.46682	269.64331	KU	Primary	30'5"		Y

-84.46682	269.64331	KU	Neutral	26'2"		Y
-84.46682	269.64331	KU	Secondary	25'5"		Y
-84.46682	269.64331	KU	Secondary	24'7"		Y
-84.46682	269.64331	KU	Secondary Riser	22'5"	23'9"	Y
-84.46682	269.64331	KU	Streetlight	21'7"		Y
-84.46682	269.64331	Metronet	Communication		20'5"	Y
-84.46682	269.64331	Charter	Communication	19'5"		51 Y
-84.46682	269.64331	Windstream	Communication	18'2"		Y
-84.46682	269.64331	Windstream	Communication	17'3"		Y
-84.46682	269.64331	Windstream	Communication	15'9"	14'7"	Y
-84.46700	271.82326	KU	Primary	31'6"		N
-84.46700	271.82326	KU	Primary	31'2"		N
-84.46700	271.82326	KU	Transformer	24'8"		N
-84.46700	271.82326	KU	Neutral	24'3"		N
-84.46700	271.82326	KU	Secondary	23'7"		N
-84.46700	271.82326	KU	Secondary	22'11"		N
-84.46700	271.82326	Metronet	Communication		19'2"	N
-84.46700	271.82326	Charter	Communication	18'2"		52 N
-84.46700	271.82326	Windstream	Communication	17'8"		N
-84.46700	271.82326	Windstream	Communication	16'4"		N
-84.46700	271.82326	Windstream	Communication	15'8"	15'11"	N
-84.46712	275.85313	KU	Primary	33'1"		N
-84.46712	275.85313	KU	Streetlight	26'5"		N
-84.46712	275.85313	KU	Secondary Riser	26'4"		N
-84.46712	275.85313	KU	Neutral	25'10"		N
-84.46712	275.85313	KU	Secondary	25'2"		N
-84.46712	275.85313	KU	Secondary	24'5"		N
-84.46712	275.85313	KU	Neutral - OOS	21'6"		N
-84.46712	275.85313	KU	Secondary - OOS	20'11"		N
-84.46712	275.85313	Metronet	Communication		19'7"	N
-84.46712	275.85313	Charter	Communication	18'7"		21 N
-84.46712	275.85313	Windstream	Communication	17'5"		N
-84.46712	275.85313	Windstream	Communication	16'5"		N
-84.46712	275.85313	Windstream	Communication	15'6"	15'4"	N
-84.46716	275.09216	KU	Primary	32'5"		N
-84.46716	275.09216	KU	Neutral	25'5"		N
-84.46716	275.09216	KU	Primary Riser - OOS	25'3"		N
-84.46716	275.09216	KU	Secondary	24'9"		N
-84.46716	275.09216	KU	Secondary	24'0"		N
-84.46716	275.09216	KU	Neutral - OOS	21'8"		N
-84.46716	275.09216	KU	Secondary - OOS	20'10"		N
-84.46716	275.09216	KU	Secondary Riser - OOS	19'9"		N
-84.46716	275.09216	Metronet	Communication		20'3"	N
-84.46716	275.09216	Charter	Communication	19'3"		N/A N
-84.46716	275.09216	Windstream	Communication	17'4"		N
-84.46716	275.09216	Windstream	Communication	15'11"		N
-84.46716	275.09216	Windstream	Communication	15'2"	N/A	N

38.02136	-84.46539	KU	Primary	33'6"			N
38.02136	-84.46539	KU	Secondary	25'11"			N
38.02136	-84.46539	KU	Neutral	24'10"			N
38.02136	-84.46539	KU	Secondary	24'2"			N
38.02136	-84.46539	KU	Secondary	23'7"			N
38.02136	-84.46539	Metronet	Communication		20'3"		N
38.02136	-84.46539	Charter	Communication	19'3"		37	N
38.02136	-84.46539	Windstream	Communication	18'4"			N
38.02136	-84.46539	Windstream	Communication	17'6"	13'10"		N
38.02158	-84.46512	KU	Primary	28'6"			N
38.02158	-84.46512	KU	Primary	28'1"			N
38.02158	-84.46512	KU	Secondary	23'11"			N
38.02158	-84.46512	KU	Neutral	23'3"			N
38.02158	-84.46512	KU	Secondary	22'7"			N
38.02158	-84.46512	KU	Secondary	22'0"			N
38.02158	-84.46512	Metronet	Communication		18'9"		N
38.02158	-84.46512	Charter	Communication	18'9"	17'10"	60	N
38.02158	-84.46512	Windstream	Communication	17'10"	16'10"		N
38.02158	-84.46512	Windstream	Communication	16'10"	15'10"	14'10"	N
38.02177	-84.46478	KU	Primary	27'3"			N
38.02177	-84.46478	KU	Primary	26'9"			N
38.02177	-84.46478	KU	Secondary Riser	24'7"			N
38.02177	-84.46478	KU	Neutral	23'1"			N
38.02177	-84.46478	KU	Secondary	22'8"			N
38.02177	-84.46478	KU	Secondary	22'3"			N
38.02177	-84.46478	KU	OH Guy	21'11"			N
38.02177	-84.46478	Metronet	Communication		18'11"		N
38.02177	-84.46478	Charter	Communication	18'3"	17'11"	26	N
38.02177	-84.46478	Windstream	Communication	17'6"	16'11"		N
38.02177	-84.46478	Windstream	Communication	16'7"	15'11"	13'10"	N
38.02199	-84.46448	KU	Primary	28'7"			Y
38.02199	-84.46448	KU	Primary	28'3"			Y
38.02199	-84.46448	KU	Transformer	22'3"			Y
38.02199	-84.46448	KU	Secondary	21'10"			Y
38.02199	-84.46448	KU	Neutral	21'4"			Y
38.02199	-84.46448	KU	Secondary	20'8"			Y
38.02199	-84.46448	KU	Secondary	19'11"			Y
38.02199	-84.46448	Metronet	Communication		16'7"		Y
38.02199	-84.46448	Charter	Communication	17'7"	15'7"	42	Y
38.02199	-84.46448	Windstream	Communication	16'10"	14'7"		Y
38.02199	-84.46448	Windstream	Communication	16'0"	13'7"	13'11"	Y
38.02223	-84.46415	KU	Primary	32'8"			N
38.02223	-84.46415	KU	Primary	32'2"			N
38.02223	-84.46415	KU	Neutral	27'11"			N
38.02223	-84.46415	KU	Secondary	27'3"			N

38.02223	-84.46415	KU	Secondary	26'6"			N
38.02223	-84.46415	KU	Secondary Riser	25'9"			N
38.02223	-84.46415	Metronet	Communication		21'0"		N
38.02223	-84.46415	Charter	Communication	20'0"			56 N
38.02223	-84.46415	Windstream	Communication	18'7"			N
38.02223	-84.46415	Windstream	Communication	17'9"		14'8"	N
38.02245	-84.46386	KU	Primary	29'10"			N
38.02245	-84.46386	KU	Transformer	25'0"			N
38.02245	-84.46386	KU	Secondary	23'6"			N
38.02245	-84.46386	KU	Neutral	22'9"			N
38.02245	-84.46386	KU	Secondary	22'1"			N
38.02245	-84.46386	KU	Secondary	21'6"			N
38.02245	-84.46386	Metronet	Communication		18'2"		N
38.02245	-84.46386	Charter	Communication	18'2"	17'2"		41 N
38.02245	-84.46386	Windstream	Communication	16'5"	16'2"		N
38.02245	-84.46386	Windstream	Communication	15'9"	15'2"	13'6"	N
38.02268	-84.46354	KU	Primary	28'0"			Y
38.02268	-84.46354	KU	Primary	27'8"			Y
38.02268	-84.46354	KU	Neutral	24'5"			Y
38.02268	-84.46354	KU	Secondary	23'10"			Y
38.02268	-84.46354	KU	Secondary	23'2"			Y
38.02268	-84.46354	KU	Secondary	21'11"			Y
38.02268	-84.46354	KU	Secondary Riser	21'4"			Y
38.02268	-84.46354	Metronet	Communication		18'0"		Y
38.02268	-84.46354	Charter	Communication	19'0"	17'1"		68 Y
38.02268	-84.46354	Windstream	Communication	17'9"	16'1"		Y
38.02268	-84.46354	Windstream	Communication	16'10"	15'1"	14'7"	Y
38.02290	-84.46326	KU	Primary	29'1"			N
38.02290	-84.46326	KU	Primary	28'9"			N
38.02290	-84.46326	KU	Neutral	25'10"			N
38.02290	-84.46326	KU	Secondary	25'2"			N
38.02290	-84.46326	KU	Secondary	24'6"			N
38.02290	-84.46326	KU	OH Guy	23'11"			N
38.02290	-84.46326	Metronet	Communication		19'9"		N
38.02290	-84.46326	Charter	Communication	18'9"			92 N
38.02290	-84.46326	Windstream	Communication	17'8"			N
38.02290	-84.46326	Windstream	Communication	16'9"		15'8"	N
38.02312	-84.46294	KU	Primary	40'3"			N
38.02312	-84.46294	KU	Transformer	32'1"			N
38.02312	-84.46294	KU	Neutral	31'10"			N
38.02312	-84.46294	KU	Secondary	31'4"			N
38.02312	-84.46294	KU	Secondary	30'5"			N
38.02312	-84.46294	Metronet	Communication		21'9"		N
38.02312	-84.46294	Charter	Communication	20'9"			102 N
38.02312	-84.46294	Windstream	Communication	19'1"			N
38.02312	-84.46294	Windstream	Communication	17'6"		12'3"	N

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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	3=Elec
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N		Extend secondary riser
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	2=Comms
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N			Lower Charter
N			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
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N			
N			Lower Charter
N			Lower Windstream
N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Windstream
N	B:Residential/Over Driveways	1=None	
N			
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N	D: Pedestrian Only 9.5'	2=Comms	
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Y			
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Y			Resag Neutral
Y			Resag Secondary
Y			Resag Secondary
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Y			
N	B:Residential/Over Driveways	1=None	
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	1=None	Attach to new pole
N			Attach to new pole
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N			Attach to new pole
N			Attach to new pole
N			Attach to new pole
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N			Attach to new pole
N			Attach to new pole
N	B:Residential/Over Driveways	1=None	Attach to new pole
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
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N	D: Pedestrian Only 9.5'	1=None	Attach to new pole
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Windstream
N			Lower Windstream
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N	D: Pedestrian Only 9.5'	2=Comms	Trees blocking midspan
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N	D: Pedestrian Only 9.5'	2=Comms	

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N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
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N			
N	D: Pedestrian Only 9.5'	1=None	Attach to new pole
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N			Attach to new pole
N	D: Pedestrian Only 9.5'	2=Comms	
N			
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N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	3=Elec	
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N			Extend secondary riser
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	3=Elec	
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N			Extend secondary riser
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N	D: Pedestrian Only 9.5'	1=None	
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Y	D: Pedestrian Only 9.5'	2=Comms
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Y		Resag Windstream
N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N	B:Residential/Over Driveways	1=None
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N	B:Residential/Over Driveways	3=Elec
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N		Raise streetlight drip loop
N		
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N	B:Residential/Over Driveways	2=Comms
N		
N		
N		

N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	1=None	Transfer to new pole
N			Transfer to new pole
N			Transfer to new pole
N			Transfer to new pole
N			Transfer to new pole
N			Transfer to new pole
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
N			
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N			
N			
N			
N			Lower Charter
N			Lower Windstream
N	B:Residential/Over Driveways	1=None	
N			
N			
N			
N			
N			
Y	D: Pedestrian Only 9.5'	2=Comms	
Y			
Y			
Y			
Y			
Y			
Y			Lower & Resag Charter

Y			Lower Windstream
N	D: Pedestrian Only 9.5'	3=Elec	
N			
N			
N			
N			
N			Raise secondary drip loop
N			
N			
N			
N	D: Pedestrian Only 9.5'	3=Elec	
N			
N			
N			
N			Raise secondary drip loop
N			
N			
N			
N	N/A	4=Comms & Elec	
N			
N			
N			Raise secondary drip loop
N			
N			Lower Charter
N			
N			
N			
N	B:Residential/Over Driveways	1=None	
N			
N			
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Y	D: Pedestrian Only 9.5'	2=Comms	
Y			

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Y		Resag Charter
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N	D: Pedestrian Only 9.5'	3=Elec
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N		Raise Secondary
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N	D: Pedestrian Only 9.5'	1=None
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N			
N			Lower Charter
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
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N			
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	1=None	
N			
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N	D: Pedestrian Only 9.5'	2=Comms	
N			
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N			
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
Y	D: Pedestrian Only 9.5'	2=Comms	
Y			
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Y			
Y			
Y			Lower Charter

Y			Lower Windstream
Y			Lower Windstream
N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
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N			
N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			
N			Lower Charter
N			Lower Windstream
N			
N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			
N			Lower Charter
N			Lower Windstream
N			
N	D: Pedestrian Only 9.5'	2=Comms	
N			
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N			
N			Lower Charter
N			Lower Windstream
N			
N	B:Residential/Over Driveways	1=None	
N			
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Windstream
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N			Lower Windstream
N			
N	D: Pedestrian Only 9.5'	1=None	
N			
N			
N			
N			

N		
N		
N		
N		Extend secondary riser
N		
N		
N		
N		
N		
N		
N		
N	D: Pedestrian Only 9.5'	1=None
N		
N		
N		
N		
N		
N		
N		
N		
N		
N		
N		
N	D: Pedestrian Only 9.5'	3=Elec
N		
N		
N		
N		
N		
N		Remove out of service neutral
N		Remove out of service secondary
N		
N		
N		
N		
N	D: Pedestrian Only 9.5'	3=Elec
N		
N		
N		
N		
N		Remove out of service neutral
N		Remove out of service secondary
N		Remove out of service riser
N		
N		
N		
N		

N	D: Pedestrian Only 9.5'	1=None	
N			
N			
N			
N			
N			
N			
N			
N			
N			
N	D: Pedestrian Only 9.5'	2=Comms	
N			
N			
N			
N			
N			
N			
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
Y	D: Pedestrian Only 9.5'	2=Comms	
Y			
Y			
Y			
Y			
Y			
Y			
Y			
Y			Lower & Resag Charter
Y			Lower Windstream
Y			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
N			
N			
N			
N			
N			
N			
N			
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N	D: Pedestrian Only 9.5'	1=None	
N			
N			
N			

N			
N			
N			
N			
N			
N			
N	D: Pedestrian Only 9.5'	2=Comms	
N			
N			
N			
N			
N			
N			
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N			
N	D: Pedestrian Only 9.5'	2=Comms	
N			
N			
N			
N			
N			
N			
N			
N			
N			Lower Charter
N			Lower Windstream
N			Lower Windstream
N			
N	D: Pedestrian Only 9.5'	1=None	
N			
N			
N			
N			
N			
N			
N			
N			
N			
N			
N	D: Pedestrian Only 9.5'	1=None	
N			
N			
N			
N			
N			
N			
N			
N			
N			

From: Edwards, Kimberly
Sent: Tuesday, February 13, 2018 10:54 AM
To: Lauren Sandefur
Cc: Hays, Sarah K
Subject: RE: LX135-01 Metronet Application
Attachments: Application and pole data sheet.xlsx

Good morning Lauren,

Windstream OSP has reviewed the information you provided and they will accept the Pole Inventory Report in replacement of the Pole Attachment Data Sheets, however they will require a signed standard Windstream Pole Attachment Application form – see attached.

There is a \$75.00 application processing fee – with a maximum of 25 poles/application and a \$50.00 post inspection fee/pole.

Please note: Windstream will accept up to 300/poles per 30 rolling calendar days.

Please let me know of any other questions or concerns.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com <mailto:Kimberly.edwards@windstream.com> | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

<<http://www.wanosaurus.com/>>

From: Edwards, Kimberly
Sent: Monday, February 12, 2018 7:07 AM
To: 'Lauren Sandefur' <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01 Metronet Application

Good morning Lauren,

The Windstream OSP Managers/Supervisors in the field are currently reviewing the application/inventory report you provided to determine if this is acceptable. Since these are not the Windstream standard forms for pole attachments, I will need their approval to accept.

As soon as they have reviewed and provide their feedback, I will let you know.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com <<mailto:Kimberly.edwards@windstream.com>> | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

<<http://www.wanosaurus.com/>>

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Friday, February 09, 2018 11:12 AM
To: Edwards, Kimberly <Kimberly.Edwards@windstream.com <mailto:Kimberly.Edwards@windstream.com> >
Subject: RE: LX135-01 Metronet Application

Good Morning Kim,

Per my conversation yesterday with Brandie, she was reviewing our application to see if this would be ok to submit.

If you have a chance to review it today that would be great, I just need an update for Monday morning.

Thanks!

Lauren Sandefur
Permit Specialist

From: Lauren Sandefur
Sent: Thursday, February 8, 2018 10:43 AM
To: 'Brandie.Mcgehee@windstream.com' <Brandie.Mcgehee@windstream.com <mailto:Brandie.Mcgehee@windstream.com> >
Subject: LX135-01 Metronet Application

Good Morning Brandie,

Attached are the files for LX135-01, please let me know if these will work for you.

When applying we have to apply under the name 'CMN-RUS, Inc'.

There is a LX135-02 that will be submitted once we get this one figured out.

Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
<<http://www.MetronetInc.com>> www.MetronetInc.com

**NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH
BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE N**

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

Name of Firm Applying: _____ Contact Name, Phone # _____
 Street Address, City, ST, ZIP of Firm Applying _____ EMAIL ADDRESS _____
 _____ Authorized Signature & Date: _____

By this application & signature, my firm is agreeing to pay all engineering fees associated with this app
 If we choose to proceed all ESTIMATED fees, including engineering & makeready
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATI
NOTE: Final costs will be determined by actual time & material required to do the make-ready wor

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete
	Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						
21						
22						

23						
24						
25						

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE ACCEPTED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

ESTIMATED TOTAL COSTS					
IF BE PROCESSED WITHOUT THEM					

ndstream.com.

Windstream Pole Attachment Data Sheet

EXHIBIT B – PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER	
STREET LOCATION		NAME OF ATTACHER	
CITY/BORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy			
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT TOP OF CONDUIT RISER HEIGHT
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; If yes ➡ <input type="checkbox"/> Primary <input type="checkbox"/> Secondary	

MAKE READY WORK	REQUIRED <input type="checkbox"/> Yes <input type="checkbox"/> No	IF YES, PROVIDE ADDITIONAL DETAIL
------------------------	---	-----------------------------------

POLE DRAWING	POLE NO. ➡	BEFORE	AFTER
	*TYPE OF POWER ATTACHMENT ➡	<input type="checkbox"/> Neutral <input type="checkbox"/> Secondary	
<p style="text-align: center;">Pole Side</p> <p style="text-align: center;">Lowest Power Attachment Attach. Ht. _____</p> <p style="text-align: center;">* <input type="checkbox"/> Front <input type="checkbox"/> Back</p> <p style="text-align: center;">Mid Span Distance</p> <p style="text-align: center;">Proposed Attach. Ht. _____</p> <p style="text-align: center;">Attach. Ht. _____</p> <p style="text-align: center;">Attach. Ht. _____</p> <p style="text-align: center;">Attach. Ht. _____</p> <p style="text-align: center;">Ground Line</p>			
Company Name			
1. _____		<input type="checkbox"/> Front <input type="checkbox"/> Back	
2. _____		<input type="checkbox"/> Front <input type="checkbox"/> Back	
3. _____		<input type="checkbox"/> Front <input type="checkbox"/> Back	
4. _____		<input type="checkbox"/> Front <input type="checkbox"/> Back	

SPAN	MID-SPAN HEIGHT Ft.	SPAN CROSSES OVER (Check all that apply)
		<input type="checkbox"/> Body of Water <input type="checkbox"/> Street <input type="checkbox"/> Driveway <input type="checkbox"/> Field <input type="checkbox"/> Interstate <input type="checkbox"/> Swimming Pool <input type="checkbox"/> Building <input type="checkbox"/> Railroad <input type="checkbox"/> Yard <input type="checkbox"/> Parking Lot

NOTE	
-------------	--

Are there any other poles?

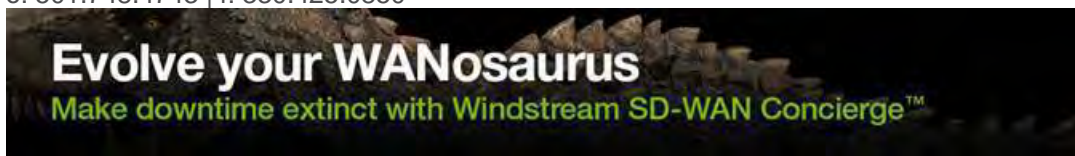
From: Windstream Jointuse
Sent: Thursday, March 15, 2018 6:09 PM
To: Lauren Sandefur
Cc: Hays, Sarah K
Subject: RE: LX132-01W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1527 and submitted to the Windstream Engineer for review as of 3/15/18 once the engineer reviews the application and determines that we have everything needed to proceed then we will begin processing the application. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, March 14, 2018 8:37 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: FW: LX132-01W

Good Morning,

Please see attached for the proposal titled LX132-01W. This is a proposal for Windstream Poles. Let me know if you have questions or anything else.

Thanks!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



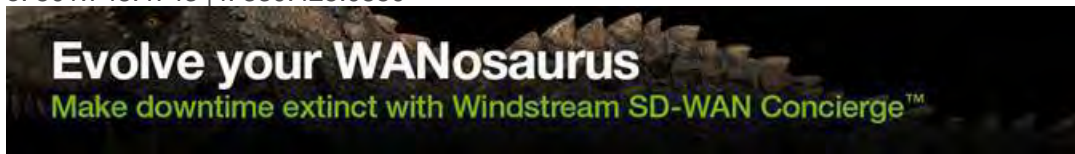
From: Windstream Jointuse
Sent: Thursday, March 22, 2018 12:28 PM
To: Lauren Sandefur; Hays, Sarah K
Cc: Permits; Edwards, Kimberly; Sanders, Ashley L
Subject: RE: LX132-02W

Good morning Lauren,

I will be rejecting this application at this time Windstream will not be accepting application again until 4/18/18.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Thursday, March 22, 2018 8:04 AM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Cc: Permits <Permits@metronetinc.com>
Subject: LX132-02W

Good morning,
Please see attached for proposal titled LX132-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hays, Sarah K
Sent: Tuesday, March 13, 2018 5:06 PM
To: Lauren Sandefur
Subject: RE: LX135-01W
Attachments: LX135-01W - METRONET POLE INVENTORY REPORT.XLSX

Lauren,

Here is the paraphrased answer from our engineer for the area.

"I'd be fine with the pole inventory report if it were filled out. However, if you open this one, column H for "Make Ready 1 = non, 2 = comms, 3 = elec, etc..." isn't populated and only some of the poles have column I populated for "Make Ready Remedies". (see snip below where I captured info on 2 of the poles). I'm fine with "attach to new pole" in column I on the 2nd pole on this example, but "unk" for make ready on both of them doesn't tell me what I need to know."

Let me know if this makes sense to you all.

	A	B	C	D	E	F	G	H	I		
1	LX135-01W Pole Inventory Report			Pole #		Pole ID		Existing Size/Class		Proposed size/class	
82				Make Ready:		Pole Owner		1=None		2=Comms	
83		22W	27220-125-01	40/ 3		WS	UNK				
84		22W	27220-125-01			WS					
85		22W	27220-125-01			WS					
86		22W	27220-125-01			WS					
87		22W	27220-125-01			WS					
88		22W	27220-125-01			WS					
89		22W	27220-125-01			WS					
90		22W	27220-125-01			WS					
91											
92		23W	27220-125	40/ 3		WS	UNK		Attach to new po		
93		23W	27220-125			WS			Attach to new po		
94		23W	27220-125			WS			Attach to new po		
95		23W	27220-125			WS			Attach to new po		
96		23W	27220-125			WS			Attach to new po		
97		23W	27220-125			WS			Attach to new po		
98		23W	27220-125			WS			Attach to new po		
99		23W	27220-125			WS			Attach to new po		
100		23W	27220-125			WS			Attach to new po		
101		23W	27220-125			WS			Attach to new po		
102		23W	27220-125			WS			Attach to new po		

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Monday, March 05, 2018 1:00 PM

To: Windstream Jointuse <Windstream.Jointuse@windstream.com>

Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: LX135-01W

Please see attached for proposal titled LX135-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



LX135-01W Pole Inventory Report

POLE COUNT		16W	NT	45/ 3	WS	UNK
KU	0	16W	NT		WS	
Windstream	25	16W	NT		WS	
Total Pole Count	25	16W	NT		WS	
Total Needing Make Ready	UNK	16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		16W	NT		WS	
		17W	27310-125	40/ 3	WS	UNK
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		17W	27310-125		WS	
		18W	27310-125-02	45/ 3	WS	UNK
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	
		18W	27310-125-02		WS	

18W	27310-125-02		WS	
18W	27310-125-02		WS	
18W	27310-125-02		WS	
18W	27310-125-02		WS	
19W	27310-126-01	45/ 1	WS	UNK
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
19W	27310-126-01		WS	
20W	27310-126	45/ 3	WS	UNK
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
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20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
20W	27310-126		WS	
21W	27310-126-02	40/ 3	WS	UNK
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
21W	27310-126-02		WS	
22W	27220-125-01	40/ 3	WS	UNK
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	
22W	27220-125-01		WS	

22W	27220-125-01		WS	
22W	27220-125-01		WS	
23W	27220-125	40/ 3	WS	UNK
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
23W	27220-125		WS	
24W	27220-127-02	40/ 2	WS	UNK
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
24W	27220-127-02		WS	
25W	27220-126-01	40/ 2	WS	UNK
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
25W	27220-126-01		WS	
26W	27220	40/ 3	WS	UNK
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
26W	27220		WS	
27W	27220-125-02	40/ 3	WS	UNK
27W	27220-125-02		WS	

27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
27W	27220-125-02		WS	
28W	27290-126-01	40/ 3	WS	UNK
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
28W	27290-126-01		WS	
33W	27290-126	45/ 3	WS	UNK
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
33W	27290-126		WS	
34W	NT	35/ 5	WS	UNK
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
34W	NT		WS	
35W	NT	40/ 3	WS	UNK
35W	NT		WS	
35W	NT		WS	
35W	NT		WS	

Owner	1=None 2=Comms 3=Elec	4=Comms&Elec 5=Simple PCO 6=Complex PCO	Make Ready Remedies	Pole Capacity Utilization %	Nearest Street Name	Latitude	Longitude	Existing
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39.90	126 ST MARGARET DR	38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	KU				
		38.02139	-84.46603	Metronet				
		38.02139	-84.46603	Charter				
		38.02139	-84.46603	Windstream				
24.60	2047 COBURN BLVD, :	38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	KU				
		38.02117	-84.46575	Metronet				
		38.02117	-84.46575	Metronet				
		38.02117	-84.46575	Charter				
		38.02117	-84.46575	Charter				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
		38.02117	-84.46575	Windstream				
41.90	125 ST WILLIAM DR	38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	KU				
		38.02091	-84.46549	Metronet				

		38.02091	-84.46549	Charter
		38.02091	-84.46549	Windstream
		38.02091	-84.46549	Windstream
		38.02091	-84.46549	Windstream
41.60	126 ST WILLIAM DR	38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	KU
		38.02064	-84.46514	Metronet
		38.02064	-84.46514	Charter
		38.02064	-84.46514	Windstream
		38.02064	-84.46514	Windstream
		38.02064	-84.46514	Windstream
58.30	2115 COBURN BLVD	38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	KU
		38.02041	-84.46491	Metronet
		38.02041	-84.46491	Metronet
		38.02041	-84.46491	Charter
		38.02041	-84.46491	Charter
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
		38.02041	-84.46491	Windstream
41.80	125 ST JAMES DR	38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	KU
		38.02012	-84.46461	Metronet
		38.02012	-84.46461	Charter
		38.02012	-84.46461	Windstream
		38.02012	-84.46461	Windstream
33.40	126 ST JAMES DR	38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	KU
		38.01986	-84.46426	Metronet
		38.01986	-84.46426	Charter

			38.01986	-84.46426	Windstream
			38.01986	-84.46426	Windstream
Attach to new pole	41.80	2137 COBURN BLVD, 4	38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	KU
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Metronet
Attach to new pole			38.01964	-84.46403	Charter
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole			38.01964	-84.46403	Windstream
Attach to new pole	24.70	125 ST ANN DR	38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	KU
Attach to new pole			38.01941	-84.46376	Metronet
Attach to new pole			38.01941	-84.46376	Charter
Attach to new pole			38.01941	-84.46376	Windstream
Attach to new pole			38.01941	-84.46376	Windstream
	25.80	126 ST ANN DR	38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	KU
			38.01912	-84.46343	Metronet
			38.01912	-84.46343	Charter
			38.01912	-84.46343	Windstream
			38.01912	-84.46343	Windstream
Attach to new pole	27.20	2205 COBURN BLVD, 4	38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	KU
Attach to new pole			38.01890	-84.46321	Metronet
Attach to new pole			38.01890	-84.46321	Charter
Attach to new pole			38.01890	-84.46321	Windstream
Attach to new pole			38.01890	-84.46321	Windstream
	26.30	125 ST PHILLIP DR	38.01867	-84.46295	KU
			38.01867	-84.46295	KU

		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	KU
		38.01867	-84.46295	Metronet
		38.01867	-84.46295	Charter
		38.01867	-84.46295	Windstream
		38.01867	-84.46295	Windstream
Trees blocking midspan	23.70 126 ST PHILLIP DR	38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	KU
		38.01841	-84.46261	Metronet
		38.01841	-84.46261	Charter
		38.01841	-84.46261	Windstream
		38.01841	-84.46261	Windstream
Attach to new pole	43.00 122 ST PHILLIP DR	38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	KU
Attach to new pole		38.01820	-84.46238	Metronet
Attach to new pole		38.01820	-84.46238	Charter
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
Attach to new pole		38.01820	-84.46238	Windstream
	35.90 134 ST PHILLIP DR	38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	KU
		38.01842	-84.46205	Metronet
		38.01842	-84.46205	Charter
		38.01842	-84.46205	Windstream
		38.01842	-84.46205	Windstream
		38.01842	-84.46205	Windstream
	29.10 142 ST PHILLIP DR	38.01867	-84.46175	KU
		38.01867	-84.46175	KU
		38.01867	-84.46175	KU
		38.01867	-84.46175	KU

	38.01867	-84.46175	KU
	38.01867	-84.46175	KU
	38.01867	-84.46175	Metronet
	38.01867	-84.46175	Charter
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
	38.01867	-84.46175	Windstream
23.60 150 ST PHILLIP DR	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	KU
	38.01885	-84.46142	Metronet
	38.01885	-84.46142	Charter
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
	38.01885	-84.46142	Windstream
32.20 158 ST PHILLIP DR	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	KU
	38.01905	-84.46110	Metronet
	38.01905	-84.46110	Charter
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
	38.01905	-84.46110	Windstream
45.10 166 ST PHILLIP DR	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	KU
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Metronet
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Charter
	38.01931	-84.46081	Windstream

g Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance	Mid Span Clearance	3rd Party Comm to Ground	3rd Party Comm to Power	Environment Code	Roads B: Residential/Over Driveway	Pedestrian traffic only D: Pe
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Primary	34'8"			N	Y			D: Pedestrian Only 9.5'		
Transformer	27'0"			N	Y					
Neutral	25'11"			N	Y					
Secondary	25'2"			N	Y					
Secondary	24'6"			N	Y					
Streetlight	23'5"			N	Y					
Communication				N	Y					
Communication	20'6"		23	N	Y					
Communication	19'3"	16'5"		N	Y					
Primary	32'9"			Y	N			D: Pedestrian Only 9.5'		
Primary	30'5"			Y	N					
Transformer	25'6"			Y	N					
Neutral	23'11"			Y	N					
Secondary	23'1"			Y	N					
Secondary	22'4"			Y	N					
Streetlight	21'4"			Y	N					
Streetlight Drip Loop	20'11"			Y	N					
Communication				Y	N					
Communication				Y	N					
Communication	19'2"			Y	N					
Communication	18'11"		44	Y	N					
Communication	18'5"			Y	N					
Communication	18'2"			Y	N					
Communication	17'9"			Y	N					
Communication	17'5"			Y	N					
Communication	16'10"			Y	N					
Communication	16'4"	15'5"		Y	N					
Primary	39'8"			N	N			D: Pedestrian Only 9.5'		
Transformer	31'5"			N	N					
Neutral	30'3"			N	N					
Secondary	29'1"			N	N					
Secondary	28'4"			N	N					
Streetlight	26'3"			N	N					
Streetlight Drip Loop	25'7"			N	N					
Communication				N	N					

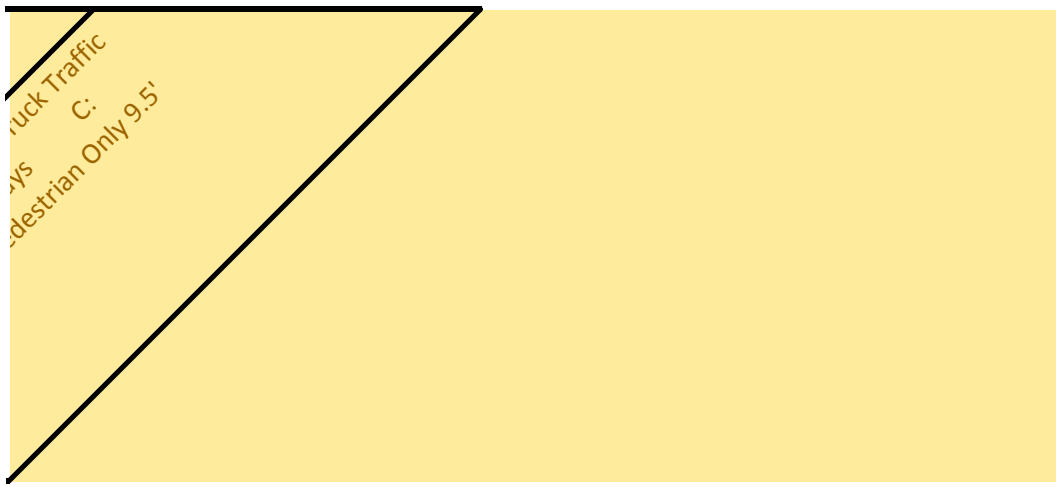
Communication	20'6"	113	N	N	
Communication	19'4"		N	N	
Communication	18'3"		N	N	
Communication	17'3"	16'6"	N	N	
Primary	38'6"		N	N	D: Pedestrian Only 9.5'
Neutral	30'10"		N	N	
Secondary	29'11"		N	N	
Secondary	28'11"		N	N	
Streetlight	27'6"		N	N	
Communication			N	N	
Communication	21'3"	72	N	N	
Communication	20'2"		N	N	
Communication	19'0"		N	N	
Communication	18'0"	15'2"	N	N	
Primary	38'0"		N	Y	D: Pedestrian Only 9.5'
Primary	33'6"		N	Y	
Transformer	27'4"		N	Y	
Neutral	26'9"		N	Y	
Secondary	25'6"		N	Y	
Secondary	24'3"		N	Y	
Communication			N	Y	
Communication			N	Y	
Communication	18'10"	22	N	Y	
Communication	17'10"		N	Y	
Communication	16'10"		N	Y	
Communication	16'2"		N	Y	
Communication	15'9"		N	Y	
Communication	15'1"		N	Y	
Communication	14'7"		N	Y	
Communication	14'1"	16'2"	N	Y	
Communication	13'7"		N	Y	
Primary	33'7'		N	N	B:Residential/Over Driveways
Neutral	26'2"		N	N	
Secondary Riser	25'6"		N	N	
Secondary	25'1'		N	N	
Secondary	24'3"		N	N	
Communication			N	N	
Communication	19'11"	71	N	N	
Communication	19'0"		N	N	
Communication	18'0"	19'7"	N	N	
Primary	33'7"		N	N	D: Pedestrian Only 9.5'
Neutral	26'1"		N	N	
Secondary	25'1"		N	N	
Secondary	24'2"		N	N	
Communication			N	N	
Communication	19'10"	49	N	N	

Communication	18'10"		N	N	
Communication	17'10"	13'6"	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Transformer			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Streetlight			N	N	
Communication			N	N	
Communication			N	N	
Communication		71	N	N	
Communication			N	N	
Communication		15'1"	N	N	
Primary			N	N	B:Residential/Over Driveways
Primary			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Communication			N	N	
Communication		74	N	N	
Communication			N	N	
Communication		17'6"	N	N	
Primary	33'11"		N	N	D: Pedestrian Only 9.5'
Neutral	26'3"		N	N	
Secondary	25'6"		N	N	
Secondary	24'9"		N	N	
Communication			N	N	
Communication	21'4"	35	N	N	
Communication	19'2"		N	N	
Communication	18'3"	16'5"	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Transformer			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Streetlight			N	N	
Communication			N	N	
Communication		41	N	N	
Communication			N	N	
Communication		16'0"	N	N	
Primary	32'10"		Y	N	D: Pedestrian Only 9.5'
Neutral	25'9"		Y	N	

Secondary	25'0"		Y	N	
Secondary Riser	24'8"		Y	N	
Secondary	24'4"		Y	N	
Secondary Drip Loop	23'10"		Y	N	
Communication			Y	N	
Communication	20'9"	42	Y	N	
Communication	19'9"		Y	N	
Communication	18'10"	17'5"	Y	N	
Primary	33'10"		N	N	D: Pedestrian Only 9.5'
Neutral	25'9"		N	N	
Secondary Riser	25'2"		N	N	
Secondary	24'5"		N	N	
Secondary	23'9"		N	N	
Communication			N	N	
Communication	20'3"	UNK	N	N	
Communication	19'2"		N	N	
Communication	18'1"	UNK	N	N	
Primary			N	N	D: Pedestrian Only 9.5'
Primary			N	N	
Neutral			N	N	
Secondary			N	N	
Secondary			N	N	
Transformer			N	N	
Communication			N	N	
Communication		40	N	N	
Communication			N	N	
Communication			N	N	
Communication			N	N	
Communication		12'10"	N	N	
Primary	29'0"		Y	N	D: Pedestrian Only 9.5'
Neutral	22'11"		Y	N	
Secondary	22'1"		Y	N	
Secondary	21'4"		Y	N	
Secondary Riser	20'9"		Y	N	
Communication			Y	N	
Communication	18'3"	40	Y	N	
Communication	17'6"		Y	N	
Communication	16'9"		Y	N	
Communication	15'5"	12'2"	Y	N	
Primary	33'5"		Y	N	D: Pedestrian Only 9.5'
Transformer	26'7"		Y	N	
Neutral	26'2"		Y	N	
Secondary	25'5"		Y	N	

Secondary	24'9"			Y	N
Secondary Riser	20'7"			Y	N
Communication				Y	N
Communication	18'8"	76		Y	N
Communication	17'11"			Y	N
Communication	17'4"			Y	N
Communication	16'2"			Y	N
Communication	14'9"	12'7"		Y	N
Primary	36'1"			N	N
Primary	35'8"			N	N
Neutral	28'10"			N	N
Secondary	28'1"			N	N
Secondary	27'5"			N	N
Communication				N	N
Communication	20'5"	69		N	N
Communication	19'2"			N	N
Communication	18'1"			N	N
Communication	16'0"	12'6"		N	N
Primary	36'5"			N	N
Primary	36'0"			N	N
Transformer	29'6"			N	N
Neutral	28'6"			N	N
Secondary	27'9"			N	N
Secondary	27'0"			N	N
Secondary Riser	25'3"			N	N
Communication				N	N
Communication	21'5"	58		N	N
Communication	20'8"			N	N
Communication	19'9"			N	N
Communication	18'3"	13'2"		N	N
Primary	36'5"			N	N
Primary	35'10"			N	N
Primary	31'10"			N	N
Neutral	28'1"			N	N
Neutral	27'7"			N	N
Secondary	26'9"			N	N
Secondary	26'0"			N	N
Down Guy	24'11"			N	N
Communication				N	N
Communication				N	N
Down Guy	17'8"	16'10"	82	N	N
Communication	17'2"			N	N
Communication	17'0"			N	N
Communication	16'5"			N	N

Communication	15'6"		N	N	
Communication	13'7"		N	N	
Primary	39'0"		N	N	D: Pedestrian Only 9.5'
Primary	34'4"		N	N	
Neutral	29'2"		N	N	
Neutral	28'11"		N	N	
Secondary	28'7"		N	N	
Secondary	28'2"		N	N	
Secondary	27'11"		N	N	
Secondary	27'1"		N	N	
Communication			N	N	
Communication	21'7"	61	N	N	
Communication	20'7"		N	N	
Communication	19'5"		N	N	
Communication	18'10"		N	N	
Communication	18'5"		N	N	
Communication	18'0"		N	N	
Communication	17'3"		N	N	
Communication	16'4"		N	N	
Communication	15'7"	10'8"	N	N	
Primary	31'10"		Y	N	D: Pedestrian Only 9.5'
Neutral	29'0"		Y	N	
Secondary	28'0"		Y	N	
Secondary	27'5"		Y	N	
Transformer	22'5"		Y	N	
Communication			Y	N	
Communication	19'6"	UNK	Y	N	
Communication	18'2"		Y	N	
Communication	16'9"		Y	N	
Communication	15'8"		Y	N	
Communication	14'6"	UNK	Y	N	
Primary	37'4"		N	N	D: Pedestrian Only 9.5'
Neutral	33'0"		N	N	
Secondary	32'3"		N	N	
Secondary	31'7"		N	N	
Communication			N	N	
Communication	23'4"	84	N	N	
Communication	22'5"		N	N	
Communication	21'6"		N	N	
Communication	20'5"		N	N	
Communication	19'5"	17'0"	N	N	
Primary	32'3"		N	N	D: Pedestrian Only 9.5'
Neutral	28'10"		N	N	



From: Windstream Jointuse
Sent: Wednesday, March 07, 2018 4:06 PM
To: Lauren Sandefur
Cc: Edwards, Kimberly
Subject: RE: LX135-01W
Attachments: RE: LX135-01 Metronet Application; LX135-1 - METRONET POLE INVENTORY REPORT.XLSX; WS Pole Attachment Data Sheet Exhibit B II multiple pages.pdf

Lauren,

Windstream is rejecting this application submission.

I have attached a previous email. We do not have enough information with the files you have attached.

Windstream OSP previously stated they would accept the Pole Inventory Report in replacement of the Pole Data Sheet, but we did not receive a Pole Inventory Report with this application submission.

Please resubmit with the Pole Inventory Report or please fill out the Windstream Pole Data Sheet for each pole MetroNet is wanting to attach.

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 05, 2018 1:00 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: LX135-01W

Please see attached for proposal titled LX135-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

LX135-1 Pole Inventory Report								
		Pole #	Pole ID	Existing Size/Class	Proposed size/class	Pole Owner	Pole Capacity Utilization %	Nearest Street Name
POLE COUNT	125	1P	24380-143	50/ 2		WS	26.70	143 IDLE HOUR DR
Windstream (WS)	125	1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		1P	24380-143			WS		
		2	NT	40/ 3		WS		151 IDLE HOUR DR
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		2	NT			WS		
		3	NT	40/ 3		WS		165 IDLE HOUR DR
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		3	NT			WS		
		4	NT	40/ 3		WS		183 IDLE HOUR DR
		4	NT			WS		
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		5	NT	40/ 3		WS		203 IDLE HOUR DR
		5	NT			WS		
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6	NT	40/ 3	WS	211 IDLE HOUR DR
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7	NT	40/ 3	WS	235 IDLE HOUR DR
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8	NT	45/ 3	WS	251 IDLE HOUR DR
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9	NT	30/ 5	WS	259 IDLE HOUR DR
9	NT		WS	
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10	NT	45/ 3	WS	259 IDLE HOUR DR
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11	NT	35/ 3	WS	271 IDLE HOUR DR
11	NT		WS	
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12	NT	40/ 3	WS	275 IDLE HOUR DR
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13	NT	40/ 4	WS	287 IDLE HOUR DR
13	NT		WS	
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14	NT	40/ 3	WS	291 IDLE HOUR DR
14	NT		WS	
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15	NT	35/4	WS	121 ST MARGARET DR, 1
15	NT		WS	
15	NT		WS	
16	NT	45/ 3	WS	126 ST MARGARET DR
16	NT		WS	
16	NT		WS	
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16	NT		WS	
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17	27310-125	40/ 3	WS	2047 COBURN BLVD, 12
17	27310-125		WS	
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17	27310-125		WS	
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18	27310-125-02	45/ 3	WS	125 ST WILLIAM DR
18	27310-125-02		WS	
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18	27310-125-02		WS	
18	27310-125-02		WS	
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18	27310-125-02		WS	
18	27310-125-02		WS	
18	27310-125-02		WS	
19	27310-126-01	45/ 1	WS	126 ST WILLIAM DR
19	27310-126-01		WS	
19	27310-126-01		WS	
19	27310-126-01		WS	
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19	27310-126-01		WS	
19	27310-126-01		WS	
20	27310-126	45/ 3	WS	2115 COBURN BLVD

20	27310-126		WS	
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21	27310-126-02	40/ 3	WS	125 ST JAMES DR
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
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21	27310-126-02		WS	
21	27310-126-02		WS	
21	27310-126-02		WS	
22	27220-125-01	40/ 3	WS	126 ST JAMES DR
22	27220-125-01		WS	
22	27220-125-01		WS	
22	27220-125-01		WS	
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22	27220-125-01		WS	
22	27220-125-01		WS	
23	27220-125	40/ 3	WS	2137 COBURN BLVD, 4
23	27220-125		WS	
23	27220-125		WS	
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24P	27220-127-02	40/ 2	WS	26.90 125 ST ANN DR
24P	27220-127-02		WS	

24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
24P	27220-127-02		WS	
25	27220-126-01	40/ 2	WS	126 ST ANN DR
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
25	27220-126-01		WS	
26	27220	40/ 3	WS	2205 COBURN BLVD, 4
26	27220		WS	
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27	27220-125-02	40/ 3	WS	125 ST PHILLIP DR
27	27220-125-02		WS	
27	27220-125-02		WS	
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27	27220-125-02		WS	
27	27220-125-02		WS	
27	27220-125-02		WS	
28	27290-126-01	40/ 3	WS	126 ST PHILLIP DR
28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
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28	27290-126-01		WS	
28	27290-126-01		WS	
28	27290-126-01		WS	
29	NT	45/ 3	WS	2233 RICHMOND RD

29	NT		WS	
29	NT		WS	
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29	NT		WS	
29	NT		WS	
30	1869446	45/ 3	WS	2233 RICHMOND RD
30	1869446		WS	
30	1869446		WS	
30	1869446		WS	
30	1869446		WS	
30	1869446		WS	
31	27295-120	45/ 3	WS	118 ST PHILLIP DR, 4
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
31	27295-120		WS	
32P	27290-126-02	40/ 2	WS	29.20 118 ST PHILLIP DR, 4
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
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32P	27290-126-02		WS	
32P	27290-126-02		WS	
32P	27290-126-02		WS	
33	27290-126	45/ 3	WS	122 ST PHILLIP DR
33	27290-126		WS	
33	27290-126		WS	
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33	27290-126		WS	
33	27290-126		WS	
33	27290-126		WS	
34	NT	35/ 5	WS	134 ST PHILLIP DR
34	NT		WS	
34	NT		WS	

38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
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38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
38P	L27290-P166-WS		WS	
39	NT	40/ 3	WS	166 ST PHILLIP DR
39	NT		WS	
39	NT		WS	
39	NT		WS	
39	NT		WS	
40P	NT	45/ 3	WS	52.60 162 ST PHILLIP DR
40P	NT		WS	
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41	27295-138	45/ 3	WS	2349 RICHMOND RD, 220
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
41	27295-138		WS	
42	27295-142	45/ 3	WS	195 LIFE LN
42	27295-142		WS	
42	27295-142		WS	
42	27295-142		WS	
42	27295-142		WS	
42	27295-142		WS	

42	27295-142		WS	
43	27295-146	45/ 3	WS	195 LIFE LN
43	27295-146		WS	
43	27295-146		WS	
43	27295-146		WS	
43	27295-146		WS	
43	27295-146		WS	
43	27295-146		WS	
44P	NT	50/ 2	WS	54.80 195 LIFE LN
44P	NT		WS	
44P	NT		WS	
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44P	NT		WS	
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44P	NT		WS	
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45	1869445	45/ 3	WS	166 ST PHILLIP DR
45	1869445		WS	
45	1869445		WS	
45	1869445		WS	
46P	NT	40/ 3	WS	40.10 166 ST PHILLIP DR
46P	NT		WS	
46P	NT		WS	
46P	NT		WS	
46P	NT		WS	
46P	NT		WS	
46P	NT		WS	
47	NT	45/ 3	WS	212 ST ANN DR
47	NT		WS	
47	NT		WS	
47	NT		WS	
47	NT		WS	
47	NT		WS	
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48	NT	45/ 3	WS	212 ST ANN DR
48	NT		WS	
48	NT		WS	
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49	NT	45/ 3	WS	232 ST ANN DR
49	NT		WS	
49	NT		WS	
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49	NT		WS	
49	NT		WS	
50	L508-P1	45/ 3	WS	244 ST ANN DR
50	L508-P1		WS	
50	L508-P1		WS	
50	L508-P1		WS	
50	L508-P1		WS	
51	L508-P2	50/ 2	WS	252 ST ANN DR
51	L508-P2		WS	
51	L508-P2		WS	
51	L508-P2		WS	
51	L508-P2		WS	
51	L508-P2		WS	
52	L508-P3	45/ 3	WS	260 ST ANN DR
52	L508-P3		WS	
52	L508-P3		WS	
52	L508-P3		WS	
52	L508-P3		WS	
52	L508-P3		WS	
53	L508-P4	45/ 3	WS	264 ST ANN DR
53	L508-P4		WS	
53	L508-P4		WS	
53	L508-P4		WS	
53	L508-P4		WS	
53	L508-P4		WS	
54	L508-P5	45/ 3	WS	1490 E NEW CIRCLE RD
54	L508-P5		WS	
54	L508-P5		WS	
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54	L508-P5		WS	
55	NT	45/ 3	WS	1490 E NEW CIRCLE RD
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56	26230-1460	50/ 2	WS	1450 E NEW CIRCLE RD
56	26230-1460		WS	
56	26230-1460		WS	
56	26230-1460		WS	
56	26230-1460		WS	
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56	26230-1460		WS	
57P	27220-228	45/ 3	WS	46.70 228 ST ANN DR
57P	27220-228		WS	
57P	27220-228		WS	
57P	27220-228		WS	
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57P	27220-228		WS	
57P	27220-228		WS	
58	NT	40/ 3	WS	240 ST ANN DR
58	NT		WS	
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59	NT	45/ 3	WS	248 ST ANN DR
59	NT		WS	
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60	NT	40/ 3	WS	256 ST ANN DR
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61	27220-260	40/ 2	WS	260 ST ANN DR
61	27220-260		WS	
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62	NT	40/ 3	WS	268 ST ANN DR
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63	NT	40/ 1	WS	272 ST ANN DR
63	NT		WS	
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64	28930-2163	40/ 3	WS	2163 WILL FANT DR, 1/2
64	28930-2163		WS	
64	28930-2163		WS	
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64	28930-2163		WS	
65	28930-2157	40/ 4	WS	2157 WILL FANT DR, 1/2
65	28930-2157		WS	
65	28930-2157		WS	
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65	28930-2157		WS	
66	28930-2151	40/ 4	WS	2151 WILL FANT DR
66	28930-2151		WS	
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66	28930-2151		WS	
67	28930-2143	40/ 3	WS	2145 WILL FANT DR, 1/2
67	28930-2143		WS	
67	28930-2143		WS	
67	28930-2143		WS	
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67	28930-2143		WS	

68P	28930-2141	40/ 3	WS	32.30 2143 WILL FANT DR, 1/2
68P	28930-2141		WS	
68P	28930-2141		WS	
68P	28930-2141		WS	
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68P	28930-2141		WS	
68P	28930-2141		WS	
68P	28930-2141		WS	
68P	28930-2141		WS	
69	28930-2137	40/ 4	WS	2141 WILL FANT DR
69	28930-2137		WS	
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69	28930-2137		WS	
70	28930-2135	40/ 3	WS	2137 WILL FANT DR, 4
70	28930-2135		WS	
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70	28930-2135		WS	
71	28930-2129	45/ 3	WS	2133 WILL FANT DR, 4
71	28930-2129		WS	
71	28930-2129		WS	
71	28930-2129		WS	
71	28930-2129		WS	
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71	28930-2129		WS	

74	NT		WS	
74	NT		WS	
74	NT		WS	
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74	NT		WS	
74	NT		WS	
75P	28930-2111	45/ 2	WS	25.10 2216 YOUNG DR, 7
75P	28930-2111		WS	
75P	28930-2111		WS	
75P	28930-2111		WS	
75P	28930-2111		WS	
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75P	28930-2111		WS	
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75P	28930-2111		WS	
75P	28930-2111		WS	
76	NT	40/ 4	WS	308 ST GEORGE DR
76	NT		WS	
76	NT		WS	
76	NT		WS	
76	NT		WS	
76	NT		WS	
76	NT		WS	
77	28930-2109	40/ 3	WS	304 ST GEORGE DR
77	28930-2109		WS	
77	28930-2109		WS	
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77	28930-2109		WS	
77	28930-2109		WS	
77	28930-2109		WS	
77	28930-2109		WS	
78	NT	40/ 3	WS	2057 ST MICHAEL DR
78	NT		WS	
78	NT		WS	
78	NT		WS	
78	NT		WS	
78	NT		WS	
79	NT	40/ 3	WS	2102 WILL FANT DR
79	NT		WS	
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79	NT		WS	
80	NT	40/ 3	WS	2105 ST MICHAEL DR, B
80	NT		WS	
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81	NT	40/ 3	WS	2128 WILL FANT DR, 6
81	NT		WS	
81	NT		WS	
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81	NT		WS	
81	NT		WS	
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82	NT	40/ 3	WS	2134 WILL FANT DR
82	NT		WS	
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82	NT		WS	
82	NT		WS	
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83	27285-2049	45/ 3	WS	308 ST GEORGE DR
83	27285-2049		WS	
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83	27285-2049		WS	
83	27285-2049		WS	
84	27285-2045	45/ 3	WS	2041 ST MICHAEL DR, 6
84	27285-2045		WS	

84	27285-2045		WS	
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84	27285-2045		WS	
84	27285-2045		WS	
84	27285-2045		WS	
85	27285-2033	45/3	WS	2029 ST MICHAEL DR, 13
85	27285-2033		WS	
85	27285-2033		WS	
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85	27285-2033		WS	
86P	NT	45/ 3	WS	35.50 2029 ST MICHAEL DR, 10
86P	NT		WS	
86P	NT		WS	
86P	NT		WS	
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86P	NT		WS	
86P	NT		WS	
86P	NT		WS	
86P	NT		WS	
86P	NT		WS	
87	NT	40/ 3	WS	2021 ST MICHAEL DR, 5
87	NT		WS	
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87	NT		WS	
88	NT	40/ 3	WS	2017 ST MICHAEL DR, 5
88	NT		WS	
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88	NT		WS	
88	NT		WS	
88	NT		WS	
89	NT	40/ 3	WS	2015 ST MICHAEL DR, 5
89	NT		WS	
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90	NT	40/ 3	WS	2001 ST MICHAEL DR, 4
90	NT		WS	
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90	NT		WS	
90	NT		WS	
90	NT		WS	
90	NT		WS	
90	NT		WS	
91	NT	40/ 3	WS	2001 ST MICHAEL DR, 3
91	NT		WS	
91	NT		WS	
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92	NT	40/ 3	WS	302 IDLE HOUR DR
92	NT		WS	
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93	NT	40/3	WS	297 ST MARGARET DR
93	NT		WS	
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94	NT	40/ 3	WS	285 ST MARGARET DR
94	NT		WS	
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95	NT	40/ 3	WS	277 ST MARGARET DR
95	NT		WS	
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96	NT	35/ 3	WS	265 ST MARGARET DR
96	NT		WS	
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97	NT	40/ 4	WS	257 ST MARGARET DR
97	NT		WS	
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98	NT	40/ 3	WS	245 ST MARGARET DR
98	NT		WS	
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98	NT		WS	
98	NT		WS	
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98	NT		WS	
99P	24380-266	40/ 3	WS	39.10 237 ST MARGARET DR
99P	24380-266		WS	
99P	24380-266		WS	
99P	24380-266		WS	
99P	24380-266		WS	
99P	24380-266		WS	
99P	24380-266		WS	
99P	24380-266		WS	
99P	24380-266		WS	
99P	24380-266		WS	
100	24380-258	35/ 4	WS	229 ST MARGARET DR
100	24380-258		WS	
100	24380-258		WS	
100	24380-258		WS	
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100	24380-258		WS	
101	NT	40/ 3	WS	217 ST MARGARET DR
101	NT		WS	

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102	NT	40/ 3	WS	209 ST MARGARET DR
102	NT		WS	
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102	NT		WS	
103	24380-218	35/ 3	WS	201 ST MARGARET DR
103	24380-218		WS	
103	24380-218		WS	
103	24380-218		WS	
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103	24380-218		WS	
103	24380-218		WS	
104	24380-210	35/ 3	WS	185 ST MARGARET DR
104	24380-210		WS	
104	24380-210		WS	
104	24380-210		WS	
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104	24380-210		WS	
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104	24380-210		WS	
104	24380-210		WS	
104	24380-210		WS	
105	NT	35/3	WS	181 ST MARGARET DR
105	NT		WS	
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105	NT		WS	

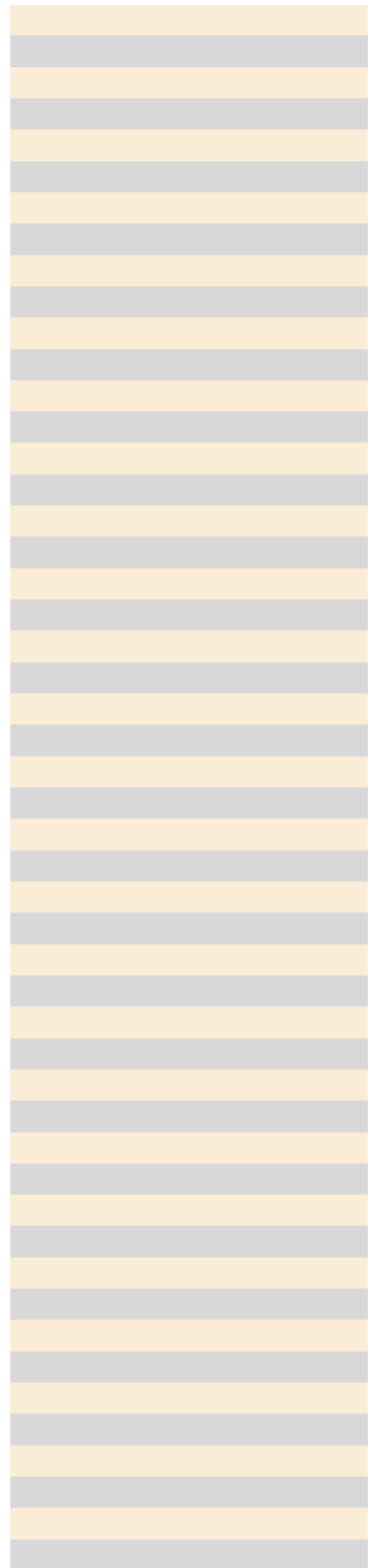
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111	24380-140	40/ 3	WS	1005 CORINTHIAN CT
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112	NT	40/ 3	WS	3400 DESTIN CT
112	NT		WS	
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113	24340-120	40/ 3	WS	3404 DESTIN CT
113	24340-120		WS	
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114	24340-114	20/ 1	WS	3408 DESTIN CT
114	24340-114		WS	
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115	24340-100-20	40/ 3	WS	1000 KAVENAUGH LN
115	24340-100-20		WS	
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116P	24340-116	40/ 3	WS	26.00 100 IDLE HOUR DR, 12
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
116P	24340-116		WS	
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116P	24340-116		WS	
116P	24340-116		WS	

117	NT	40/ 3	WS	133 ST WILLIAM DR
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
117	NT		WS	
118	27310-141	35/ 3	WS	141 ST WILLIAM DR
118	27310-141		WS	
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118	27310-141		WS	
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118	27310-141		WS	
118	27310-141		WS	
119	27310-157	35/ 4	WS	149 ST WILLIAM DR
119	27310-157		WS	
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119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
119	27310-157		WS	
120	27310-165	35/ 4	WS	153 ST WILLIAM DR
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
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120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
120	27310-165		WS	
121	27310-173	40/ 3	WS	165 ST WILLIAM DR
121	27310-173		WS	
121	27310-173		WS	
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121	27310-173		WS	
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121	27310-173		WS	
121	27310-173		WS	
122	27310-179	40/ 3	WS	166 ST MARGARET DR
122	27310-179		WS	
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122	27310-179		WS	
123	27310-177	35/4	WS	175 ST WILLIAM DR
123	27310-177		WS	
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123	27310-177		WS	
124	27310-181	35/ 4	WS	181 ST WILLIAM DR
124	27310-181		WS	
124	27310-181		WS	
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125P	27310-185	50/ 2	WS	37.10 185 ST WILLIAM DR
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
125P	27310-185		WS	
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125P	27310-185		WS	
125P	27310-185		WS	

END



Latitude	Longitude	Existing Comm Owner Lowest to Highest	Neutral	Existing Attachment Height	Proposed Attachment Height	Critical Mid Span Clearance to Ground	Mid Span Clearance Comm to Power	3rd Party Comm Clearance Issue At Pole Y/N
38.02332	-84.46745	KU	Primary	42'0"				N
38.02332	-84.46745	KU	Neutral	32'4"				N
38.02332	-84.46745	KU	Secondary	31'2"				N
38.02332	-84.46745	KU	Secondary	30'3"				N
38.02332	-84.46745	KU	Streetlight	28'3"				N
38.02332	-84.46745	Metronet	Communication		20'9"			N
38.02332	-84.46745	Charter	Communication	19'9"			140	N
38.02332	-84.46745	Windstream	Communication	18'8"		15'7"		N
38.02369	-84.46690	KU	Primary	32'10"				N
38.02369	-84.46690	KU	Neutral	30'3"				N
38.02369	-84.46690	KU	Secondary	29'5"				N
38.02369	-84.46690	KU	Secondary	28'9"				N
38.02369	-84.46690	Metronet	Communication		20'0"			N
38.02369	-84.46690	Charter	Communication	19'0"			157	N
38.02369	-84.46690	Windstream	Communication	17'10"		17'1"		N
38.02408	-84.46637	KU	Primary	33'2"				N
38.02408	-84.46637	KU	Transformer	26'3"				N
38.02408	-84.46637	KU	Neutral	26'0"				N
38.02408	-84.46637	KU	Secondary	25'3"				N
38.02408	-84.46637	KU	Secondary	24'8"				N
38.02408	-84.46637	KU	Secondary Riser	23'6"				N
38.02408	-84.46637	Metronet	Communication		19'10"			N
38.02408	-84.46637	Charter	Communication	18'10"			64	N
38.02408	-84.46637	Windstream	Communication	17'8"		14'9"		N
38.02444	-84.46589	KU	Primary	32'0"				N
38.02444	-84.46589	KU	Neutral	30'0"				N
38.02444	-84.46589	KU	Secondary	29'4"				N
38.02444	-84.46589	KU	Secondary	28'9"				N
38.02444	-84.46589	KU	OH Guy	27'4"				N
38.02444	-84.46589	Metronet	Communication		20'2"			N
38.02444	-84.46589	Charter	Communication	19'2"			110	N
38.02444	-84.46589	Windstream	Communication	18'1"		14'6"		N
38.02477	-84.46540	KU	Primary	32'1"				N
38.02477	-84.46540	KU	Secondary Riser	30'7"				N
38.02477	-84.46540	KU	Neutral	29'10"				N

38.02477	-84.46540	KU	Neutral	29'5"		N
38.02477	-84.46540	KU	Secondary	28'9"		N
38.02477	-84.46540	KU	Secondary	28'0"		N
38.02477	-84.46540	KU	OH Guy	27'1"		N
38.02477	-84.46540	Metronet	Communication		19'7"	N
38.02477	-84.46540	Charter	Communication	18'7"		95 N
38.02477	-84.46540	Windstream	Communication	17'4"	16'4"	N
38.02519	-84.46487	KU	Primary	33'0"		N
38.02519	-84.46487	KU	Neutral	30'4"		N
38.02519	-84.46487	KU	Secondary	29'8"		N
38.02519	-84.46487	KU	Secondary	28'10"		N
38.02519	-84.46487	KU	Streetlight	25'11"		N
38.02519	-84.46487	Metronet	Communication		20'1"	N
38.02519	-84.46487	Charter	Communication	19'1"		87 N
38.02519	-84.46487	Windstream	Communication	17'10"	12'11"	N
38.02553	-84.46436	KU	Primary	32'8'		Y
38.02553	-84.46436	KU	Neutral	30'6"		Y
38.02553	-84.46436	KU	Secondary	29'7"		Y
38.02553	-84.46436	KU	Secondary	28'10"		Y
38.02553	-84.46436	KU	Secondary Riser	24'9"		Y
38.02553	-84.46436	KU	Transformer	24'5"		Y
38.02553	-84.46436	KU	Secondary Riser	21'2"	23'4"	Y
38.02553	-84.46436	Metronet	Communication		20'0"	Y
38.02553	-84.46436	Charter	Communication	19'0"		88 Y
38.02553	-84.46436	Windstream	Communication	17'11"	16'10"	Y
38.02591	-84.46383	KU	Primary	35'4"		N
38.02591	-84.46383	KU	Neutral	32'5"		N
38.02591	-84.46383	KU	Secondary	31'7"		N
38.02591	-84.46383	KU	Secondary	30'11"		N
38.02591	-84.46383	KU	Secondary Riser	28'9"		N
38.02591	-84.46383	Metronet	Communication		21'8"	N
38.02591	-84.46383	Charter	Communication	20'8"		70 N
38.02591	-84.46383	Windstream	Communication	19'5"	18'5"	N
38.02609	-84.46356	KU	Neutral	24'9"		N
38.02609	-84.46356	KU	Secondary	24'5"		N
38.02609	-84.46356	KU	Secondary	23'10"		N
38.02609	-84.46356	Metronet	Communication		19'8"	N
38.02609	-84.46356	Charter	Communication	18'8"		60 N
38.02609	-84.46356	Windstream	Communication	17'7"	17'8"	N
38.02632	-84.46331	KU	Primary	34'9"		N
38.02632	-84.46331	KU	Neutral	32'3"		N
38.02632	-84.46331	KU	Secondary	31'7"		N
38.02632	-84.46331	KU	Secondary	30'9"		N
38.02632	-84.46331	KU	Transformer	24'3"		N
38.02632	-84.46331	Metronet	Communication		19'11"	N

38.02632	-84.46331	Charter	Communication	20'4"	18'11"		57	N
38.02632	-84.46331	Windstream	Communication	18'8"	17'11"	16'0"		N
38.02665	-84.46278	KU	Primary	29'0"				Y
38.02665	-84.46278	KU	Neutral	26'7"				Y
38.02665	-84.46278	KU	Secondary	25'5"				Y
38.02665	-84.46278	KU	Secondary	24'6"				Y
38.02665	-84.46278	KU	Secondary Riser	23'3"				Y
38.02665	-84.46278	KU	Secondary Riser	21'9"				Y
38.02665	-84.46278	Metronet	Communication		18'5"			Y
38.02665	-84.46278	Charter	Communication	19'2"	17'5"		73	Y
38.02665	-84.46278	Windstream	Communication	17'11"	16'5"	16'4"		Y
38.02702	-84.46228	KU	Primary	33'2"				Y
38.02702	-84.46228	KU	Neutral	29'6"				Y
38.02702	-84.46228	KU	Secondary	28'10"				Y
38.02702	-84.46228	KU	Secondary	28'1"				Y
38.02702	-84.46228	KU	Transformer	23'2"				Y
38.02702	-84.46228	KU	Secondary Drip Loop	21'5"				Y
38.02702	-84.46228	Metronet	Communication		18'1"			Y
38.02702	-84.46228	Charter	Communication	19'9"	17'1"		53	Y
38.02702	-84.46228	Windstream	Communication	18'7"	16'1"	19'7"		Y
38.02740	-84.46174	KU	Primary	33'10"				N
38.02740	-84.46174	KU	Neutral	30'4"				N
38.02740	-84.46174	KU	Secondary	28'10"				N
38.02740	-84.46174	KU	Secondary	27'6"				N
38.02740	-84.46174	KU	Secondary Riser	26'10"				N
38.02740	-84.46174	Metronet	Communication		23'1"			N
38.02740	-84.46174	Charter	Communication	22'1"			34	N
38.02740	-84.46174	Windstream	Communication	20'9"		19'7"		N
38.02778	-84.46125	KU	Primary	33'4"				N
38.02778	-84.46125	KU	Transformer	27'7"				N
38.02778	-84.46125	KU	Neutral	26'2"				N
38.02778	-84.46125	KU	Secondary	25'5"				N
38.02778	-84.46125	KU	Secondary	24'10"				N
38.02778	-84.46125	KU	Secondary Riser	24'2"				N
38.02778	-84.46125	Metronet	Communication		20'10"			N
38.02778	-84.46125	Charter	Communication	20'7"	19'10"		36	N
38.02778	-84.46125	Windstream	Communication	19'6"	18'10"	19'3"		N
38.02171	-84.46651	KU	Primary	28'8"		29'10"		N
38.02171	-84.46651	KU	Secondary	21'2"				N
38.02171	-84.46651	Metronet	Communication		17'10"			N
38.02139	-84.46603	KU	Primary	34'8"				N
38.02139	-84.46603	KU	Transformer	27'0"				N
38.02139	-84.46603	KU	Neutral	25'11"				N
38.02139	-84.46603	KU	Secondary	25'2"				N

38.02139	-84.46603	KU	Secondary	24'6"			N
38.02139	-84.46603	KU	Streetlight	23'5"			N
38.02139	-84.46603	Metronet	Communication		21'2"		N
38.02139	-84.46603	Charter	Communication	20'6'	19'3"		23 N
38.02139	-84.46603	Windstream	Communication	19'3"	18'3"	16'5"	N
38.02117	-84.46575	KU	Primary	32'9"			Y
38.02117	-84.46575	KU	Primary	30'5"			Y
38.02117	-84.46575	KU	Transformer	25'6"			Y
38.02117	-84.46575	KU	Neutral	23'11"	24'10"		Y
38.02117	-84.46575	KU	Secondary	23'1"	24'2"		Y
38.02117	-84.46575	KU	Secondary	22'4"	23'6"		Y
38.02117	-84.46575	KU	Streetlight	21'4"			Y
38.02117	-84.46575	KU	Streetlight Drip Loop	20'11"	21'4"		Y
38.02117	-84.46575	Metronet	Communication		20'2"		Y
38.02117	-84.46575	Metronet	Communication		19'10"		Y
38.02117	-84.46575	Charter	Communication	19'2"			Y
38.02117	-84.46575	Charter	Communication	18'11"			44 Y
38.02117	-84.46575	Windstream	Communication	18'5"			Y
38.02117	-84.46575	Windstream	Communication	18'2"			Y
38.02117	-84.46575	Windstream	Communication	17'9"			Y
38.02117	-84.46575	Windstream	Communication	17'5"			Y
38.02117	-84.46575	Windstream	Communication	16'10"			Y
38.02117	-84.46575	Windstream	Communication	16'4"		15'5"	Y
38.02091	-84.46549	KU	Primary	39'8"			N
38.02091	-84.46549	KU	Transformer	31'5"			N
38.02091	-84.46549	KU	Neutral	30'3"			N
38.02091	-84.46549	KU	Secondary	29'1"			N
38.02091	-84.46549	KU	Secondary	28'4"			N
38.02091	-84.46549	KU	Streetlight	26'3"			N
38.02091	-84.46549	KU	Streetlight Drip Loop	25'7"			N
38.02091	-84.46549	Metronet	Communication		21'6"		N
38.02091	-84.46549	Charter	Communication	20'6"			113 N
38.02091	-84.46549	Windstream	Communication	19'4"			N
38.02091	-84.46549	Windstream	Communication	18'3"			N
38.02091	-84.46549	Windstream	Communication	17'3"		16'6"	N
38.02064	-84.46514	KU	Primary	38'6"			N
38.02064	-84.46514	KU	Neutral	30'10"			N
38.02064	-84.46514	KU	Secondary	29'11"			N
38.02064	-84.46514	KU	Secondary	28'11"			N
38.02064	-84.46514	KU	Streetlight	27'6"			N
38.02064	-84.46514	Metronet	Communication		22'7"		N
38.02064	-84.46514	Charter	Communication	21'3"			72 N
38.02064	-84.46514	Windstream	Communication	20'2"			N
38.02064	-84.46514	Windstream	Communication	19'0"			N
38.02064	-84.46514	Windstream	Communication	18'0"		15'2"	N
38.02041	-84.46491	KU	Primary	38'0"			N

38.02041	-84.46491	KU	Primary	33'6"		N
38.02041	-84.46491	KU	Transformer	27'4"		N
38.02041	-84.46491	KU	Neutral	26'9"		N
38.02041	-84.46491	KU	Secondary	25'6"		N
38.02041	-84.46491	KU	Secondary	24'3"		N
38.02041	-84.46491	Metronet	Communication		20'2"	N
38.02041	-84.46491	Metronet	Communication		19'10"	N
38.02041	-84.46491	Charter	Communication	18'10"		22 N
38.02041	-84.46491	Charter	Communication	17'10"		N
38.02041	-84.46491	Windstream	Communication	16'10"		N
38.02041	-84.46491	Windstream	Communication	16'2"		N
38.02041	-84.46491	Windstream	Communication	15'9"		N
38.02041	-84.46491	Windstream	Communication	15'1"		N
38.02041	-84.46491	Windstream	Communication	14'7"		N
38.02041	-84.46491	Windstream	Communication	14'1"	16'2"	N
38.02041	-84.46491	Windstream	Communication	13'7"		N
38.02012	-84.46461	KU	Primary	33'7'		N
38.02012	-84.46461	KU	Neutral	26'2"		N
38.02012	-84.46461	KU	Secondary Riser	25'6"		N
38.02012	-84.46461	KU	Secondary	25'1'		N
38.02012	-84.46461	KU	Secondary	24'3"		N
38.02012	-84.46461	Metronet	Communication		20'11"	N
38.02012	-84.46461	Charter	Communication	19'11"		71 N
38.02012	-84.46461	Windstream	Communication	19'0"		N
38.02012	-84.46461	Windstream	Communication	18'0"	19'7"	N
38.01986	-84.46426	KU	Primary	33'7"		N
38.01986	-84.46426	KU	Neutral	26'1"		N
38.01986	-84.46426	KU	Secondary	25'1"		N
38.01986	-84.46426	KU	Secondary	24'2"		N
38.01986	-84.46426	Metronet	Communication		20'10"	N
38.01986	-84.46426	Charter	Communication	19'10"		49 N
38.01986	-84.46426	Windstream	Communication	18'10"		N
38.01986	-84.46426	Windstream	Communication	17'10"	13'6"	N
38.01964	-84.46403	KU	Primary		32'8"	N
38.01964	-84.46403	KU	Transformer		25'10"	N
38.01964	-84.46403	KU	Neutral		24'10"	N
38.01964	-84.46403	KU	Secondary		24'2"	N
38.01964	-84.46403	KU	Secondary		23'6"	N
38.01964	-84.46403	KU	Streetlight		21'2"	N
38.01964	-84.46403	Metronet	Communication		20'2"	N
38.01964	-84.46403	Metronet	Communication		19'10"	N
38.01964	-84.46403	Charter	Communication	18'10"		71 N
38.01964	-84.46403	Windstream	Communication	17'10"		N
38.01964	-84.46403	Windstream	Communication	17'6"	15'1"	N
38.01941	-84.46376	KU	Primary		33'2"	N
38.01941	-84.46376	KU	Primary		32'10"	N

38.01941	-84.46376	KU	Neutral		27'10"		N
38.01941	-84.46376	KU	Secondary		26'10"		N
38.01941	-84.46376	KU	Secondary		25'10"		N
38.01941	-84.46376	Metronet	Communication		22'6"		N
38.01941	-84.46376	Charter	Communication		21'6"		74 N
38.01941	-84.46376	Windstream	Communication		20'6"		N
38.01941	-84.46376	Windstream	Communication		19'6"	17'6"	N
38.01912	-84.46343	KU	Primary		33'11"		N
38.01912	-84.46343	KU	Neutral		26'3"		N
38.01912	-84.46343	KU	Secondary		25'6"		N
38.01912	-84.46343	KU	Secondary		24'9"		N
38.01912	-84.46343	Metronet	Communication		21'4"		N
38.01912	-84.46343	Charter	Communication		21'4"	20'4"	35 N
38.01912	-84.46343	Windstream	Communication		19'2"		N
38.01912	-84.46343	Windstream	Communication		18'3"	16'5"	N
38.01890	-84.46321	KU	Primary		34'0"		N
38.01890	-84.46321	KU	Transformer		27'8"		N
38.01890	-84.46321	KU	Neutral		26'8"		N
38.01890	-84.46321	KU	Secondary		25'8"		N
38.01890	-84.46321	KU	Secondary		24'8"		N
38.01890	-84.46321	KU	Streetlight		23'8"		N
38.01890	-84.46321	Metronet	Communication		21'4"		N
38.01890	-84.46321	Charter	Communication		20'4"		41 N
38.01890	-84.46321	Windstream	Communication		19'4"		N
38.01890	-84.46321	Windstream	Communication		18'4"	16'0"	N
38.01867	-84.46295	KU	Primary		32'10"		Y
38.01867	-84.46295	KU	Neutral		25'9"		Y
38.01867	-84.46295	KU	Secondary		25'0"		Y
38.01867	-84.46295	KU	Secondary Riser		24'8"		Y
38.01867	-84.46295	KU	Secondary		24'4"		Y
38.01867	-84.46295	KU	Secondary Drip Loop		23'10"		Y
38.01867	-84.46295	Metronet	Communication		20'6"		Y
38.01867	-84.46295	Charter	Communication		20'9"	19'6"	42 Y
38.01867	-84.46295	Windstream	Communication		19'9"	18'6"	Y
38.01867	-84.46295	Windstream	Communication		18'10"	17'6" 17'5"	Y
38.01841	-84.46261	KU	Primary		33'10"		N
38.01841	-84.46261	KU	Neutral		25'9"		N
38.01841	-84.46261	KU	Secondary Riser		25'2"		N
38.01841	-84.46261	KU	Secondary		24'5"		N
38.01841	-84.46261	KU	Secondary		23'9"		N
38.01841	-84.46261	Metronet	Communication		20'3"		N
38.01841	-84.46261	Charter	Communication		20'3"	19'3"	UNK N
38.01841	-84.46261	Windstream	Communication		19'2"	18'3"	N
38.01841	-84.46261	Windstream	Communication		18'1"	17'3" UNK	N
38.01734	-84.46321	KU	Primary		35'5"		Y

38.01734	-84.46321	KU	Neutral	27'11"				Y
38.01734	-84.46321	KU	Primary Riser	27'4"				Y
38.01734	-84.46321	Metronet	Communication		23'2"			Y
38.01734	-84.46321	Charter	Communication	24'7"	22'1"			57 Y
38.01734	-84.46321	Windstream	Communication	23'2"	21'1"			Y
38.01734	-84.46321	Windstream	Communication	22'1"	20'1"	21'3"		Y
38.01751	-84.46297	KU	Primary	35'3"				Y
38.01751	-84.46297	KU	Neutral	28'6"				Y
38.01751	-84.46297	Metronet	Communication		25'2"			Y
38.01751	-84.46297	Charter	Communication	25'5"	24'2"			55 Y
38.01751	-84.46297	Windstream	Communication	24'8"	23'2"			Y
38.01751	-84.46297	Windstream	Communication	23'6"	22'2"	20'7"		Y
38.01783	-84.46251	KU	Primary	38'7"				N
38.01783	-84.46251	KU	Primary Riser	31'11"				N
38.01783	-84.46251	KU	Neutral	30'11"				N
38.01783	-84.46251	Metronet	Communication		27'7"			N
38.01783	-84.46251	Charter	Communication	27'7"	26'7"	22'4"	N/A	N
38.01783	-84.46251	Windstream	Communication	26'2"	25'7"			N
38.01783	-84.46251	Windstream	Communication	25'3"	24'7"			N
38.01805	-84.46255	KU	Primary	33'0"				N
38.01805	-84.46255	KU	Transformer	27'2"				N
38.01805	-84.46255	KU	Neutral	25'7"				N
38.01805	-84.46255	KU	Secondary Riser	24'7"				N
38.01805	-84.46255	KU	Down Guy	24'3"				N
38.01805	-84.46255	Metronet	Communication		21'3"			N
38.01805	-84.46255	Metronet	Communication		20'11"			N
38.01805	-84.46255	Charter	Communication	20'11"	20'3"			N
38.01805	-84.46255	Charter	Communication	19'9"				85 N
38.01805	-84.46255	Windstream	Communication	18'7"				N
38.01805	-84.46255	Windstream	Communication	17'8"		15'1"		N
38.01820	-84.46238	KU	Primary		37'8"			N
38.01820	-84.46238	KU	Primary		34'8"			N
38.01820	-84.46238	KU	Neutral		28'8"			N
38.01820	-84.46238	KU	Secondary		27'8"			N
38.01820	-84.46238	KU	Secondary		26'8"			N
38.01820	-84.46238	KU	Transformer		29'8"			N
38.01820	-84.46238	Metronet	Communication		23'4"			N
38.01820	-84.46238	Charter	Communication		22'4"			40 N
38.01820	-84.46238	Windstream	Communication		21'4"			N
38.01820	-84.46238	Windstream	Communication		21'0"			N
38.01820	-84.46238	Windstream	Communication		20'4"			N
38.01820	-84.46238	Windstream	Communication		20'0"	12'10"		N
38.01842	-84.46205	KU	Primary	29'0"				Y
38.01842	-84.46205	KU	Neutral	22'11"				Y
38.01842	-84.46205	KU	Secondary	22'1"				Y

38.01842	-84.46205	KU	Secondary	21'4"			Y
38.01842	-84.46205	KU	Secondary Riser	20'9"			Y
38.01842	-84.46205	Metronet	Communication		17'6"		Y
38.01842	-84.46205	Charter	Communication	18'3"	16'6"		40 Y
38.01842	-84.46205	Windstream	Communication	17'6"	15'5"		Y
38.01842	-84.46205	Windstream	Communication	16'9"	14'5"		Y
38.01842	-84.46205	Windstream	Communication	15'5"	13'5"	12'2"	Y
38.01867	-84.46175	KU	Primary	33'5"			Y
38.01867	-84.46175	KU	Transformer	26'7"			Y
38.01867	-84.46175	KU	Neutral	26'2"			Y
38.01867	-84.46175	KU	Secondary	25'5"			Y
38.01867	-84.46175	KU	Secondary	24'9"			Y
38.01867	-84.46175	KU	Secondary Riser	20'7"	24'0"		Y
38.01867	-84.46175	Metronet	Communication		19'8"		Y
38.01867	-84.46175	Charter	Communication	18'8"			76 Y
38.01867	-84.46175	Windstream	Communication	17'11"			Y
38.01867	-84.46175	Windstream	Communication	17'4"			Y
38.01867	-84.46175	Windstream	Communication	16'2"			Y
38.01867	-84.46175	Windstream	Communication	14'9"		12'7"	Y
38.01885	-84.46142	KU	Primary	36'1"			N
38.01885	-84.46142	KU	Primary	35'8"			N
38.01885	-84.46142	KU	Neutral	28'10"			N
38.01885	-84.46142	KU	Secondary	28'1"			N
38.01885	-84.46142	KU	Secondary	27'5"			N
38.01885	-84.46142	Metronet	Communication		21'5"		N
38.01885	-84.46142	Charter	Communication	20'5"			69 N
38.01885	-84.46142	Windstream	Communication	19'2"			N
38.01885	-84.46142	Windstream	Communication	18'1"			N
38.01885	-84.46142	Windstream	Communication	16'0"		12'6"	N
38.01905	-84.46110	KU	Primary	36'5"			N
38.01905	-84.46110	KU	Primary	36'0"			N
38.01905	-84.46110	KU	Transformer	29'6"			N
38.01905	-84.46110	KU	Neutral	28'6"			N
38.01905	-84.46110	KU	Secondary	27'9"			N
38.01905	-84.46110	KU	Secondary	27'0"			N
38.01905	-84.46110	KU	Secondary Riser	25'3"	26'6"		N
38.01905	-84.46110	Metronet	Communication		22'5"		N
38.01905	-84.46110	Charter	Communication	21'5"			58 N
38.01905	-84.46110	Windstream	Communication	20'8"			N
38.01905	-84.46110	Windstream	Communication	19'9"			N
38.01905	-84.46110	Windstream	Communication	18'3"		13'2"	N
38.01931	-84.46081	KU	Primary	36'5"			N
38.01931	-84.46081	KU	Primary	35'10"			N
38.01931	-84.46081	KU	Primary	31'10"			N
38.01931	-84.46081	KU	Neutral	28'1"			N
38.01931	-84.46081	KU	Neutral	27'7"			N

38.01931	-84.46081	KU	Secondary	26'9"				N
38.01931	-84.46081	KU	Secondary	26'0"				N
38.01931	-84.46081	KU	Down Guy	24'11"				N
38.01931	-84.46081	Metronet	Communication		19'0"			N
38.01931	-84.46081	Metronet	Communication		18'8"			N
38.01931	-84.46081	Charter	Down Guy	17'8"		16'10"		82 N
38.01931	-84.46081	Charter	Communication	17'2"				N
38.01931	-84.46081	Charter	Communication	17'0"				N
38.01931	-84.46081	Windstream	Communication	16'5"				N
38.01931	-84.46081	Windstream	Communication	15'6"				N
38.01931	-84.46081	Windstream	Communication	13'7"				N
38.01926	-84.46075	KU	Primary	30'0"				N
38.01926	-84.46075	KU	Recloser Bank	24'8"				N
38.01926	-84.46075	KU	Neutral	24'0"				N
38.01926	-84.46075	Metronet	Communication		20'8"			N
38.01926	-84.46075	Charter	Communication	19'8"	19'6"	UNK	UNK	N
38.01913	-84.46070	KU	Primary	37'3"				N
38.01913	-84.46070	KU	Primary	37'0"				N
38.01913	-84.46070	KU	Primary	33'10"				N
38.01913	-84.46070	KU	Neutral	29'9"				N
38.01913	-84.46070	KU	Down Guy	28'9"				N
38.01913	-84.46070	Metronet	Communication		24'0"			N
38.01913	-84.46070	Charter	Communication	23'0"				N
38.01913	-84.46070	Windstream	Communication	22'0"				49 N
38.01913	-84.46070	Windstream	Communication	21'5"				N
38.01913	-84.46070	Windstream	Communication	21'0"				N
38.01913	-84.46070	Windstream	Communication	20'5"				N
38.01913	-84.46070	Windstream	Communication	19'3"				N
38.01913	-84.46070	Windstream	Communication	18'10"		18'6"		N
38.01913	-84.46070	Windstream	Communication	18'6"				N
38.01883	-84.46017	KU	Primary	37'1"				Y
38.01883	-84.46017	KU	Transformer	29'1"				Y
38.01883	-84.46017	KU	Neutral	28'9"				Y
38.01883	-84.46017	KU	Secondary	28'4"				Y
38.01883	-84.46017	KU	Primary Riser	26'6"				Y
38.01883	-84.46017	Metronet	Communication		22'6"			Y
38.01883	-84.46017	Charter	Communication	24'3"	21'6"			28 Y
38.01883	-84.46017	Windstream	Communication	23'2"	20'6"			Y
38.01883	-84.46017	Windstream	Communication	22'1"	19'6"			Y
38.01883	-84.46017	Windstream	Communication	21'0"	18'6"	16'7"		Y
38.01862	-84.45975	KU	Primary	36'4"				N
38.01862	-84.45975	KU	Neutral	30'1"				N
38.01862	-84.45975	Metronet	Communication		24'7"			N
38.01862	-84.45975	Charter	Communication	23'7"				56 N
38.01862	-84.45975	Windstream	Communication	22'6"				N
38.01862	-84.45975	Windstream	Communication	21'5"				N

38.01862	-84.45975	Windstream	Communication	20'2"	17'5"	N
38.01841	-84.45937	KU	Primary	37'0"		N
38.01841	-84.45937	KU	Neutral	30'0"		N
38.01841	-84.45937	Metronet	Communication		24'7"	N
38.01841	-84.45937	Charter	Communication	23'7"		52 N
38.01841	-84.45937	Windstream	Communication	22'4"		N
38.01841	-84.45937	Windstream	Communication	21'1"		N
38.01841	-84.45937	Windstream	Communication	20'0"	15'11"	N
38.01827	-84.45874	KU	Primary	42'3"		N
38.01827	-84.45874	KU	Primary	38'9"		N
38.01827	-84.45874	KU	Neutral	32'8"		N
38.01827	-84.45874	KU	Neutral	32'3"		N
38.01827	-84.45874	Metronet	Communication		26'6"	N
38.01827	-84.45874	Charter	Communication	25'6"		59 N
38.01827	-84.45874	Windstream	Communication	24'3"		N
38.01827	-84.45874	Windstream	Communication	23'3"		N
38.01827	-84.45874	Windstream	Communication	21'11"	19'11"	N
38.01937	-84.46031	KU	Primary	36'10"		N
38.01937	-84.46031	KU	Neutral	25'11"		N
38.01937	-84.46031	Metronet	Communication		21'8"	N
38.01937	-84.46031	Charter	Communication	20'8"	21'4"	71 N
38.01947	-84.46018	KU	Primary	34'7"		N
38.01947	-84.46018	KU	Primary	33'11"		N
38.01947	-84.46018	KU	Primary	30'8"		N
38.01947	-84.46018	KU	Neutral	26'10"		N
38.01947	-84.46018	KU	Secondary	26'4"		N
38.01947	-84.46018	Metronet	Communication		21'9"	N
38.01947	-84.46018	Charter	Communication	20'9"	14'10"	106 N
38.01996	-84.45953	KU	Primary	36'10"		N
38.01996	-84.45953	KU	Neutral	29'11"		N
38.01996	-84.45953	KU	Transformer	29'3"		N
38.01996	-84.45953	KU	Secondary	28'7"		N
38.01996	-84.45953	KU	Secondary Riser	26'8"		N
38.01996	-84.45953	Metronet	Communication		22'10"	N
38.01996	-84.45953	Charter	Communication	21'10"		89 N
38.01996	-84.45953	Windstream	Communication	20'11"	14'6"	N
38.02049	-84.45879	KU	Primary	38'0"		N
38.02049	-84.45879	KU	Neutral	30'6"		N
38.02049	-84.45879	KU	Secondary	29'3"		N
38.02049	-84.45879	KU	Streetlight	26'10"		N
38.02049	-84.45879	Metronet	Communication		23'4"	N
38.02049	-84.45879	Charter	Communication	22'4"		104 N
38.02049	-84.45879	Windstream	Communication	21'7"	15'6"	N

38.02093	-84.45819	KU	Primary	37'9"			N
38.02093	-84.45819	KU	Transformer	30'10"			N
38.02093	-84.45819	KU	Neutral	30'7"			N
38.02093	-84.45819	Metronet	Communication		24'5"		N
38.02093	-84.45819	Charter	Communication	23'5"	23'2"	28	N
38.02093	-84.45819	Windstream	Communication	22'5"			N
38.02127	-84.45765	KU	Primary	37'2"			N
38.02127	-84.45765	KU	Neutral	30'3"			N
38.02127	-84.45765	Metronet	Communication		24'0"		N
38.02127	-84.45765	Windstream	Communication	23'0"	23'3"	57	N
38.02127	-84.45765	Charter	Communication	22'2"			N
38.02171	-84.45703	KU	Primary	43'1"			N
38.02171	-84.45703	KU	Transformer	36'6"			N
38.02171	-84.45703	KU	Neutral	36'0"			N
38.02171	-84.45703	KU	Secondary Riser	33'4"			N
38.02171	-84.45703	Metronet	Communication		28'0"		N
38.02171	-84.45703	Windstream	Communication	27'0"	29'8"	84	N
38.02215	-84.45655	KU	Primary	36'3"			N
38.02215	-84.45655	KU	Capacitor Bank	30'6"			N
38.02215	-84.45655	KU	Neutral	29'4"			N
38.02215	-84.45655	KU	Secondary	28'4"			N
38.02215	-84.45655	Metronet	Communication		25'1"		N
38.02215	-84.45655	Windstream	Communication	24'1"	21'8"	54	N
38.02212	-84.45645	KU	Primary	33'3"			N
38.02212	-84.45645	KU	Primary Riser	27'2"			N
38.02212	-84.45645	KU	Neutral	25'5"			N
38.02212	-84.45645	KU	Streetlight	23'7"			N
38.02212	-84.45645	Metronet	Communication		22'1"		N
38.02212	-84.45645	Windstream	Communication	21'1"	19'6"	55	N
38.02252	-84.45588	KU	Primary	37'10"			N
38.02252	-84.45588	KU	Transformer	28'1"			N
38.02252	-84.45588	KU	Neutral	27'6"			N
38.02252	-84.45588	KU	Secondary	26'3"			N
38.02252	-84.45588	KU	Secondary	25'3"			N
38.02252	-84.45588	KU	Streetlight	22'11"			N
38.02252	-84.45588	KU	Streetlight Drip Loop	22'5"	22'11"		N
38.02252	-84.45588	Metronet	Communication		21'11"		N
38.02252	-84.45588	Charter	Communication	20'0"			N
38.02252	-84.45588	Windstream	Communication	20'2"		40	N
38.02252	-84.45588	Windstream	Communication	19'5"	18'8"		N
38.02293	-84.45536	KU	Primary	37'5"			N
38.02293	-84.45536	KU	Neutral	29'7"			N
38.02293	-84.45536	KU	Secondary	29'0"			N
38.02293	-84.45536	KU	Secondary	27'9"			N

38.02293	-84.45536	KU	Streetlight	27'2"			N
38.02293	-84.45536	Metronet	Communication		24'5"		N
38.02293	-84.45536	Charter	Communication	24'0"	23'5"		33 N
38.02293	-84.45536	Windstream	Communication	22'11"	22'5"	22'2"	N
38.02328	-84.45484	KU	Primary	42'5"			N
38.02328	-84.45484	KU	Primary	39'1"			N
38.02328	-84.45484	KU	Neutral	30'9"			N
38.02328	-84.45484	KU	Secondary	29'11"			N
38.02328	-84.45484	KU	Secondary Riser	29'8"			N
38.02328	-84.45484	Metronet	Communication		26'4"		N
38.02328	-84.45484	Charter	Communication	25'4"			60 N
38.02328	-84.45484	Charter	Communication	24'2"			N
38.02328	-84.45484	Charter	Communication	23'0"			N
38.02328	-84.45484	Windstream	Communication	19'3"		18'3"	N
38.02107	-84.45838	KU	Primary	39'0"			N
38.02107	-84.45838	KU	Primary	34'4"			N
38.02107	-84.45838	KU	Neutral	29'2"			N
38.02107	-84.45838	KU	Neutral	28'11"			N
38.02107	-84.45838	KU	Secondary	28'7"			N
38.02107	-84.45838	KU	Secondary	28'2"			N
38.02107	-84.45838	KU	Secondary	27'11"			N
38.02107	-84.45838	KU	Secondary	27'1"			N
38.02107	-84.45838	Metronet	Communication		22'7"		N
38.02107	-84.45838	Charter	Communication	21'7"			61 N
38.02107	-84.45838	Charter	Communication	20'7"			N
38.02107	-84.45838	Windstream	Communication	19'5"			N
38.02107	-84.45838	Windstream	Communication	18'10"			N
38.02107	-84.45838	Windstream	Communication	18'5"			N
38.02107	-84.45838	Windstream	Communication	18'0"			N
38.02107	-84.45838	Windstream	Communication	17'3"			N
38.02107	-84.45838	Windstream	Communication	16'4"			N
38.02107	-84.45838	Windstream	Communication	15'7"		10'8"	N
38.02138	-84.45792	KU	Primary	31'10"			Y
38.02138	-84.45792	KU	Neutral	29'0"			Y
38.02138	-84.45792	KU	Secondary	28'0"			Y
38.02138	-84.45792	KU	Secondary	27'5"			Y
38.02138	-84.45792	KU	Transformer	22'5"			Y
38.02138	-84.45792	Metronet	Communication		19'1"		Y
38.02138	-84.45792	Charter	Communication	19'6"	18'2"		UNK Y
38.02138	-84.45792	Windstream	Communication	18'2"	17'2"		Y
38.02138	-84.45792	Windstream	Communication	16'9"	16'2"		Y
38.02138	-84.45792	Windstream	Communication	15'8"	15'2"		Y
38.02138	-84.45792	Windstream	Communication	14'6"	14'2"	UNK	Y
38.02162	-84.45758	KU	Primary	37'4"			N
38.02162	-84.45758	KU	Neutral	33'0"			N
38.02162	-84.45758	KU	Secondary	32'3"			N

38.02162	-84.45758	KU	Secondary	31'7"		N
38.02162	-84.45758	Metronet	Communication		24'4"	N
38.02162	-84.45758	Charter	Communication	23'4"		84 N
38.02162	-84.45758	Windstream	Communication	22'5"		N
38.02162	-84.45758	Windstream	Communication	21'6"		N
38.02162	-84.45758	Windstream	Communication	20'5"		N
38.02162	-84.45758	Windstream	Communication	19'5"	17'0"	N
38.02187	-84.45727	KU	Primary	32'3"		N
38.02187	-84.45727	KU	Neutral	28'10"		N
38.02187	-84.45727	KU	Secondary	28'1"		N
38.02187	-84.45727	KU	Secondary	27'6"		N
38.02187	-84.45727	Metronet	Communication		21'10"	N
38.02187	-84.45727	Charter	Communication	20'10"		56 N
38.02187	-84.45727	Windstream	Communication	18'9"		N
38.02187	-84.45727	Windstream	Communication	17'7"		N
38.02187	-84.45727	Windstream	Communication	16'6"		N
38.02187	-84.45727	Windstream	Communication	15'5"	14'11"	N
38.02208	-84.45694	KU	Primary	34'2"		N
38.02208	-84.45694	KU	Neutral	27'0"		N
38.02208	-84.45694	KU	Secondary	26'4"		N
38.02208	-84.45694	KU	Secondary	25'8"		N
38.02208	-84.45694	Metronet	Communication		22'4"	N
38.02208	-84.45694	Charter	Communication	21'5"		16'11" N
38.02208	-84.45694	Windstream	Communication	20'5"		N
38.02208	-84.45694	Windstream	Communication	19'3"		N
38.02208	-84.45694	Windstream	Communication	18'5"		N
38.02208	-84.45694	Windstream	Communication	17'5"	12'11"	N
38.02236	-84.45662	KU	Primary	33'11"		N
38.02236	-84.45662	KU	Transformer	27'3"		N
38.02236	-84.45662	KU	Neutral	26'6"		N
38.02236	-84.45662	KU	Secondary	25'11"		N
38.02236	-84.45662	KU	Secondary	25'3"		N
38.02236	-84.45662	Metronet	Communication		19'9"	N
38.02236	-84.45662	Charter	Communication	18'9"		55 N
38.02236	-84.45662	Windstream	Communication	17'5"		N
38.02236	-84.45662	Windstream	Communication	16'3"		N
38.02236	-84.45662	Windstream	Communication	15'3"		N
38.02236	-84.45662	Windstream	Communication	14'0"	14'8"	N
38.02265	-84.45641	KU	Primary	33'6"		Y
38.02265	-84.45641	KU	Neutral	26'3"		Y
38.02265	-84.45641	KU	Secondary	25'6"		Y
38.02265	-84.45641	KU	Secondary	24'9"		Y
38.02265	-84.45641	Metronet	Communication		21'5"	Y
38.02265	-84.45641	Charter	Communication	21'9"	20'5"	39 Y
38.02265	-84.45641	Windstream	Communication	20'9"	19'5"	Y
38.02265	-84.45641	Windstream	Communication	19'8"	18'5"	Y

38.02265	-84.45641	Windstream	Communication	18'8"	17'4"		Y
38.02265	-84.45641	Windstream	Communication	17'7"	16'4"	15'10"	Y
38.02294	-84.45623	KU	Primary		33'10"		N
38.02294	-84.45623	KU	Neutral		28'4"		N
38.02294	-84.45623	KU	Secondary		27'4"		N
38.02294	-84.45623	KU	Secondary		26'4"		N
38.02294	-84.45623	Metronet	Communication		23'0"		N
38.02294	-84.45623	Charter	Communication		22'0"		67 N
38.02294	-84.45623	Windstream	Communication		21'0"		N
38.02294	-84.45623	Windstream	Communication		20'0"		N
38.02294	-84.45623	Windstream	Communication		19'0"		N
38.02294	-84.45623	Windstream	Communication		18'0"	14'9"	N
38.02325	-84.45602	KU	Primary	34'1"			N
38.02325	-84.45602	KU	Neutral	28'2"			N
38.02325	-84.45602	KU	Secondary	27'4"			N
38.02325	-84.45602	KU	Secondary	26'5"			N
38.02325	-84.45602	Metronet	Communication		22'0"		N
38.02325	-84.45602	Charter	Communication	21'0"			60 N
38.02325	-84.45602	Windstream	Communication	19'9"			N
38.02325	-84.45602	Windstream	Communication	18'9"			N
38.02325	-84.45602	Windstream	Communication	17'6"			N
38.02325	-84.45602	Windstream	Communication	16'7"		15'0"	N
38.02352	-84.45586	KU	Primary	33'5"			N
38.02352	-84.45586	KU	Primary	32'7"			N
38.02352	-84.45586	KU	Transformer	27'3"			N
38.02352	-84.45586	KU	Neutral	25'7"			N
38.02352	-84.45586	KU	Secondary	24'11"			N
38.02352	-84.45586	KU	Secondary	24'3"			N
38.02352	-84.45586	Metronet	Communication		20'11"		N
38.02352	-84.45586	Charter	OH Guy	20'3"			N
38.02352	-84.45586	Charter	Communication	19'11"			42 N
38.02352	-84.45586	Windstream	Communication	18'4"			N
38.02352	-84.45586	Windstream	Communication	17'4"			N
38.02352	-84.45586	Windstream	Communication	16'4"			N
38.02352	-84.45586	Windstream	Communication	15'1"		13'8"	N
38.02382	-84.45561	KU	Primary	32'5"			N
38.02382	-84.45561	KU	Neutral	25'5"			N
38.02382	-84.45561	KU	Secondary	24'9"			N
38.02382	-84.45561	KU	Secondary	24'1"			N
38.02382	-84.45561	Metronet	Communication		20'6"		N
38.02382	-84.45561	Charter	Communication	19'6"			45 N
38.02382	-84.45561	Windstream	Communication	18'7"			N
38.02382	-84.45561	Windstream	Communication	17'7"			N
38.02382	-84.45561	Windstream	Communication	16'6"			N
38.02382	-84.45561	Windstream	Communication	15'6"		14'6"	N

38.02413	-84.45541	KU	Primary	33'5"		N
38.02413	-84.45541	KU	Neutral	26'11"		N
38.02413	-84.45541	KU	Secondary	26'3"		N
38.02413	-84.45541	KU	Secondary	25'6"		N
38.02413	-84.45541	KU	Down Guy	24'7"		N
38.02413	-84.45541	Metronet	Communication		21'2"	N
38.02413	-84.45541	Charter	Communication	20'2"		94 N
38.02413	-84.45541	Windstream	Communication	18'4"		N
38.02413	-84.45541	Windstream	Communication	17'5"		N
38.02413	-84.45541	Windstream	Communication	16'6"		N
38.02413	-84.45541	Windstream	Communication	15'1"	14'1"	N
38.02419	-84.45539	KU	Primary	30'8"		N
38.02419	-84.45539	KU	Primary	28'4"		N
38.02419	-84.45539	KU	Neutral	23'8"		N
38.02419	-84.45539	KU	OH Guy	21'3"		N
38.02419	-84.45539	Metronet	Communication		17'5"	N
38.02419	-84.45539	Charter	OH Guy	16'5"		N
38.02419	-84.45539	Charter	Communication	16'3"		N
38.02419	-84.45539	Windstream	Communication	15'10"		81 N
38.02419	-84.45539	Windstream	Communication	15'8"		N
38.02419	-84.45539	Windstream	Communication	15'4"		N
38.02419	-84.45539	Windstream	Communication	15'2"		N
38.02419	-84.45539	Windstream	Communication	13'7"		N
38.02419	-84.45539	Windstream	Communication	13'1"		N
38.02419	-84.45539	Windstream	Communication	12'6"	12'9"	N
38.02419	-84.45539	Windstream	Communication	12'3"		N
38.02428	-84.45550	KU	Primary	35'6"		N
38.02428	-84.45550	KU	Primary	33'1"		N
38.02428	-84.45550	KU	Neutral	25'6"		N
38.02428	-84.45550	KU	Secondary	24'6"		N
38.02428	-84.45550	KU	Secondary	23'10"		N
38.02428	-84.45550	KU	Secondary	22'9"		N
38.02428	-84.45550	Metronet	Communication		16'11"	N
38.02428	-84.45550	Charter	Communication	15'11"		72 N
38.02428	-84.45550	Windstream	Communication	15'8"		N
38.02428	-84.45550	Windstream	Communication	14'11"		N
38.02428	-84.45550	Windstream	Communication	14'0"		N
38.02428	-84.45550	Windstream	Communication	13'1"	14'4"	N
38.02458	-84.45587	KU	Primary	38'7"		N
38.02458	-84.45587	KU	Primary	38'1"		N
38.02458	-84.45587	KU	Transformer	30'8"		N
38.02458	-84.45587	KU	Neutral	30'0"		N
38.02458	-84.45587	KU	Secondary	29'1"		N
38.02458	-84.45587	KU	Secondary	28'3"		N
38.02458	-84.45587	KU	Secondary	27'4"		N
38.02458	-84.45587	KU	Streetlight	25'9"		N
38.02458	-84.45587	KU	Streetlight	25'2"		N

38.02458	-84.45587	Metronet	Communication		23'1"		N
38.02458	-84.45587	Windstream	Communication	22'1"			N
38.02458	-84.45587	Charter	Communication	20'8"			N
38.02458	-84.45587	Charter	Communication	20'1"		67	N
38.02458	-84.45587	Windstream	Communication	19'1"			N
38.02458	-84.45587	Windstream	Communication	18'2"			N
38.02458	-84.45587	Windstream	Communication	17'4"			N
38.02458	-84.45587	Windstream	Communication	16'6"		14'5"	N
38.02478	-84.45611	KU	Primary	37'10"			Y
38.02478	-84.45611	KU	Transformer	27'7"			Y
38.02478	-84.45611	KU	Neutral	27'2"			Y
38.02478	-84.45611	KU	Secondary	26'7"			Y
38.02478	-84.45611	KU	Secondary	25'10"			Y
38.02478	-84.45611	KU	Secondary	25'3"			Y
38.02478	-84.45611	KU	Streetlight	24'6"			Y
38.02478	-84.45611	KU	Secondary Riser	24'2"			Y
38.02478	-84.45611	KU	Secondary Drip Loop	23'0"	24'2"		Y
38.02478	-84.45611	Metronet	Communication		21'0"		Y
38.02478	-84.45611	Windstream	Communication	21'10"	20'0"		Y
38.02478	-84.45611	Charter	Communication	21'0"	19'1"	49	Y
38.02478	-84.45611	Windstream	Communication	20'3"	18'2"		Y
38.02478	-84.45611	Windstream	Communication	19'1"	17'3"		Y
38.02478	-84.45611	Windstream	Communication	18'2"	16'3"		Y
38.02478	-84.45611	Windstream	Communication	17'3"	15'3"	15'8"	Y
38.02502	-84.45640	KU	Primary	35'11"			N
38.02502	-84.45640	KU	Primary	35'1"			N
38.02502	-84.45640	KU	Transformer	30'7"			N
38.02502	-84.45640	KU	Neutral	30'5"			N
38.02502	-84.45640	KU	Secondary	29'1"			N
38.02502	-84.45640	KU	Secondary	27'11"			N
38.02502	-84.45640	KU	Streetlight	27'7"			N
38.02502	-84.45640	KU	Secondary	26'10"			N
38.02502	-84.45640	KU	OH Guy	25'9"			N
38.02502	-84.45640	Metronet	Communication		21'5"		N
38.02502	-84.45640	Charter	Communication	20'5"		85	N
38.02502	-84.45640	Windstream	Communication	19'1"			N
38.02502	-84.45640	Windstream	Communication	18'1"			N
38.02502	-84.45640	Windstream	Communication	17'0"			N
38.02502	-84.45640	Windstream	Communication	16'2"		12'10"	N
38.02524	-84.45671	KU	Primary	38'4"			N
38.02524	-84.45671	KU	Primary	37'10"			N
38.02524	-84.45671	KU	Transformer	28'10"			N
38.02524	-84.45671	KU	Neutral	27'9"			N
38.02524	-84.45671	KU	Secondary	27'0"			N
38.02524	-84.45671	KU	Secondary	26'2"			N
38.02524	-84.45671	KU	Secondary	25'6"			N
38.02524	-84.45671	KU	Secondary Drip Loop	24'11"			N

38.02524	-84.45671	KU	Streetlight	23'10"			N
38.02524	-84.45671	Metronet	Communication		18'9"		N
38.02524	-84.45671	Charter	Communication	17'9"			99 N
38.02524	-84.45671	Windstream	Communication	16'8"			N
38.02524	-84.45671	Windstream	Communication	15'8"			N
38.02524	-84.45671	Windstream	Communication	14'5"		15'0"	N
38.02532	-84.45678	KU	Primary	39'11"			Y
38.02532	-84.45678	KU	Primary	39'3"			Y
38.02532	-84.45678	KU	Primary	35'10"			Y
38.02532	-84.45678	KU	Neutral	25'11"			Y
38.02532	-84.45678	KU	Secondary	24'8"			Y
38.02532	-84.45678	Metronet	Communication		21'4"		Y
38.02532	-84.45678	Charter	Communication	22'3"	20'4"		49 Y
38.02532	-84.45678	Charter	Communication	20'11"	19'4"		Y
38.02532	-84.45678	Windstream	Communication	19'11"	18'4"	18'7"	Y
38.02532	-84.45678	Windstream	Communication	18'9"	17'4"		Y
38.02532	-84.45678	Windstream	Communication	18'0"	16'4"		Y
38.02529	-84.45688	KU	Primary	34'1"			N
38.02529	-84.45688	KU	Neutral	26'9"			N
38.02529	-84.45688	KU	Secondary	25'10"			N
38.02529	-84.45688	KU	Secondary	25'0"			N
38.02529	-84.45688	Metronet	Communication		20'11"		N
38.02529	-84.45688	Charter	Communication	19'11"			70 N
38.02529	-84.45688	Windstream	Communication	19'1"		15'8"	N
38.02516	-84.45714	KU	Primary	33'0"			N
38.02516	-84.45714	KU	Transformer	25'10"			N
38.02516	-84.45714	KU	Neutral	25'4"			N
38.02516	-84.45714	KU	Secondary	24'7"			N
38.02516	-84.45714	KU	Secondary	23'11"			N
38.02516	-84.45714	Metronet	Communication		20'4"		N
38.02516	-84.45714	Charter	Communication	20'4"	19'4"		57 N
38.02516	-84.45714	Windstream	Communication	18'11"	18'4"	16'0"	N
38.02504	-84.45741	KU	Primary	32'6"			N
38.02504	-84.45741	KU	Neutral	25'10"			N
38.02504	-84.45741	KU	OH Guy	23'5"			N
38.02504	-84.45741	Metronet	Communication		21'2"		N
38.02504	-84.45741	Charter	Communication	20'2"			69 N
38.02504	-84.45741	Windstream	Communication	18'5"		18'6"	N
38.02464	-84.45718	KU	Primary	32'7"			Y
38.02464	-84.45718	KU	Neutral	25'6"			Y
38.02464	-84.45718	KU	Secondary	24'1"			Y
38.02464	-84.45718	KU	Secondary	23'6"			Y
38.02464	-84.45718	KU	Streetlight	21'5"			Y
38.02464	-84.45718	Metronet	Communication		20'2"		Y
38.02464	-84.45718	Charter	Communication	20'8"	19'2"		20 Y

38.02464	-84.45718	Windstream	Communication	19'8"	18'2"	12'0"	Y
38.02433	-84.45701	KU	Primary	33'5"			Y
38.02433	-84.45701	KU	Transformer	26'7"			Y
38.02433	-84.45701	KU	Neutral	25'6"			Y
38.02433	-84.45701	KU	Secondary	24'9"			Y
38.02433	-84.45701	KU	Secondary	24'0"			Y
38.02433	-84.45701	KU	Secondary Drip Loop	21'11"	23'7"		Y
38.02433	-84.45701	Metronet	Communication		20'3"		Y
38.02433	-84.45701	Charter	Communication	19'3"			Y
38.02433	-84.45701	Windstream	Communication	17'10"			45 Y
38.02433	-84.45701	Windstream	Communication	17'5"		17'1"	Y
38.02401	-84.45683	KU	Primary	32'10"			Y
38.02401	-84.45683	KU	Transformer	25'8"			Y
38.02401	-84.45683	KU	Neutral	24'8"			Y
38.02401	-84.45683	KU	Secondary	23'11"			Y
38.02401	-84.45683	KU	Secondary	23'3"			Y
38.02401	-84.45683	KU	Secondary Drip Loop	22'8"	23'3"		Y
38.02401	-84.45683	Metronet	Communication		19'11"		Y
38.02401	-84.45683	Charter	Communication	18'11"			42 Y
38.02401	-84.45683	Windstream	Communication	18'3"			Y
38.02401	-84.45683	Windstream	Communication	17'8"		11'0"	Y
38.02369	-84.45671	KU	Primary	31'10"			Y
38.02369	-84.45671	KU	Neutral	25'3"			Y
38.02369	-84.45671	KU	Secondary	24'8"			Y
38.02369	-84.45671	KU	Secondary	24'0"			Y
38.02369	-84.45671	KU	Secondary Drip Loop	21'7"	24'0"		Y
38.02369	-84.45671	Metronet	Communication		20'8"		Y
38.02369	-84.45671	Charter	OH Guy	19'11"	19'8"		Y
38.02369	-84.45671	Charter	Communication	18'8"			N/A Y
38.02369	-84.45671	Windstream	Communication	18'3"			Y
38.02369	-84.45671	Windstream	Communication	17'8"		N/A	Y
38.02557	-84.45709	KU	Primary	39'3"			N
38.02557	-84.45709	KU	Primary	38'8"			N
38.02557	-84.45709	KU	Capacitor Bank	32'3"			N
38.02557	-84.45709	KU	Neutral	31'7"			N
38.02557	-84.45709	KU	Secondary	30'6"			N
38.02557	-84.45709	KU	Secondary Riser	28'4"			N
38.02557	-84.45709	KU	OH Guy	28'1"			N
38.02557	-84.45709	KU	Streetlight	25'2"			N
38.02557	-84.45709	Metronet	Communication		22'5"		N
38.02557	-84.45709	Charter	Communication	21'5"			71 N
38.02557	-84.45709	Windstream	Communication	20'11"			N
38.02557	-84.45709	Windstream	Communication	20'3"		18'10"	N
38.02580	-84.45740	KU	Primary	36'7"			N
38.02580	-84.45740	KU	Transformer	27'4"			N

38.02580	-84.45740	KU	Neutral	25'11"		N
38.02580	-84.45740	KU	Secondary	25'3"		N
38.02580	-84.45740	KU	Secondary	24'7'		N
38.02580	-84.45740	KU	Secondary	23'10"		N
38.02580	-84.45740	KU	OH Guy	22'6"		N
38.02580	-84.45740	Metronet	Communication		20'6"	N
38.02580	-84.45740	Charter	Communication	19'6"		14 N
38.02580	-84.45740	Windstream	Communication	18'8"		N
38.02580	-84.45740	Windstream	Communication	17'9"	13'10"	N
38.02606	-84.45773	KU	Primary	37'10"		N
38.02606	-84.45773	KU	Transformer	28'6"		N
38.02606	-84.45773	KU	Neutral	25'9"		N
38.02606	-84.45773	KU	Secondary	25'1"		N
38.02606	-84.45773	KU	Secondary	24'4"		N
38.02606	-84.45773	KU	Secondary	23'4"	24'8"	N
38.02606	-84.45773	KU	Streetlight	22'3"		N
38.02606	-84.45773	KU	Streetlight Drip Loop	21'1"		N
38.02606	-84.45773	Metronet	Communication		20'0"	N
38.02606	-84.45773	Charter	Communication	20'1"		63 N
38.02606	-84.45773	Charter	Communication	19'1"		N
38.02606	-84.45773	Windstream	Communication	18'1"		N
38.02606	-84.45773	Windstream	Communication	16'9"		N
38.02606	-84.45773	Windstream	Communication	15'9"	14'5"	N
38.02628	-84.45799	KU	Primary	36'8"		N
38.02628	-84.45799	KU	Neutral	29'0"		N
38.02628	-84.45799	KU	Secondary	28'3"		N
38.02628	-84.45799	KU	Secondary	27'6"		N
38.02628	-84.45799	KU	Streetlight	25'9"		N
38.02628	-84.45799	Metronet	Communication		19'7"	N
38.02628	-84.45799	Charter	Communication	18'7"		91 N
38.02628	-84.45799	Windstream	Communication	17'7"		N
38.02628	-84.45799	Windstream	Communication	16'7"	13'11"	N
38.02653	-84.45829	KU	Primary	34'7"		N
38.02653	-84.45829	KU	Transformer	27'0"		N
38.02653	-84.45829	KU	Neutral	26'9"		N
38.02653	-84.45829	KU	Secondary	26'1"		N
38.02653	-84.45829	KU	Secondary	25'4"		N
38.02653	-84.45829	KU	Streetlight	23'10"		N
38.02653	-84.45829	KU	Secondary Drip Loop	23'1"		N
38.02653	-84.45829	Metronet	Communication		18'11"	N
38.02653	-84.45829	Charter	Communication	17'11"		73 N
38.02653	-84.45829	Windstream	Communication	16'0"		N
38.02653	-84.45829	Windstream	Communication	15'3"	16'0"	N
38.02665	-84.45844	KU	Primary	33'3"		N
38.02665	-84.45844	KU	Primary	30'7"		N
38.02665	-84.45844	KU	Neutral	25'5"		N

38.02665	-84.45844	KU	Secondary	24'5"		N	
38.02665	-84.45844	KU	Secondary	23'10"		N	
38.02665	-84.45844	KU	Streetlight	21'7"		N	
38.02665	-84.45844	Metronet	Communication		20'1"	N	
38.02665	-84.45844	Charter	Communication	19'1"		62 N	
38.02665	-84.45844	Windstream	Communication	18'4"		N	
38.02665	-84.45844	Windstream	Communication	17'7"	16'8"	N	
38.02677	-84.45860	KU	Primary	34'4"		Y	
38.02677	-84.45860	KU	Primary	33'9"		Y	
38.02677	-84.45860	KU	Transformer	27'7"		Y	
38.02677	-84.45860	KU	Neutral	26'5"		Y	
38.02677	-84.45860	KU	Secondary	25'7"		Y	
38.02677	-84.45860	KU	Secondary	24'9"		Y	
38.02677	-84.45860	KU	Secondary Riser	21'3"	24'3"	Y	
38.02677	-84.45860	Metronet	Communication		20'0"	Y	
38.02677	-84.45860	Charter	Communication	19'0"		Y	
38.02677	-84.45860	Charter	Communication	18'9"		70 Y	
38.02677	-84.45860	Windstream	Communication	18'1"		Y	
38.02677	-84.45860	Windstream	Communication	17'11"		Y	
38.02677	-84.45860	Windstream	Communication	17'1"		Y	
38.02677	-84.45860	Windstream	Communication	16'0"	14'11"	Y	
38.02705	-84.45896	KU	Primary	34'3"		N	
38.02705	-84.45896	KU	Neutral	30'10"		N	
38.02705	-84.45896	KU	Secondary	29'11"		N	
38.02705	-84.45896	KU	Secondary	29'3"		N	
38.02705	-84.45896	Metronet	Communication		19'3"	N	
38.02705	-84.45896	Charter	Communication	18'3"		85 N	
38.02705	-84.45896	Windstream	Communication	16'8"		N	
38.02705	-84.45896	Windstream	Communication	15'11"	14'9"	N	
38.02728	-84.45923	KU	Primary	33'5"		N	
38.02728	-84.45923	KU	Primary	32'11"		N	
38.02728	-84.45923	KU	Primary Riser	25'10"		N	
38.02728	-84.45923	KU	Primary Drip Loop	24'10"		N	
38.02728	-84.45923	KU	Neutral	24'8"		N	
38.02728	-84.45923	KU	Secondary	24'0'		N	
38.02728	-84.45923	KU	Secondary	23'3"		N	
38.02728	-84.45923	Metronet	Communication		19'11"	N	
38.02728	-84.45923	Charter	Communication		18'11"	59 N	
38.02728	-84.45923	Windstream	Communication		17'11"	N	
38.02728	-84.45923	Windstream	Communication		16'11"	15'7"	N
38.02733	-84.45929	KU	Primary	32'2"		Y	
38.02733	-84.45929	KU	Primary	28'7"		Y	
38.02733	-84.45929	KU	Neutral	24'3"		Y	
38.02733	-84.45929	KU	Secondary	23'7"		Y	
38.02733	-84.45929	KU	Secondary	22'9"		Y	
38.02733	-84.45929	KU	Down Guy	22'1"		Y	

38.02733	-84.45929	Metronet	Communication		19'4"		Y
38.02733	-84.45929	Metronet	Communication		19'0"		Y
38.02733	-84.45929	Charter	Communication	19'8"	18'5"		35 Y
38.02733	-84.45929	Charter	Communication	19'4"	18'1"		Y
38.02733	-84.45929	Windstream	Communication	18'5"	17'5"		Y
38.02733	-84.45929	Windstream	Communication	17'10"	17'1"		Y
38.02733	-84.45929	Windstream	Communication	16'9"	16'5"	15'10"	Y
38.02712	-84.45959	KU	Primary		33'2"		Y
38.02712	-84.45959	KU	Primary		32'9"		Y
38.02712	-84.45959	KU	Transformer		26'7"		Y
38.02712	-84.45959	KU	Neutral		25'5"		Y
38.02712	-84.45959	KU	Secondary		24'11'		Y
38.02712	-84.45959	KU	Secondary		24'3"		Y
38.02712	-84.45959	KU	Secondary Riser		23'8"		Y
38.02712	-84.45959	KU	Secondary Riser		23'3"		Y
38.02712	-84.45959	KU	Secondary Drip Loop		22'10"		Y
38.02712	-84.45959	Metronet	Communication		19'6"		Y
38.02712	-84.45959	Charter	Communication	20'1"	18'6"		92 Y
38.02712	-84.45959	Windstream	Communication	19'3"	17'6"		Y
38.02712	-84.45959	Windstream	Communication	17'6"	16'6"	15'3"	Y
38.02688	-84.45994	KU	Primary		32'4"		N
38.02688	-84.45994	KU	Neutral		29'9"		N
38.02688	-84.45994	KU	Secondary		29'2"		N
38.02688	-84.45994	KU	Secondary		28'5"		N
38.02688	-84.45994	Metronet	Communication		20'11"		N
38.02688	-84.45994	Charter	Communication	19'11"			99 N
38.02688	-84.45994	Windstream	Communication	18'1"			N
38.02688	-84.45994	Windstream	Communication	16'11"		16'2"	N
38.02664	-84.46023	KU	Primary		33'7"		Y
38.02664	-84.46023	KU	Transformer		28'3"		Y
38.02664	-84.46023	KU	Neutral		25'11"		Y
38.02664	-84.46023	KU	Secondary		25'0"		Y
38.02664	-84.46023	KU	Secondary		24'4"		Y
38.02664	-84.46023	KU	Secondary Riser		22'5"		Y
38.02664	-84.46023	Metronet	Communication		19'1"		Y
38.02664	-84.46023	Charter	Communication	19'8"	18'1"		31 Y
38.02664	-84.46023	Windstream	Communication	18'1"	17'0"		Y
38.02664	-84.46023	Windstream	Communication	17'0"	16'0"	13'8"	Y
38.02637	-84.46063	KU	Primary		30'8"		Y
38.02637	-84.46063	KU	Primary		29'10"		Y
38.02637	-84.46063	KU	Transformer		24'6"		Y
38.02637	-84.46063	KU	Neutral		21'10"		Y
38.02637	-84.46063	KU	Secondary		21'2"		Y
38.02637	-84.46063	KU	Secondary		20'6"		Y
38.02637	-84.46063	Metronet	Communication		17'2"		Y
38.02637	-84.46063	Charter	Communication	17'2"	16'2"		29 Y

38.02637	-84.46063	Windstream	Communication	15'5"	15'2"		Y
38.02637	-84.46063	Windstream	Communication	14'8"	14'2"	15'5"	Y
38.02609	-84.46104	KU	Primary	33'7"			N
38.02609	-84.46104	KU	Transformer	27'8"			N
38.02609	-84.46104	KU	Secondary	25'10"			N
38.02609	-84.46104	KU	Neutral	25'2"			N
38.02609	-84.46104	KU	Secondary	24'5"			N
38.02609	-84.46104	KU	Secondary	23'9"			N
38.02609	-84.46104	KU	OH Guy	23'2"			N
38.02609	-84.46104	Metronet	Communication		20'0"		N
38.02609	-84.46104	Charter	Communication	19'0"			71 N
38.02609	-84.46104	Windstream	Communication	15'11"			N
38.02609	-84.46104	Windstream	Communication	15'5"		16'3"	N
38.02583	-84.46140	KU	Primary	32'3"			N
38.02583	-84.46140	KU	Transformer	25'11"			N
38.02583	-84.46140	KU	Neutral	25'2"			N
38.02583	-84.46140	KU	Neutral	24'4"			N
38.02583	-84.46140	KU	Secondary	23'8"			N
38.02583	-84.46140	KU	Secondary	23'0"			N
38.02583	-84.46140	Metronet	Communication		19'6"		N
38.02583	-84.46140	Charter	Communication	18'10"	18'6"		52 N
38.02583	-84.46140	Windstream	Communication	17'3"			N
38.02583	-84.46140	Windstream	Communication	16'2"		15'2"	N
38.02556	-84.46177	KU	Primary	34'9"			Y
38.02556	-84.46177	KU	Primary	34'6"			Y
38.02556	-84.46177	KU	Neutral	31'8"			Y
38.02556	-84.46177	KU	Secondary	31'0"			Y
38.02556	-84.46177	KU	Secondary	30'4"			Y
38.02556	-84.46177	KU	Secondary Riser	27'6"			Y
38.02556	-84.46177	Metronet	Communication		24'2"		Y
38.02556	-84.46177	Charter	Communication	24'7"	23'2"		43 Y
38.02556	-84.46177	Windstream	Communication	21'8"			Y
38.02556	-84.46177	Windstream	Communication	19'0"		14'10"	Y
38.02528	-84.46217	KU	Primary	29'3"			Y
38.02528	-84.46217	KU	Primary	28'8"			Y
38.02528	-84.46217	KU	Neutral	26'1"			Y
38.02528	-84.46217	KU	Secondary	25'4"			Y
38.02528	-84.46217	KU	Secondary	24'6"			Y
38.02528	-84.46217	KU	Secondary Riser	23'11"			Y
38.02528	-84.46217	Metronet	Communication		20'7"		Y
38.02528	-84.46217	Charter	Communication	21'1"	19'7"		43 Y
38.02528	-84.46217	Windstream	Communication	18'8"			Y
38.02528	-84.46217	Windstream	Communication	16'11"		16'5"	Y
38.02500	-84.46257	KU	Primary	33'11"			N
38.02500	-84.46257	KU	Primary	33'6"			N

38.02500	-84.46257	KU	Transformer	28'0"			N
38.02500	-84.46257	KU	Secondary	27'5"			N
38.02500	-84.46257	KU	Neutral	26'7"			N
38.02500	-84.46257	KU	Secondary	25'11"			N
38.02500	-84.46257	KU	Secondary	25'3"			N
38.02500	-84.46257	Metronet	Communication		21'11"		N
38.02500	-84.46257	Charter	Communication	21'4"	20'11"		51 N
38.02500	-84.46257	Windstream	Communication	20'2"	19'11"		N
38.02500	-84.46257	Windstream	Communication	18'11"		14'10"	N
38.02473	-84.46295	KU	Primary	33'11"			N
38.02473	-84.46295	KU	Primary	33'4"			N
38.02473	-84.46295	KU	Neutral	31'2"			N
38.02473	-84.46295	KU	Neutral	30'5"			N
38.02473	-84.46295	KU	Secondary	29'10"			N
38.02473	-84.46295	KU	Secondary	29'3"			N
38.02473	-84.46295	Metronet	Communication		23'2"		N
38.02473	-84.46295	Charter	Communication	22'2"			59 N
38.02473	-84.46295	Windstream	Communication	20'11"			N
38.02473	-84.46295	Windstream	Communication	15'7"		9'10"	N
38.02446	-84.46334	KU	Primary	29'6"			N
38.02446	-84.46334	KU	Primary	28'11"			N
38.02446	-84.46334	KU	Transformer	25'3"			N
38.02446	-84.46334	KU	Neutral	23'10"			N
38.02446	-84.46334	KU	Secondary	23'2"			N
38.02446	-84.46334	KU	Secondary	22'6"			N
38.02446	-84.46334	KU	Secondary Riser	22'2"			N
38.02446	-84.46334	Metronet	Communication		18'10"		N
38.02446	-84.46334	Charter	Communication	18'10"	17'11"		44 N
38.02446	-84.46334	Windstream	Communication	17'11"	16'11"		N
38.02446	-84.46334	Windstream	Communication	15'10"		16'2"	N
38.02425	-84.46364	KU	Primary	28'7"			Y
38.02425	-84.46364	KU	Primary	28'3"			Y
38.02425	-84.46364	KU	Neutral	25'8"			Y
38.02425	-84.46364	KU	Secondary	24'11"			Y
38.02425	-84.46364	KU	Secondary	24'5"			Y
38.02425	-84.46364	KU	Secondary Riser	23'5"			Y
38.02425	-84.46364	Metronet	Communication		20'1"		Y
38.02425	-84.46364	Charter	Communication	21'1"	19'1"		46 Y
38.02425	-84.46364	Windstream	Communication	19'10"	18'1"		Y
38.02425	-84.46364	Windstream	Communication	17'2"		16'7"	Y
38.02404	-84.46393	KU	Primary	29'7"			N
38.02404	-84.46393	KU	Primary	29'2"			N
38.02404	-84.46393	KU	Neutral	26'10"			N
38.02404	-84.46393	KU	Secondary	26'2"			N
38.02404	-84.46393	KU	Secondary	25'6"			N
38.02404	-84.46393	Metronet	Communication		21'11"		N

38.02404	-84.46393	Charter	Communication	20'11"		65	N
38.02404	-84.46393	Windstream	Communication	19'10"			N
38.02404	-84.46393	Windstream	Communication	18'10"	18'4"		N
38.02378	-84.46430	KU	Primary	34'6"			N
38.02378	-84.46430	KU	Primary	33'8"			N
38.02378	-84.46430	KU	Transformer	29'2"			N
38.02378	-84.46430	KU	Secondary	27'9"			N
38.02378	-84.46430	KU	Neutral	26'8"			N
38.02378	-84.46430	KU	Secondary	26'0"			N
38.02378	-84.46430	KU	Secondary	25'4"			N
38.02378	-84.46430	KU	Secondary Riser	24'6"			N
38.02378	-84.46430	Metronet	Communication		21'2"		N
38.02378	-84.46430	Charter	Communication	20'2"		62	N
38.02378	-84.46430	Windstream	Communication	19'2"			N
38.02378	-84.46430	Windstream	Communication	18'2"	15'10"		N
38.02349	-84.46467	KU	Primary	32'11"			N
38.02349	-84.46467	KU	Primary	32'6"			N
38.02349	-84.46467	KU	Transformer	26'5"			N
38.02349	-84.46467	KU	Secondary	26'0"			N
38.02349	-84.46467	KU	Neutral	25'6"			N
38.02349	-84.46467	KU	Secondary	24'10"			N
38.02349	-84.46467	KU	Secondary	24'2"			N
38.02349	-84.46467	Metronet	Communication		20'10"		N
38.02349	-84.46467	Charter	Communication	20'5"	19'10"	46	N
38.02349	-84.46467	Windstream	Communication	19'3"	18'10"		N
38.02349	-84.46467	Windstream	Communication	17'7"			N
38.02349	-84.46467	Windstream	Communication	16'4"	13'3"		N
38.02320	-84.46508	KU	Primary	33'10"			Y
38.02320	-84.46508	KU	Primary	33'3"			Y
38.02320	-84.46508	KU	Transformer	27'1"			Y
38.02320	-84.46508	KU	Neutral	25'9"			Y
38.02320	-84.46508	KU	Secondary	25'0"			Y
38.02320	-84.46508	KU	Secondary Riser	24'7"			Y
38.02320	-84.46508	KU	Secondary	24'4"			Y
38.02320	-84.46508	KU	Secondary Riser X 2	23'8"			Y
38.02320	-84.46508	KU	Secondary Drip Loop	23'3"			Y
38.02320	-84.46508	Metronet	Communication		19'11"		Y
38.02320	-84.46508	Charter	Communication	20'3"	18'11"	34	Y
38.02320	-84.46508	Windstream	Communication	18'5"	17'11"		Y
38.02320	-84.46508	Windstream	Communication	17'1"	16'10"		Y
38.02320	-84.46508	Windstream	Communication	16'2"	15'10"	13'11"	Y
-84.46544	275.42241	KU	Primary	32'4"			N
-84.46544	275.42241	KU	Primary	32'0"			N
-84.46544	275.42241	KU	Neutral	29'8"			N
-84.46544	275.42241	KU	Secondary	29'0"			N
-84.46544	275.42241	KU	Secondary	28'5"			N

-84.46544	275.42241	Metronet	Communication		22'3"	N
-84.46544	275.42241	Charter	Communication	21'3"		66 N
-84.46544	275.42241	Windstream	Communication	19'0"		N
-84.46544	275.42241	Windstream	Communication	17'5"		N
-84.46544	275.42241	Windstream	Communication	16'5"	14'8"	N
						N
-84.46586	278.48334	KU	Primary	38'6"		N
-84.46586	278.48334	KU	Primary	38'2"		N
-84.46586	278.48334	KU	Transformer	31'6"		N
-84.46586	278.48334	KU	Transformer	30'0"		N
-84.46586	278.48334	KU	Neutral	29'9"		N
-84.46586	278.48334	KU	Secondary	29'1"		N
-84.46586	278.48334	KU	Secondary	28'7"		N
-84.46586	278.48334	KU	Secondary	28'0"		N
-84.46586	278.48334	KU	Secondary Riser	27'2"		N
-84.46586	278.48334	Metronet	Communication		22'0"	N
-84.46586	278.48334	Charter	Communication	21'0"		53 N
-84.46586	278.48334	Windstream	Communication	18'9"		N
-84.46586	278.48334	Windstream	Communication	17'8"		N
-84.46586	278.48334	Windstream	Communication	16'10"	13'9"	N
-84.46624	272.21088	KU	Primary	33'3"		N
-84.46624	272.21088	KU	Neutral	30'10"		N
-84.46624	272.21088	KU	Secondary Riser	30'8"		N
-84.46624	272.21088	KU	Secondary	30'1"		N
-84.46624	272.21088	KU	Secondary	29'6"		N
-84.46624	272.21088	KU	Secondary	28'10"		N
-84.46624	272.21088	KU	Secondary Riser	28'2"		N
-84.46624	272.21088	Metronet	Communication		22'0"	N
-84.46624	272.21088	Charter	Communication	21'0"		77 N
-84.46624	272.21088	Windstream	Communication	19'1"		N
-84.46624	272.21088	Windstream	Communication	18'0"		N
-84.46624	272.21088	Windstream	Communication	16'10"	15'2"	N
-84.46662	277.17968	KU	Primary	31'2"		Y
-84.46662	277.17968	KU	Primary	30'10"		Y
-84.46662	277.17968	KU	Transformer	24'11"		Y
-84.46662	277.17968	KU	Neutral	24'1"		Y
-84.46662	277.17968	KU	Secondary	23'6"		Y
-84.46662	277.17968	KU	Secondary	22'11"		Y
-84.46662	277.17968	KU	Secondary	19'9"	22'11"	Y
-84.46662	277.17968	Metronet	Communication		19'6"	Y
-84.46662	277.17968	Charter	Communication	18'6"		60 Y
-84.46662	277.17968	Windstream	Communication	16'10"		Y
-84.46662	277.17968	Windstream	Communication	16'2"		Y
-84.46662	277.17968	Windstream	Communication	15'0"	15'0"	Y
-84.46682	269.64331	KU	Primary	33'1"		Y
-84.46682	269.64331	KU	Primary	32'5"		Y
-84.46682	269.64331	KU	Primary	30'5"		Y

-84.46682	269.64331	KU	Neutral	26'2"		Y
-84.46682	269.64331	KU	Secondary	25'5"		Y
-84.46682	269.64331	KU	Secondary	24'7"		Y
-84.46682	269.64331	KU	Secondary Riser	22'5"	23'9"	Y
-84.46682	269.64331	KU	Streetlight	21'7"		Y
-84.46682	269.64331	Metronet	Communication		20'5"	Y
-84.46682	269.64331	Charter	Communication	19'5"		51 Y
-84.46682	269.64331	Windstream	Communication	18'2"		Y
-84.46682	269.64331	Windstream	Communication	17'3"		Y
-84.46682	269.64331	Windstream	Communication	15'9"	14'7"	Y
-84.46700	271.82326	KU	Primary	31'6"		N
-84.46700	271.82326	KU	Primary	31'2"		N
-84.46700	271.82326	KU	Transformer	24'8"		N
-84.46700	271.82326	KU	Neutral	24'3"		N
-84.46700	271.82326	KU	Secondary	23'7"		N
-84.46700	271.82326	KU	Secondary	22'11"		N
-84.46700	271.82326	Metronet	Communication		19'2"	N
-84.46700	271.82326	Charter	Communication	18'2"		52 N
-84.46700	271.82326	Windstream	Communication	17'8"		N
-84.46700	271.82326	Windstream	Communication	16'4"		N
-84.46700	271.82326	Windstream	Communication	15'8"	15'11"	N
-84.46712	275.85313	KU	Primary	33'1"		N
-84.46712	275.85313	KU	Streetlight	26'5"		N
-84.46712	275.85313	KU	Secondary Riser	26'4"		N
-84.46712	275.85313	KU	Neutral	25'10"		N
-84.46712	275.85313	KU	Secondary	25'2"		N
-84.46712	275.85313	KU	Secondary	24'5"		N
-84.46712	275.85313	KU	Neutral - OOS	21'6"		N
-84.46712	275.85313	KU	Secondary - OOS	20'11"		N
-84.46712	275.85313	Metronet	Communication		19'7"	N
-84.46712	275.85313	Charter	Communication	18'7"		21 N
-84.46712	275.85313	Windstream	Communication	17'5"		N
-84.46712	275.85313	Windstream	Communication	16'5"		N
-84.46712	275.85313	Windstream	Communication	15'6"	15'4"	N
-84.46716	275.09216	KU	Primary	32'5"		N
-84.46716	275.09216	KU	Neutral	25'5"		N
-84.46716	275.09216	KU	Primary Riser - OOS	25'3"		N
-84.46716	275.09216	KU	Secondary	24'9"		N
-84.46716	275.09216	KU	Secondary	24'0"		N
-84.46716	275.09216	KU	Neutral - OOS	21'8"		N
-84.46716	275.09216	KU	Secondary - OOS	20'10"		N
-84.46716	275.09216	KU	Secondary Riser - OOS	19'9"		N
-84.46716	275.09216	Metronet	Communication		20'3"	N
-84.46716	275.09216	Charter	Communication	19'3"		N/A N
-84.46716	275.09216	Windstream	Communication	17'4"		N
-84.46716	275.09216	Windstream	Communication	15'11"		N
-84.46716	275.09216	Windstream	Communication	15'2"	N/A	N

38.02136	-84.46539	KU	Primary	33'6"			N
38.02136	-84.46539	KU	Secondary	25'11"			N
38.02136	-84.46539	KU	Neutral	24'10"			N
38.02136	-84.46539	KU	Secondary	24'2"			N
38.02136	-84.46539	KU	Secondary	23'7"			N
38.02136	-84.46539	Metronet	Communication		20'3"		N
38.02136	-84.46539	Charter	Communication	19'3"			37 N
38.02136	-84.46539	Windstream	Communication	18'4"			N
38.02136	-84.46539	Windstream	Communication	17'6"		13'10"	N
38.02158	-84.46512	KU	Primary	28'6"			N
38.02158	-84.46512	KU	Primary	28'1"			N
38.02158	-84.46512	KU	Secondary	23'11"			N
38.02158	-84.46512	KU	Neutral	23'3"			N
38.02158	-84.46512	KU	Secondary	22'7"			N
38.02158	-84.46512	KU	Secondary	22'0"			N
38.02158	-84.46512	Metronet	Communication		18'9"		N
38.02158	-84.46512	Charter	Communication	18'9"	17'10"		60 N
38.02158	-84.46512	Windstream	Communication	17'10"	16'10"		N
38.02158	-84.46512	Windstream	Communication	16'10"	15'10"	14'10"	N
38.02177	-84.46478	KU	Primary	27'3"			N
38.02177	-84.46478	KU	Primary	26'9"			N
38.02177	-84.46478	KU	Secondary Riser	24'7"			N
38.02177	-84.46478	KU	Neutral	23'1"			N
38.02177	-84.46478	KU	Secondary	22'8"			N
38.02177	-84.46478	KU	Secondary	22'3"			N
38.02177	-84.46478	KU	OH Guy	21'11"			N
38.02177	-84.46478	Metronet	Communication		18'11"		N
38.02177	-84.46478	Charter	Communication	18'3"	17'11"		26 N
38.02177	-84.46478	Windstream	Communication	17'6"	16'11"		N
38.02177	-84.46478	Windstream	Communication	16'7"	15'11"	13'10"	N
38.02199	-84.46448	KU	Primary	28'7"			Y
38.02199	-84.46448	KU	Primary	28'3"			Y
38.02199	-84.46448	KU	Transformer	22'3"			Y
38.02199	-84.46448	KU	Secondary	21'10"			Y
38.02199	-84.46448	KU	Neutral	21'4"			Y
38.02199	-84.46448	KU	Secondary	20'8"			Y
38.02199	-84.46448	KU	Secondary	19'11"			Y
38.02199	-84.46448	Metronet	Communication		16'7"		Y
38.02199	-84.46448	Charter	Communication	17'7"	15'7"		42 Y
38.02199	-84.46448	Windstream	Communication	16'10"	14'7"		Y
38.02199	-84.46448	Windstream	Communication	16'0"	13'7"	13'11"	Y
38.02223	-84.46415	KU	Primary	32'8"			N
38.02223	-84.46415	KU	Primary	32'2"			N
38.02223	-84.46415	KU	Neutral	27'11"			N
38.02223	-84.46415	KU	Secondary	27'3"			N

38.02223	-84.46415	KU	Secondary	26'6"			N
38.02223	-84.46415	KU	Secondary Riser	25'9"			N
38.02223	-84.46415	Metronet	Communication		21'0"		N
38.02223	-84.46415	Charter	Communication	20'0"			56 N
38.02223	-84.46415	Windstream	Communication	18'7"			N
38.02223	-84.46415	Windstream	Communication	17'9"		14'8"	N
38.02245	-84.46386	KU	Primary	29'10"			N
38.02245	-84.46386	KU	Transformer	25'0"			N
38.02245	-84.46386	KU	Secondary	23'6"			N
38.02245	-84.46386	KU	Neutral	22'9"			N
38.02245	-84.46386	KU	Secondary	22'1"			N
38.02245	-84.46386	KU	Secondary	21'6"			N
38.02245	-84.46386	Metronet	Communication		18'2"		N
38.02245	-84.46386	Charter	Communication	18'2"	17'2"		41 N
38.02245	-84.46386	Windstream	Communication	16'5"	16'2"		N
38.02245	-84.46386	Windstream	Communication	15'9"	15'2"	13'6"	N
38.02268	-84.46354	KU	Primary	28'0"			Y
38.02268	-84.46354	KU	Primary	27'8"			Y
38.02268	-84.46354	KU	Neutral	24'5"			Y
38.02268	-84.46354	KU	Secondary	23'10"			Y
38.02268	-84.46354	KU	Secondary	23'2"			Y
38.02268	-84.46354	KU	Secondary	21'11"			Y
38.02268	-84.46354	KU	Secondary Riser	21'4"			Y
38.02268	-84.46354	Metronet	Communication		18'0"		Y
38.02268	-84.46354	Charter	Communication	19'0"	17'1"		68 Y
38.02268	-84.46354	Windstream	Communication	17'9"	16'1"		Y
38.02268	-84.46354	Windstream	Communication	16'10"	15'1"	14'7"	Y
38.02290	-84.46326	KU	Primary	29'1"			N
38.02290	-84.46326	KU	Primary	28'9"			N
38.02290	-84.46326	KU	Neutral	25'10"			N
38.02290	-84.46326	KU	Secondary	25'2"			N
38.02290	-84.46326	KU	Secondary	24'6"			N
38.02290	-84.46326	KU	OH Guy	23'11"			N
38.02290	-84.46326	Metronet	Communication		19'9"		N
38.02290	-84.46326	Charter	Communication	18'9"			92 N
38.02290	-84.46326	Windstream	Communication	17'8"			N
38.02290	-84.46326	Windstream	Communication	16'9"		15'8"	N
38.02312	-84.46294	KU	Primary	40'3"			N
38.02312	-84.46294	KU	Transformer	32'1"			N
38.02312	-84.46294	KU	Neutral	31'10"			N
38.02312	-84.46294	KU	Secondary	31'4"			N
38.02312	-84.46294	KU	Secondary	30'5"			N
38.02312	-84.46294	Metronet	Communication		21'9"		N
38.02312	-84.46294	Charter	Communication	20'9"			102 N
38.02312	-84.46294	Windstream	Communication	19'1"			N
38.02312	-84.46294	Windstream	Communication	17'6"		12'3"	N

N		
N		
N		
N		
N		
N		
N		
N		
N	D: Pedestrian Only 9.5'	1=None
N		
N		
N		
N		
N		
N		
N		
N	D: Pedestrian Only 9.5'	3=Elec
N		
N		
N		
N		
N		
N		Extend secondary riser
N		
N		
N		
N	D: Pedestrian Only 9.5'	1=None
N		
N		
N		
N		
N		
N		
N		
N	D: Pedestrian Only 9.5'	1=None
N		
N		
N		
N		
N		
N	D: Pedestrian Only 9.5'	2=Comms
N		
N		
N		
N		
N		

N			Lower Charter
N			Lower Windstream
N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
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N	D: Pedestrian Only 9.5'	2=Comms	
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
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N			Lower Charter
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N	B:Residential/Over Driveways	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
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N	B:Residential/Over Driveways	1=None	
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	1=None	Attach to new pole
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N	B:Residential/Over Driveways	1=None	Attach to new pole
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N			Extend secondary riser
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Y	D: Pedestrian Only 9.5'	2=Comms
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Y		Resag Windstream
N	D: Pedestrian Only 9.5'	1=None
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N	B:Residential/Over Driveways	3=Elec
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N		Raise streetlight drip loop
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N	B:Residential/Over Driveways	2=Comms
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N			Lower Windstream
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N	D: Pedestrian Only 9.5'	1=None	Transfer to new pole
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Y			Lower & Resag Charter

Y			Lower Windstream
N	D: Pedestrian Only 9.5'	3=Elec	
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N			Raise secondary drip loop
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N	D: Pedestrian Only 9.5'	3=Elec	
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N			Raise secondary drip loop
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N			Raise secondary drip loop
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N	B:Residential/Over Driveways	1=None	
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N		Extend secondary riser
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N	D: Pedestrian Only 9.5'	3=Elec
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N		Remove out of service neutral
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N	D: Pedestrian Only 9.5'	1=None	
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N	D: Pedestrian Only 9.5'	2=Comms	
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Y	D: Pedestrian Only 9.5'	2=Comms	
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N	D: Pedestrian Only 9.5'	2=Comms	
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N	D: Pedestrian Only 9.5'	1=None	
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From: Edwards, Kimberly
Sent: Tuesday, February 13, 2018 10:54 AM
To: Lauren Sandefur
Cc: Hays, Sarah K
Subject: RE: LX135-01 Metronet Application
Attachments: Application and pole data sheet.xlsx

Good morning Lauren,

Windstream OSP has reviewed the information you provided and they will accept the Pole Inventory Report in replacement of the Pole Attachment Data Sheets, however they will require a signed standard Windstream Pole Attachment Application form – see attached.

There is a \$75.00 application processing fee – with a maximum of 25 poles/application and a \$50.00 post inspection fee/pole.

Please note: Windstream will accept up to 300/poles per 30 rolling calendar days.

Please let me know of any other questions or concerns.

Thank you,

Kim

Kimberly Edwards
Manager – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Edwards, Kimberly
Sent: Monday, February 12, 2018 7:07 AM
To: 'Lauren Sandefur' <Lauren.Sandefur@metronetinc.com>
Subject: RE: LX135-01 Metronet Application

Good morning Lauren,

The Windstream OSP Managers/Supervisors in the field are currently reviewing the application/inventory report you provided to determine if this is acceptable. Since these are not the Windstream standard forms for pole attachments, I will need their approval to accept.

As soon as they have reviewed and provide their feedback, I will let you know.

Thank you,

Kim

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642



From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Friday, February 09, 2018 11:12 AM

To: Edwards, Kimberly <Kimberly.Edwards@windstream.com>

Subject: RE: LX135-01 Metronet Application

Good Morning Kim,

Per my conversation yesterday with Brandie, she was reviewing our application to see if this would be ok to submit.

If you have a chance to review it today that would be great, I just need an update for Monday morning.

Thanks!

Lauren Sandefur

Permit Specialist

From: Lauren Sandefur

Sent: Thursday, February 8, 2018 10:43 AM

To: 'Brandie.Mcgehee@windstream.com' <Brandie.Mcgehee@windstream.com>

Subject: LX135-01 Metronet Application

Good Morning Brandie,

Attached are the files for LX135-01, please let me know if these will work for you.

When applying we have to apply under the name 'CMN-RUS, Inc'.

There is a LX135-02 that will be submitted once we get this one figured out.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com

METRONET.

**NOTE TO ALL FIRMS: IF YOU CHOOSE NOT TO PROCEED WITH
BILLED FOR WINDSTREAM'S ENGINEERING TIME. THERE ARE N**

**EXHIBIT B
Windstream CORPORATION
APPLICATION FOR POLE LICENSE**

Name of Firm Applying: _____ Contact Name, Phone # _____
 Street Address, City, ST, ZIP of Firm Applying _____ EMAIL ADDRESS _____
 _____ Authorized Signature & Date: _____

By this application & signature, my firm is agreeing to pay all engineering fees associated with this app
 If we choose to proceed all ESTIMATED fees, including engineering & makeready
NON PAYMENT OF FEES WILL RESULT IN ALL FUTURE APPLICATI
NOTE: Final costs will be determined by actual time & material required to do the make-ready wor

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Licensee to complete	Licensee to complete	Licensee to complete	Licensee to Complete	Licensee to Complete	Licensee to Complete
	Windstream Lead & Structure No. (Pole No.)	Power Pole No.	Location: Street, City, Township, Zip Code	Height, Class, Ownership of Pole	Hgt of highest Tel Cable	Hgt of highest Tel Drop
1						
2						
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24						
25						

PLEASE ATTACH DRAWINGS TO THIS APPLICATION - IT WILL NOT BE ACCEPTED WITHOUT THEM

Submit to: Windstream.JointUse@Windstream.com

Windstream OSP Construction Manager/Engineer Authorized Signature & Date: _____

ESTIMATED TOTAL COSTS					
IF BE PROCESSED WITHOUT THEM					

ndstream.com.

Windstream Pole Attachment Data Sheet

EXHIBIT B – PART II

WINDSTREAM POLE NUMBER		POWER POLE NUMBER	
STREET LOCATION		NAME OF ATTACHER	
CITY/BORO/TOWNSHIP		DATE	FIELD PERSONNEL NAME
ATTACHMENT TYPE <input type="checkbox"/> Cable <input type="checkbox"/> Power Supply <input type="checkbox"/> Service Drop <input type="checkbox"/> Overhead Guy			
POLE SIZE	TRANSFORMER/DEVICE ON POLE <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT <input type="checkbox"/> Yes <input type="checkbox"/> No	STREET LIGHT BRACKET HEIGHT TOP OF CONDUIT RISER HEIGHT
GUYING REQUIRED FOR ANGLE, CORNER, OR TAP POLE CONSTRUCTION <input type="checkbox"/> Yes <input type="checkbox"/> No		CONDUIT RISER <input type="checkbox"/> Yes <input type="checkbox"/> No; If yes ➡ <input type="checkbox"/> Primary <input type="checkbox"/> Secondary	

MAKE READY WORK	REQUIRED	IF YES, PROVIDE ADDITIONAL DETAIL
	<input type="checkbox"/> Yes <input type="checkbox"/> No	

	POLE NO. ➡	BEFORE	AFTER
	*TYPE OF POWER ATTACHMENT ➡	<input type="checkbox"/> Neutral	<input type="checkbox"/> Secondary
POLE DRAWING	<p>Pole Side</p> <p>Lowest Power Attachment <input type="checkbox"/> Front <input type="checkbox"/> Back Attach. Ht. _____</p> <p>* <input type="checkbox"/> Front <input type="checkbox"/> Back</p> <p>Mid Span Distance</p> <p>Proposed Attach. Ht. _____</p> <p><input type="checkbox"/> Front <input type="checkbox"/> Back</p> <p>Attach. Ht. _____</p> <p><input type="checkbox"/> Front <input type="checkbox"/> Back</p> <p>Attach. Ht. _____</p> <p><input type="checkbox"/> Front <input type="checkbox"/> Back</p> <p>Attach. Ht. _____</p> <p><input type="checkbox"/> Front <input type="checkbox"/> Back</p> <p>Ground Line</p>		
	Company Name		
	1. _____		
	2. _____		
	3. _____		

SPAN	MID-SPAN HEIGHT	SPAN CROSSES OVER (Check all that apply)
	Ft.	<input type="checkbox"/> Body of Water <input type="checkbox"/> Street <input type="checkbox"/> Driveway <input type="checkbox"/> Field <input type="checkbox"/> Interstate <input type="checkbox"/> Swimming Pool <input type="checkbox"/> Building <input type="checkbox"/> Railroad <input type="checkbox"/> Yard <input type="checkbox"/> Parking Lot

NOTE	
-------------	--

Are there any other poles?

From: Windstream Jointuse
Sent: Monday, March 19, 2018 5:03 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX135-02W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1634 and submitted to the Windstream Engineer, Ashley Sanders as of 3/19/18 to be processed. Let me know if you have any questions or concerns.

Thank you,
Nicole

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 12:13 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX135-02W

Good Morning,

Please see attached for proposal titled LX135-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

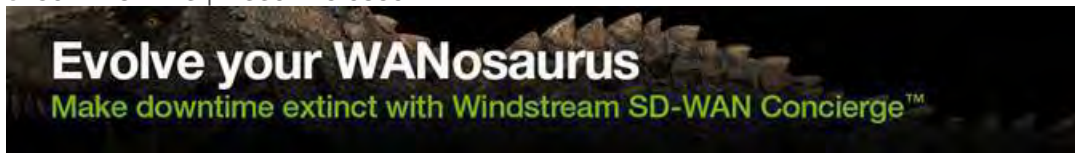
From: Windstream Jointuse
Sent: Monday, March 19, 2018 5:44 PM
To: Lauren Sandefur
Cc: Hays, Sarah K
Subject: RE: LX135-04W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1640 and submitted to the Windstream Engineer, Ashley Sanders as of 03/19/18 go over and to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 12:31 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: LX135-04W

Good Morning,

Please see attached for proposal titled LX135-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

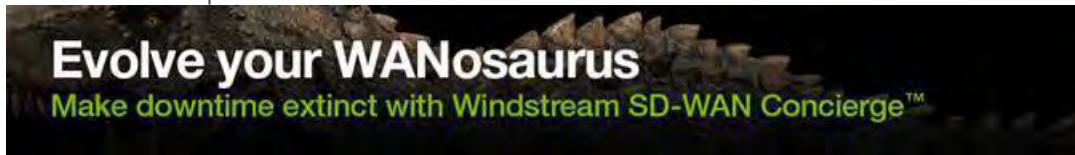
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 12:16 PM
To: Lauren Sandefur
Cc: Permits; Hays, Sarah K
Subject: RE: LX135-05W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1674 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 12:34 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: LX135-05W

Good Morning,

Please see attached for proposal titled LX135-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

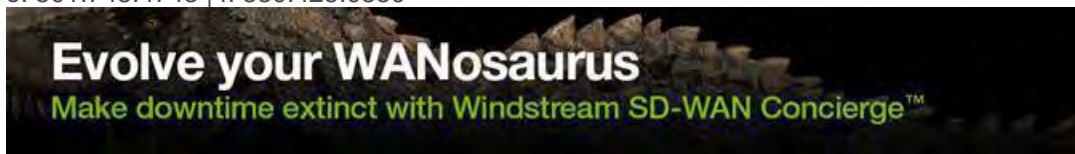
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 12:42 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX135-06W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1675 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 12:37 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX135-06W

Good Morning,

Please see attached for proposal titled LX135-06W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



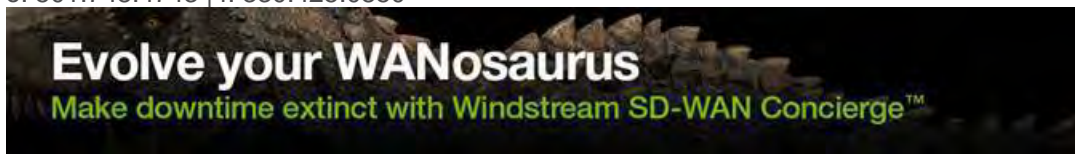
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 5:02 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX167-01W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1699 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 19, 2018 1:55 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX167-01W

Good Afternoon,
Please see attached for proposal titled LX167-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

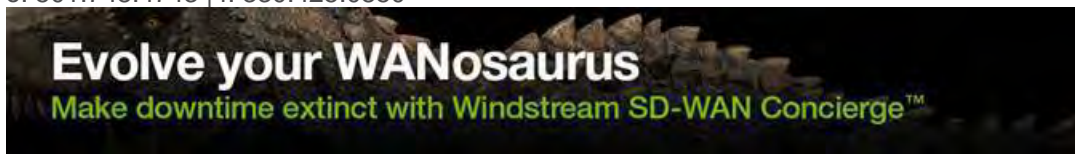
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 4:29 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX167-02W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1694 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 19, 2018 2:00 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX167-02W

Good Afternoon,
Please see attached for proposal titled LX167-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

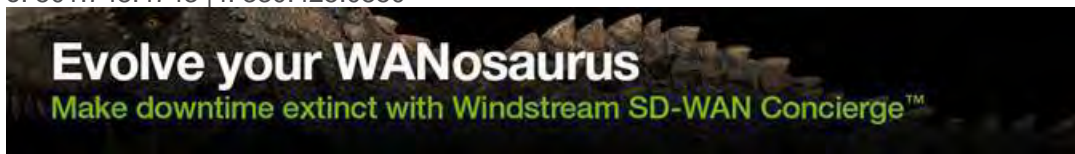
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 4:43 PM
To: Lauren Sandefur
Cc: Permits; Hays, Sarah K
Subject: RE: LX167-03W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1695 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 19, 2018 2:05 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Permits <Permits@metronetinc.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: LX167-03W

Good Afternoon,

Please see attached for proposal titled LX167-03W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



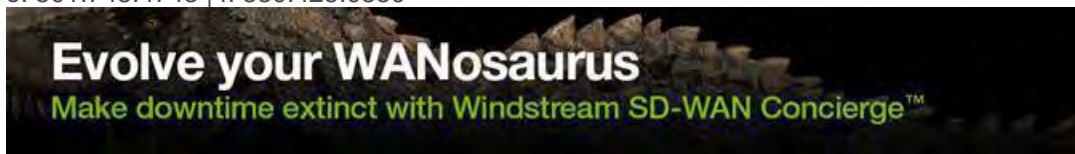
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 5:14 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX167-04W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1702 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 19, 2018 2:19 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX167-04W

Good Afternoon,
Please see attached for proposal titled LX167-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

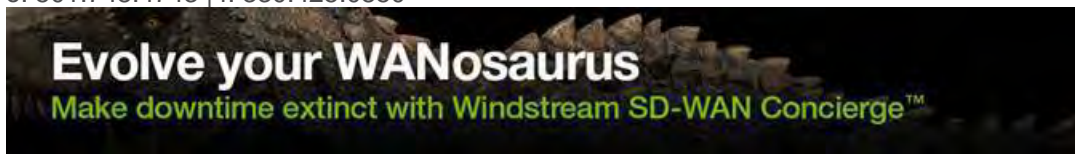
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 5:21 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX167-05W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1703 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 19, 2018 2:20 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX167-05W

Good Afternoon,
Please see attached for proposal titled LX167-05W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

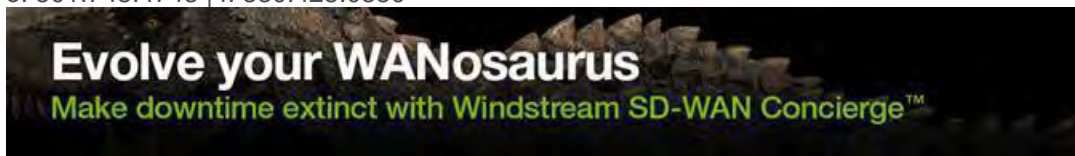
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 2:24 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX-FR02-01W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1681 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 2:09 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX-FR02-01W

Good Morning,

Please see attached for proposal titled LX-FR02-01W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

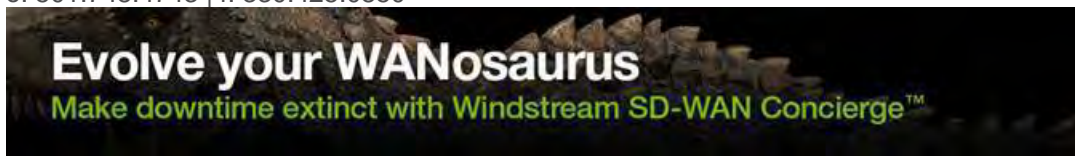
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 2:31 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX-FR02-02W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1682 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 2:23 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX-FR02-02W

Good Morning,

Please see attached for proposal titled LX-FR02-02W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

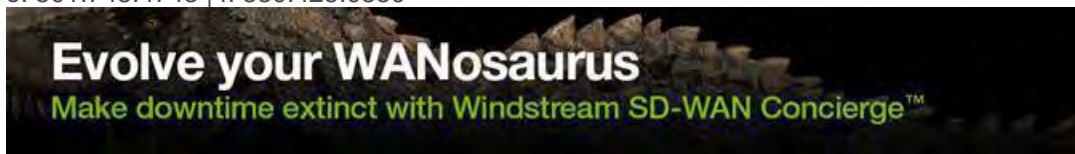
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 2:37 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX-FR02-03W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1685 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 2:33 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX-FR02-03W

Good Morning,

Please see attached for proposal titled LX-FR02-03W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.

Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

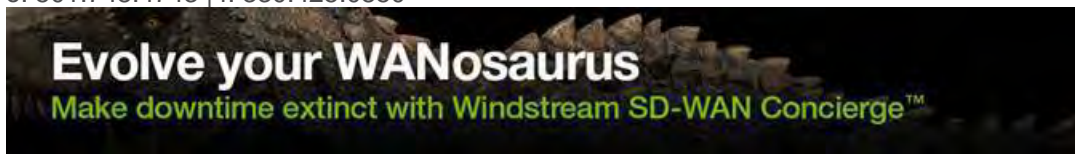
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 12:50 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX-FR02-04W

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1677 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Sunday, March 18, 2018 1:44 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX-FR02-04W

Good Morning,
Please see attached for proposal titled LX-FR02-04W. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



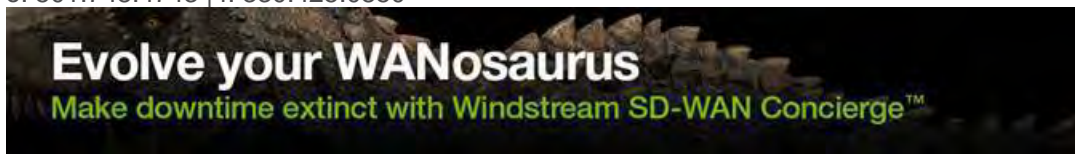
From: Windstream Jointuse
Sent: Tuesday, March 20, 2018 4:20 PM
To: Lauren Sandefur
Cc: Hays, Sarah K; Permits
Subject: RE: LX-FR04-05BiW

Lauren,

Windstream is in receipt of your request. The request has been assigned the number JUPR1693 and submitted to the Windstream Engineer, Ashley Sanders as of 3/20/18 to be processed. Let me know if you have any questions or concerns.

Thank you,

Felicia(Nicole)Hodges
Coordinator - Engineering Support | Windstream
11101 Anderson Dr. Ste. 100 | Little Rock, AR 72212
Felicia.N.Hodges@Windstream.com
o: 501.748.4743 | f: 330.425.0850



From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Monday, March 19, 2018 1:44 PM
To: Windstream Jointuse <Windstream.Jointuse@windstream.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Permits <Permits@metronetinc.com>
Subject: LX-FR04-05BiW

Good Afternoon,
Please see attached for proposal titled LX-FR04-05BiW. This is a proposal for Windstream poles. Let me know if you have any questions or need anything else.
Thank you,

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com

METRONET.

From: George Kemp <George.Kemp@metronetinc.com>
Sent: Sunday, March 25, 2018 7:58 PM
To: Mateyoke, Charles
Cc: Hays, Sarah K; Williamson, Tim; Rucker, Jamie; Henson, Jason; Lloyd, James; Edwards, Kimberly
Subject: Re: METRONET CONSTRUCTION

Good evening Mr. Mateyoke,

Please call me George. Yes, I will be there. Is there a time on Tuesday that works better for you?

I look forward to our meeting.

George Kemp, Ph.D.
Director, Safety & Quality Assurance
MetroNet, Inc
904.504.3571

On Sun, Mar 25, 2018 at 6:02 PM -0400, "Mateyoke, Charles" <Charles.Mateyoke@windstream.com> wrote:

Mr. Kemp,

If you would like I could meet with you on Tuesday outside of our facility at 2901 Palumbo Drive at the corner of Palumbo Drive and Darby Creek Drive.

Tom Mateyoke

Local Manager - Operations | Windstream
1401 Higbee Mill Road | Lexington, KY 40503

o: 859 272-0214 | m: 859 221-7914
charles.mateyoke@windstream.com

From: George Kemp [mailto:George.Kemp@metronetinc.com]
Sent: Friday, March 23, 2018 10:37 AM
To: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Williamson, Tim <Tim.Williamson@windstream.com>; Henson, Jason <Jason.Henson@windstream.com>; Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Cc: George Kemp <George.Kemp@metronetinc.com>
Subject: Re: METRONET CONSTRUCTION

Good morning,

The information you are sharing with us is very concerning to us as well. As MetroNet's Director, Safety & Quality Assurance one of my goals is to help ensure we are doing everything we can to protect the facilities of other utilities.

I will be in Lexington next Monday and Tuesday. Who can I meet with to review these concerns? Do you have a field operations manager and a damage prevention manager or are there other people that would be better to meet with? Protecting your facilities is important to us!

Please let me know who, when and where and I will be there. This is important to me.

Best regards,
George

George Kemp, Ph.D.
Director, Safety & Quality Assurance
MetroNet

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Date: Friday, March 23, 2018 at 10:12 AM
To: "Edwards, Kimberly" <Kimberly.Edwards@windstream.com>, Nicole Sugg <Nicole.Sugg@metronetinc.com>, Tom Osborne <Tom.Osborne@metronetinc.com>, George Kemp <George.Kemp@metronetinc.com>, John Storey <John.Storey@metronetinc.com>
Cc: "Hays, Sarah K" <Sarah.K.Hays@windstream.com>, "Lloyd, James" <James.Lloyd@windstream.com>, "Rucker, Jamie" <Jamie.Rucker@windstream.com>
Subject: RE: METRONET CONSTRUCTION

Tom/George/John, See below and please apply to all to address these concerns.

Kim,

We are adding our underground team to this email. We most definitely contact 811 and take every precaution to avoid any disturbances. I am unaware of the recent incident you describe. I am on the aerial permitting team, but can assure you the gentleman mentioned above will get back to you as soon as possible.

Thank you,

Lauren Sandefur
Permit Specialist

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]
Sent: Friday, March 23, 2018 9:00 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>; Nicole Sugg <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: FW: METRONET CONSTRUCTION
Importance: High

Lauren/Nicole,

Please see the email string below regarding Windstream cut cables – at 248 Catera Trace and another on Darlington Circle. Is the MetroNet contractor contacting 811 or taking normal precautions before digging? This is impacting

Windstream customers in the area and this is completely unacceptable. Windstream has escalating concerns on how many Windstream cables are being cut. What are the next steps to getting these issues addressed and to have the cuts Windstream has identified properly fixed? Will MetroNet please send notification of all cuts to Windstream for inspection and to properly resolve? We would like to have a meeting as soon as possible to discuss this in detail.

Please advise ASAP.

Thank you,

Kimberly Edwards

Manager – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

Kimberly.edwards@windstream.com | windstreambusiness.com

o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

From: Williamson, Tim

Sent: Thursday, March 22, 2018 4:50 PM

To: Henson, Jason <Jason.Henson@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Cc: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Trimble, David <David.Trimble@windstream.com>; Roberts, Barry <Barry.Roberts@windstream.com>; McAbee, Phillip <Phillip.McAbee@windstream.com>

Subject: RE: METRONET CONSTRUCTION

Thanks Jason! We need to stop these actions.

Timothy Williamson

Director of Field Operations | Windstream Lexington KY

130 W. New Circle Rd. Suite 170 Lexington, KY 40505

O: 859-357-6105 / M: 859-421-9766

tim.williamson@windstream.com | windstreambusiness.com

From: Henson, Jason

Sent: Thursday, March 22, 2018 5:49 PM

To: Williamson, Tim <Tim.Williamson@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>

Cc: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Trimble, David <David.Trimble@windstream.com>; Roberts, Barry <Barry.Roberts@windstream.com>; McAbee, Phillip <Phillip.McAbee@windstream.com>

Subject: Re: METRONET CONSTRUCTION

Tim,

I have sent this down to James Lloyd as well. Hoping they may have some contacts from the Joint Use discussions they had with Metronet.

Jason Henson

OSP Design Manager KY-NY-PA

c:859-361-0323 o:859-258-2196

jason.henson@windstream.com

On Mar 22, 2018, at 5:41 PM, Williamson, Tim <Tim.Williamson@windstream.com> wrote:

Barry and David,

Who do we address this with? This is just some of what we have.

Timothy Williamson

Director of Field Operations | Windstream Lexington KY

130 W. New Circle Rd. Suite 170 Lexington, KY 40505

O: 859-357-6105 / M: 859-421-9766

tim.williamson@windstream.com | windstreambusiness.com

From: Mateyoke, Charles

Sent: Thursday, March 22, 2018 5:16 PM

To: Williamson, Tim <Tim.Williamson@windstream.com>; Henson, Jason

<Jason.Henson@windstream.com>; Trimble, David <David.Trimble@windstream.com>

Subject: METRONET CONSTRUCTION

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Tom Mateyoke

Local Manager - Operations | Windstream

1401 Higbee Mill Road | Lexington, KY 40503

o: 859 272-0214 | m: 859 221-7914

charles.mateyoke@windstream.com

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From: Mateyoke, Charles
Sent: Sunday, March 25, 2018 6:02 PM
To: George Kemp; Williamson, Tim; Henson, Jason; Edwards, Kimberly; Rucker, Jamie; Lloyd, James; Hays, Sarah K
Subject: RE: METRONET CONSTRUCTION

Mr. Kemp,

If you would like I could meet with you on Tuesday outside of our facility at 2901 Palumbo Drive at the corner of Palumbo Drive and Darby Creek Drive.

Tom Mateyoke

Local Manager - Operations | Windstream
1401 Higbee Mill Road | Lexington, KY 40503
o: 859 272-0214 | m: 859 221-7914
charles.mateyoke@windstream.com

From: George Kemp [mailto:George.Kemp@metronetinc.com]
Sent: Friday, March 23, 2018 10:37 AM
To: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Williamson, Tim <Tim.Williamson@windstream.com>; Henson, Jason <Jason.Henson@windstream.com>; Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Hays, Sarah K <Sarah.K.Hays@windstream.com>
Cc: George Kemp <George.Kemp@metronetinc.com>
Subject: Re: METRONET CONSTRUCTION

Good morning,

The information you are sharing with us is very concerning to us as well. As MetroNet's Director, Safety & Quality Assurance one of my goals is to help ensure we are doing everything we can to protect the facilities of other utilities.

I will be in Lexington next Monday and Tuesday. Who can I meet with to review these concerns? Do you have a field operations manager and a damage prevention manager or are there other people that would be better to meet with? Protecting your facilities is important to us!

Please let me know who, when and where and I will be there. This is important to me.

Best regards,
George

George Kemp, Ph.D.
Director, Safety & Quality Assurance
MetroNet

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Date: Friday, March 23, 2018 at 10:12 AM
To: "Edwards, Kimberly" <Kimberly.Edwards@windstream.com>, Nicole Sugg <Nicole.Sugg@metronetinc.com>, Tom Osborne <Tom.Osborne@metronetinc.com>, George Kemp <George.Kemp@metronetinc.com>, John Storey <John.Storey@metronetinc.com>
Cc: "Hays, Sarah K" <Sarah.K.Hays@windstream.com>, "Lloyd, James" <James.Lloyd@windstream.com>, "Rucker, Jamie" <Jamie.Rucker@windstream.com>
Subject: RE: METRONET CONSTRUCTION

Tom/George/John, See below and please apply to all to address these concerns.

Kim,
We are adding our underground team to this email. We most definitely contact 811 and take every precaution to avoid any disturbances. I am unaware of the recent incident you describe. I am on the aerial permitting team, but can assure you the gentleman mentioned above will get back to you as soon as possible.

Thank you,

Lauren Sandefur
Permit Specialist

From: Edwards, Kimberly [<mailto:Kimberly.Edwards@windstream.com>]
Sent: Friday, March 23, 2018 9:00 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>; Nicole Sugg <Nicole.Sugg@metronetinc.com>
Cc: Hays, Sarah K <Sarah.K.Hays@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>; Rucker, Jamie <Jamie.Rucker@windstream.com>
Subject: FW: METRONET CONSTRUCTION
Importance: High

Lauren/Nicole,

Please see the email string below regarding Windstream cut cables – at 248 Catera Trace and another on Darlington Circle. Is the MetroNet contractor contacting 811 or taking normal precautions before digging? This is impacting Windstream customers in the area and this is completely unacceptable. Windstream has escalating concerns on how many Windstream cables are being cut. What are the next steps to getting these issues addressed and to have the cuts Windstream has identified properly fixed? Will MetroNet please send notification of all cuts to Windstream for inspection and to properly resolve? We would like to have a meeting as soon as possible to discuss this in detail.

Please advise ASAP.

Thank you,

Kimberly Edwards
Manager – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
Kimberly.edwards@windstream.com | windstreambusiness.com
o: 501.748.3691 | m: 501.514.1390 | f: 330.425.0642

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Sent: Thursday, March 22, 2018 4:50 PM

To: Henson, Jason <Jason.Henson@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>
Cc: Mateyoke, Charles <Charles.Mateyoke@windstream.com>; Trimble, David <David.Trimble@windstream.com>;
Roberts, Barry <Barry.Roberts@windstream.com>; McAbee, Phillip <Phillip.McAbee@windstream.com>
Subject: RE: METRONET CONSTRUCTION

Thanks Jason! We need to stop these actions.

Timothy Williamson
Director of Field Operations | Windstream Lexington KY
130 W. New Circle Rd. Suite 170 Lexington, KY 40505
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tim.williamson@windstream.com | windstreambusiness.com

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I have sent this down to James Lloyd as well. Hoping they may have some contacts from the Joint Use discussions they had with Metronet.

Jason Henson
OSP Design Manager KY-NY-PA
c:859-361-0323 o:859-258-2196
jason.henson@windstream.com

On Mar 22, 2018, at 5:41 PM, Williamson, Tim <Tim.Williamson@windstream.com> wrote:

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Who do we address this with? This is just some of what we have.

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Sent: Friday, March 23, 2018 10:37 AM
To: Mateyoke, Charles; Williamson, Tim; Henson, Jason; Edwards, Kimberly; Rucker, Jamie; Lloyd, James; Hays, Sarah K
Cc: George Kemp
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Importance: High

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jason.henson@windstream.com

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From: Hays, Sarah K
Sent: Thursday, March 22, 2018 9:54 AM
To: Lauren Sandefur
Cc: Hodges, Felicia N; Edwards, Kimberly; Sanders, Ashley L; Lloyd, James
Subject: RE: MetroNet Lexington Applications

Lauren,

Windstream cannot be responsible for holding the applications while we're waiting for the 30 days to roll over. Windstream will reject any applications we receive after we have hit 300 poles. Nicole will let you know which applications will be rejected out of the ones you have submitted. You will be able to submit applications for 116 poles on 04/18/18.

Approximately how many poles does MetroNet intend to submit to Windstream?

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]
Sent: Wednesday, March 21, 2018 3:17 PM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Cc: Hodges, Felicia N <Felicia.N.Hodges@windstream.com>; Edwards, Kimberly <Kimberly.Edwards@windstream.com>; Sanders, Ashley L <Ashley.L.Sanders@windstream.com>; Lloyd, James <James.Lloyd@windstream.com>
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Thanks Sarah, we can keep submitting applications though so we aren't sitting on them right?

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Permit Specialist

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Subject: MetroNet Lexington Applications

Lauren,

We have received 375 poles over 18 applications from MetroNet since March 14. We can only accept 300 poles over a 30 day rolling calendar period to allow our field adequate time to survey these poles.

Since we are over the 300 poles we allow, the next application date we will be able to start processing application from MetroNet will be 04/18/18. By this date, 191 poles will have rolled out of the 30 days and we will be able to accept 116. After that date we will be able to stay at 300 poles for the 30 day period.

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

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Cc: Hodges, Felicia N; Edwards, Kimberly; Sanders, Ashley L; Lloyd, James
Subject: RE: MetroNet Lexington Applications

Okay, I will start resubmitting 4/18/2018. For fiscal year there will be approximately 2200 poles. We are doing east and south quads for Lexington.

Lauren Sandefur

Permit Specialist

From: Hays, Sarah K [mailto:Sarah.K.Hays@windstream.com]
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Lauren,

We have received 375 poles over 18 applications from MetroNet since March 14. We can only accept 300 poles over a 30 day rolling calendar period to allow our field adequate time to survey these poles.

Since we are over the 300 poles we allow, the next application date we will be able to start processing application from MetroNet will be 04/18/18. By this date, 191 poles will have rolled out of the 30 days and we will be able to accept 116. After that date we will be able to stay at 300 poles for the 30 day period.

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

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From: Hays, Sarah K
Sent: Wednesday, May 09, 2018 5:21 PM
To: Nicole Sugg; Addison Burk; Lauren Sandefur
Cc: Edwards, Kimberly
Subject: Clarifying MetroNet Authorization on Windstream Attachments

MetroNet,

Windstream has received information from the field that indicates MetroNet understands they have the authority to move existing Windstream attachments on Windstream owned poles and non-Windstream owned poles. We would like to clarify, as this is incorrect. MetroNet does not have authorization to move any Windstream attachments. Only Windstream OSP personnel are authorized to move a Windstream attachment.

Please let us know if you have any questions or concerns.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Monday, February 19, 2018 11:32 AM
To: Hays, Sarah K
Subject: FW: FW: Pole Attachment Ex.

Good Morning Sarah,
Please see below.
Thanks!

Lauren Sandefur
Permit Specialist

From: David Solomon [mailto:dsolomon@iconengineering.net]
Sent: Monday, February 19, 2018 10:31 AM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: Re: FW: Pole Attachment Ex.

Hi Lauren,

This helps a little but I still have several questions. I noticed the proposed strand height on her example is only 37" from power and the antenna is higher than the tip of the proposed pole they will be placing.

Column 4: Should we use "WXM" to signify Windstream pole ownership. It would appear so based on her example.

Column 5: Is this actually the highest Telephone cable or highest comm attachment on the pole?

Column 10: Does Icon propose attachment height or Windstream?

Column 11: Does Icon propose MRE or Windstream?

For PLA do we model the pole as it is today (Existing) or with make ready and proposed Metronet plant installed?

David Solomon
National Technical Services Manager
Icon Engineering, Inc.
400 Kimberly Way
Suite 403
Canton, GA. 30114
Office [770-592-9797](tel:770-592-9797)
Cell [770-687-4932](tel:770-687-4932)

On Mon, Feb 19, 2018 at 11:12 AM, Lauren Sandefur <Lauren.Sandefur@metronetinc.com> wrote:

Good Morning!

Here is the example she sent me regarding the WS application.

o: [501.748.5864](tel:501.748.5864) | f: [330.486.3600](tel:330.486.3600)

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Friday, February 16, 2018 9:45 AM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Subject: Pole Attachment Ex.

Good Morning Sarah,

Is there any way you can provide an example application for us to review? We are wanting to get this right from the beginning.

Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: [812.213.1328](tel:812.213.1328)
www.MetronetInc.com

METRONET.

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From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, May 22, 2018 12:20 PM
To: Hays, Sarah K
Subject: Metronet Applications

Windstream Application	Poles	Submittal Date	Days Since Submittal
LX135-01W	25	3/15/2018	68
LX132-01W	25	3/14/2018	69
LX135-03W	25	3/17/2018	66
LX135-04W	25	3/17/2018	66
LX135-05W	25	3/17/2018	66
LX135-06W	3	3/17/2018	66
LX-FR02-04W	10	3/17/2018	66
LX-FR02-03W	25	3/17/2018	66
LX-FR02-01W	25	3/17/2018	66
LX-FR02-02W	25	3/17/2018	66
LX135-02W	25	3/19/2018	64
LX-FR04-05BiW	12	3/19/2018	64
LCP-LX167-01W	25	3/19/2018	64
LCP-LX167-02W	25	3/19/2018	64
LCP-LX167-03W	25	3/19/2018	64
LCP-LX167-04W	25	3/19/2018	64
LCP-LX167-05W	22	3/19/2018	64

Good Morning Sarah,
Here is the first batch of applications that we are waiting to hear back on.
Please let me know if you need any more information.
Thank you!

Lauren Sandefur
Metronet | Permit Specialist
3701 Communications Way | Evansville, IN 47715
Office: 812.213.1328
www.MetronetInc.com



From: Hays, Sarah K
Sent: Tuesday, May 22, 2018 4:51 PM
To: Addison Burk
Cc: Lauren Sandefur; Nicole Sugg
Subject: RE: Metronet Applications

Addison,

We communicated with MetroNet that since the initial batch of applications from MetroNet included 375 poles, the engineer would need 60 days to respond since this was 75 poles over the 300 poles for the rolling 30 calendar days and then the 14 days for make ready response.

There are three applications that we are waiting to respond to, and I have contacted the engineer and have still not heard a response back. It looks like she's been in meetings since lunch.

I will check with her in the morning to see if she has an update.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Addison Burk [mailto:Addison.Burk@metronetinc.com]
Sent: Tuesday, May 22, 2018 1:12 PM
To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Cc: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>; Nicole Sugg <Nicole.Sugg@metronetinc.com>
Subject: RE: Metronet Applications

Hey Sarah,

Thank you very much for the information. According to FCC guidelines, there is 45 days to survey and an additional 14 days for a make ready response. All applications in question are past 60 days for both survey and make ready with no progress or response. With the restrictions of only being able to submit 300 poles a month, there is a strong emphasis and focus on those applications outstanding with Windstream. I want to ensure that we are in good communication and standings with Windstream during this process but at the same time processing applications within FCC guidelines.

I greatly appreciate your willingness to help and the open line of communication you have provided. My fear is going forward this could potentially be an issue for both sides regarding timelines. If there is anything we can do to contribute in this process, let me know. Fill free to reach out with any questions or concerns.

Thank you,

Addison Burk

Permitting Supervisor

From: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Sent: Tuesday, May 22, 2018 12:02 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: Metronet Applications

Lauren,

I attached the email that I sent on 05/11 with the update on 14 of these applications where they were approved w/ make ready. I have contacted the engineer for the other three, see highlighted below.

We have 14 days after our approval to send the make ready estimates.

Let me know if you have any questions.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]

Sent: Tuesday, May 22, 2018 11:20 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: Metronet Applications

Windstream Application	Poles	Submittal Date	Days Since Submittal
LX135-01W	25	3/15/2018	68
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LX135-04W	25	3/17/2018	66
LX135-05W	25	3/17/2018	66
LX135-06W	3	3/17/2018	66
LX-FR02-04W	10	3/17/2018	66
LX-FR02-03W	25	3/17/2018	66
LX-FR02-01W	25	3/17/2018	66
LX-FR02-02W	25	3/17/2018	66
LX135-02W	25	3/19/2018	64
LX-FR04-05BiW	12	3/19/2018	64
LCP-LX167-01W	25	3/19/2018	64
LCP-LX167-02W	25	3/19/2018	64
LCP-LX167-03W	25	3/19/2018	64
LCP-LX167-04W	25	3/19/2018	64
LCP-LX167-05W	22	3/19/2018	64

Good Morning Sarah,

Here is the first batch of applications that we are waiting to hear back on.

Please let me know if you need any more information.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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From: Addison Burk <Addison.Burk@metronetinc.com>
Sent: Tuesday, May 22, 2018 2:12 PM
To: Hays, Sarah K
Cc: Lauren Sandefur; Nicole Sugg
Subject: RE: Metronet Applications

Hey Sarah,

Thank you very much for the information. According to FCC guidelines, there is 45 days to survey and an additional 14 days for a make ready response. All applications in question are past 60 days for both survey and make ready with no progress or response. With the restrictions of only being able to submit 300 poles a month, there is a strong emphasis and focus on those applications outstanding with Windstream. I want to ensure that we are in good communication and standings with Windstream during this process but at the same time processing applications within FCC guidelines.

I greatly appreciate your willingness to help and the open line of communication you have provided. My fear is going forward this could potentially be an issue for both sides regarding timelines. If there is anything we can do to contribute in this process, let me know. Feel free to reach out with any questions or concerns.

Thank you,

Addison Burk
Permitting Supervisor

From: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Sent: Tuesday, May 22, 2018 12:02 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: Metronet Applications

Lauren,

I attached the email that I sent on 05/11 with the update on 14 of these applications where they were approved w/ make ready. I have contacted the engineer for the other three, see highlighted below.

We have 14 days after our approval to send the make ready estimates.

Let me know if you have any questions.

Thank you,

Sarah Hays
Analyst II – Engineering Support | Windstream
11101 Anderson Drive, Suite 100 | Little Rock, AR 72212
sarah.k.hays@windstream.com
o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [<mailto:Lauren.Sandefur@metronetinc.com>]
Sent: Tuesday, May 22, 2018 11:20 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: Metronet Applications

Windstream Application	Poles	Submittal Date	Days Since Submittal
LX135-01W	25	3/15/2018	68
LX132-01W	25	3/14/2018	69
LX135-03W	25	3/17/2018	66
LX135-04W	25	3/17/2018	66
LX135-05W	25	3/17/2018	66
LX135-06W	3	3/17/2018	66
LX-FR02-04W	10	3/17/2018	66
LX-FR02-03W	25	3/17/2018	66
LX-FR02-01W	25	3/17/2018	66
LX-FR02-02W	25	3/17/2018	66
LX135-02W	25	3/19/2018	64
LX-FR04-05BiW	12	3/19/2018	64
LCP-LX167-01W	25	3/19/2018	64
LCP-LX167-02W	25	3/19/2018	64
LCP-LX167-03W	25	3/19/2018	64
LCP-LX167-04W	25	3/19/2018	64
LCP-LX167-05W	22	3/19/2018	64

Good Morning Sarah,

Here is the first batch of applications that we are waiting to hear back on.

Please let me know if you need any more information.

Thank you!

Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

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From: Hays, Sarah K
Sent: Tuesday, May 22, 2018 1:02 PM
To: Lauren Sandefur
Subject: RE: Metronet Applications
Attachments: Windstream Approved Applications

Lauren,

I attached the email that I sent on 05/11 with the update on 14 of these applications where they were approved w/ make ready. I have contacted the engineer for the other three, see highlighted below.

We have 14 days after our approval to send the make ready estimates.

Let me know if you have any questions.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur [mailto:Lauren.Sandefur@metronetinc.com]

Sent: Tuesday, May 22, 2018 11:20 AM

To: Hays, Sarah K <Sarah.K.Hays@windstream.com>

Subject: Metronet Applications

Windstream Application	Poles	Submittal Date	Days Since Submittal
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LX135-06W	3	3/17/2018	66
LX-FR02-04W	10	3/17/2018	66
LX-FR02-03W	25	3/17/2018	66
LX-FR02-01W	25	3/17/2018	66
LX-FR02-02W	25	3/17/2018	66
LX135-02W	25	3/19/2018	64
LX-FR04-05BiW	12	3/19/2018	64
LCP-LX167-01W	25	3/19/2018	64
LCP-LX167-02W	25	3/19/2018	64
LCP-LX167-03W	25	3/19/2018	64
LCP-LX167-04W	25	3/19/2018	64
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Lauren Sandefur

Metronet | Permit Specialist

3701 Communications Way | Evansville, IN 47715

Office: 812.213.1328

www.MetronetInc.com



From: Hays, Sarah K
Sent: Friday, May 11, 2018 9:22 AM
To: Lauren Sandefur
Cc: Edwards, Kimberly; Addison Burk; Nicole Sugg
Subject: Windstream Approved Applications

Lauren,

Good morning. I have heard back from our engineer and the following 14 applications that total 334 poles have been approved w/ make ready . We will have the make ready estimates to you in 14 days.

LX132-01W
LX135-01W
LX135-02W
LX135-03W
LX135-04W
LX-FR02-01W
LX-FR02-02W
LX-FR02-03W
LX-FR04-05BiW
LX167-01W
LX167-02W
LX167-03W
LX167-04W
LX167-05W

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays

Analyst II – Engineering Support | Windstream

11101 Anderson Drive, Suite 100 | Little Rock, AR 72212

sarah.k.hays@windstream.com

o: 501.748.5864 | f: 330.486.3600

From: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Sent: Tuesday, May 22, 2018 1:04 PM
To: Hays, Sarah K
Subject: RE: Metronet Applications

Thank you very much!

Lauren Sandefur
Permit Specialist

From: Hays, Sarah K <Sarah.K.Hays@windstream.com>
Sent: Tuesday, May 22, 2018 12:02 PM
To: Lauren Sandefur <Lauren.Sandefur@metronetinc.com>
Subject: RE: Metronet Applications

Lauren,

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sarah.k.hays@windstream.com
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To: Hays, Sarah K <Sarah.K.Hays@windstream.com>
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LX135-05W	25	3/17/2018	66
LX135-06W	3	3/17/2018	66
LX-FR02-04W	10	3/17/2018	66
LX-FR02-03W	25	3/17/2018	66

LX-FR02-01W	25	3/17/2018	66
LX-FR02-02W	25	3/17/2018	66
LX135-02W	25	3/19/2018	64
LX-FR04-05BiW	12	3/19/2018	64
LCP-LX167-01W	25	3/19/2018	64
LCP-LX167-02W	25	3/19/2018	64
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Good Morning Sarah,
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Sent: Friday, May 11, 2018 9:22 AM
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Cc: Edwards, Kimberly; Addison Burk; Nicole Sugg
Subject: Windstream Approved Applications

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LX135-01W
LX135-02W
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LX-FR02-01W
LX-FR02-02W
LX-FR02-03W
LX-FR04-05BiW
LX167-01W
LX167-02W
LX167-03W
LX167-04W
LX167-05W

Let me know if you have any questions or concerns.

Thank you,

Sarah Hays

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